

Science and Mathematics Education Centre, Curtin University of Technology

**Title of the Thesis:
Changes in Classroom Environment and Teacher-Student
Relationships During the Transition from
Primary to Secondary School**

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ABSTRACT

This study investigated students' perceptions of the generalist learning environment of the primary school compared to the same students' perceptions of the learning environments of the secondary school, with a particular focus on science learning environments. The role of student sex and school size pathways were investigated as factors influencing changes in students' learning environment perceptions. The same students' perceptions of the learning environment were collected in the final stages of primary school and again after their initial term in secondary school. Data collected were both qualitative and quantitative in nature, with the quantitative data derived from short forms of the My Class Inventory and the Questionnaire on Teacher Interaction. Insights were gained into how students' perceptions of learning environment, including the teachers' interpersonal style, changed during their first exposure to secondary learning environments and teachers, and how these changes in perceptions during transition depended upon school size and student sex. The study found that students' perceptions of the learning environments did change across transition, but that these changes on some scales varied with student sex and school size pathway.

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Verification of Authenticity

Verification that this is the work of Peter Ferguson alone and has not been submitted previously, in whole or in part, in respect of any other academic award

Signed:

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CHAPTER 1

INTRODUCTION

This document details the conceptual background, research processes and findings used to establish the thesis at the centre of the study. Contextually, the thesis focuses on the transition, by students, from primary to secondary school. In the key research questions, this focus is narrowed to students' perceptions of this transition in general, and their perceived changes in learning environments and teachers' interpersonal style in particular. These changes in students' perceptions are explored for the overall transition cohort, as well as for student sex-based and transition pathway-based subgroups.

Chapter 1 introduces the study by outlining the contextual background and study framework in detail, commencing with a brief discussion of key historical antecedents (Section 1.2). Section 1.3 argues the significance of the study in terms of these historical antecedents and current educational practices. Section 1.4 presents the conceptual framework of the study, along with key concepts and definitions. Section 1.5 provides an overview of the study design and structure highlighting potential limitations inherent in this design. Section 1.6 presents the specific research questions that provide the overall focus and parallel the structure of the study, and consequently the structure and focus of subsequent chapters. Finally, Section 1.7 provides a summary of succeeding chapters contained within this document.

1.1 Primary to Secondary School Transition

Most mainstreamed school systems have evolved into some form of 'primary/secondary' structure with a transition between the two around early adolescence. In some instances, this transition is two-stepped with a 'middle school' stage splitting these primary and secondary stages. What invariably

distinguishes the primary and secondary stages of schooling, apart from the ages of the students, is the degree of subject and teacher specialisation within each. This change to greater subject-based specialisation across the primary/secondary divide parallels with changes in the teachers' background and duties and the physical nature of learning environments, as well as elements of curriculum structure, focus and delivery. Such variation, typically, results in a major change for students when they transfer from one sector to the other. As it coincides with early adolescence, this change includes a re-defining of many aspects of school for students, including relationships with both peers and teachers.

Many aspects of primary/secondary transition are still to be thoroughly investigated, including specific comparisons of the generalist primary classroom and teacher with the specialist secondary classroom and teacher. Teaching folklore suggests that the generalist and specialist approach results in substantially different learning environments characterised not only by the obvious physical differences in classroom design and equipment, but also by the nature of the interactions and relationships between teacher and student. There is agreement that such a change must occur and that it presents some difficulties for students, but teachers disagree about the optimum timing (in terms of student age/development) of the change from a generalist to a subject specialist approach. There is also considerable debate amongst teachers centred upon the perceived educational values associated with each approach within the context of middle-school classrooms.

As previously mentioned, various 'middle-school' structures do exist within Australian school contexts. These structures most commonly add a mid-stage to the transition which is some blend of the two generalist/specialist extremes. These structures are often the result of attempts to alleviate transition difficulties

for students. Variations of middle school structures exist in many systems, including the USA and Britain, and are increasingly being trialed within Australia (e.g. Kite, 1996; Bassano, 1997; Henning, 1997). Although, all are to some degree a generalist/specialist blend or compromise, here too the debate of the relative merits of the two approaches and the influences on student learning and attitudes remain unresolved. Most observers agree, however, that this is a stage of schooling that does not meet student needs very well. Documentation (e.g. Department of Education for South Australia, 1992a; 1992b; Department of Employment, Education, Training and Youth Affairs, 1996) that focuses upon this stage of schooling commonly uses the term 'alienation' to describe the general impact on students.

The central theme of this thesis is the change in student perceptions of school, during student transition from primary to secondary school, in a traditional, one-step structure. The transition investigated in this study coincided with early adolescence, with the typical age for students undergoing the transition being 12 years. The focus within this study was restricted to the time immediately prior to transition and the initial weeks after transition. Participating schools were selected to offer considerable variation of experiences (e.g. school size, location, etc.) within a one-step transition structure.

The study investigated students' perceptions of changes in learning environments including teacher/student interaction aspects. Within these environments, potential influencing factors related to changes in students' perceptions were identified and explored. As the background and training that the teacher brings to each environment varies considerably, the role of the teacher within the "learning environment was one key aspect considered. Changes in "actual' student perceptions were compared with student preferences or ideals at the same ages and stage of schooling. It was

anticipated that students would perceive the generalist primary and specialist secondary school environments as considerably different.

Specific factors considered were variations in students' perceptions due to transition pathway, as determined by school size and student sex. This study also investigated changes in students' curriculum preferences during this time, including their anticipation of secondary subjects prior to starting secondary school. Science was a key focus in curriculum considerations. For all data collected, the key contextual boundary was defined by the primary/secondary transition, including the pre-transition phase described as "anticipatory" and the post-transition phase described as "incorporative" (see Section 2.2).

It was the intention of the researcher to describe in a somewhat holistic way the many and varied aspects of the transitional event, particularly from the student perspective, and then to consider within this broad framework changes in perceptions of specific, clearly-defined factors. This composite broad and narrow approach was taken because of a belief that many of the specific perceptions of students within classroom contexts are influenced by broader issues within adolescent life generally.

As a result of considerable anecdotal evidence contained within various governmental reports over many years (e.g. New South Wales Ministry of Education [Wyndam], 1957; Department of Education for South Australia [Karmel], 1971; Education Department of Tasmania [Scott], 1977; National Board of Employment, Education & Training, 1992a) and available research evidence (e.g. Cotterell, 1979, 1982; Power & Cotterell, 1981; Ferguson, 1989; Speering & Rennie, 1996), concerns about the middle years of schooling and primary/secondary transition are clearly warranted. As a consequence, many schools have implemented transition programs in an attempt to minimise

problems experienced by students. Usually a key focus of such programs is an attempt to change the nature of mid-school learning environments to a more 'nurturing' junior secondary environment with greater opportunity for student/teacher relationships to develop, and/or a greater degree of teacher/environment specialisation in the senior primary school. Recently there have been many such initiatives across parts of Australia to deal with student adjustment problems and motivation and achievement following transition and during junior secondary years (Cripps, 1994; Kite, 1996; Bassano, 1997; Henning, 1997). However, in the main, decision making and consequent strategies adopted are based upon no more than a strongly perceived need to do something, teacher assumptions about student perceptions and need, and anecdotal evidence. There exists a clear need for a greater research base to aid decision making in relation to this aspect of schooling. This current study will add to the existing knowledge of this stage of schooling in general, and to knowledge of students' learning environment perceptions in particular.

1.2 Historical Antecedents

Although in recent times primary/secondary transition and middle school issues have increasingly been considered in policies and published documentation, it is an educational event that historically has largely been overlooked, that is, except for a small number of key researchers who focussed on the implications of the overall event and its general effect on students, particularly the psychosocial difficulties encountered by students (e.g. Nisbet & Entwistle, 1969; Blyth, Simmons & Bush, 1978; Power & Cotterell 1981; Ahola-Sidaway, 1986; Midgley, Eccles & Feldlaufer, 1991).

Studies in Britain in the early days of comprehensive schooling (Nisbet & Entwistle, 1969) suggested that:

... only ten percent of children wholly enjoyed their early experiences in secondary school.
... Research shows that the after effects (of transition) seem to leave their mark on children's academic performance throughout the first year of secondary school (p. 87).

A 1977 study by Power and Cotterell in Australia (1981), also suggested that students had a problem with transition. Events reported by students describing experiences of anxiety or alienation fell into three contexts: "... the general, physical and organisational milieu (35%), the classroom learning environment (28%), and informal peer group settings (37%)" (p. 10). The study specifically focussed upon student attitudes to school, teachers and the curriculum, and concluded:

That students should begin to view their school subjects as more and more useless and irrelevant to their needs suggests a mismatch of major proportions between the curriculum of the high school and the student body, a mismatch unlikely to be developmentally desirable (p. 23).

Cotterell (1992, p. 42) suggested that researchers into transitional change offer two theories:

...a cumulative change theory, that the coincidence of several psychosocial changes increases stress on adjustment (for example, Simmons et al., 1987); and a discontinuity theory, that systematic differences between the environments of primary/elementary school and secondary/junior high school accentuate the likelihood of mismatch between person and environment, manifest in motivation and achievement decline (e.g. Feldlaufer et al., 1988; Power & Cotterell, 1981).

Within this thesis, the researcher does not accept that the discontinuity and cumulative change effects need necessarily be seen as mutually exclusive viewpoints. Many out-of-school influences appear to be developmental and

cumulative in effect, with the primary/secondary transition as a clearly focussed discontinuity within this broader context. School transition most likely contributes to longer-term cumulative changes for adolescents, but also has clearly focussed immediate effects directly resulting from transitional changes.

Historical research has established that problems exist for students during the traditional transition process with some researchers suggesting that the changing learning environment is a possible contributing factor. Recent reports indicate that, although these research data have been available for some time, the situation has not greatly improved for students during these alienating middle years of schooling.

The timing of transition varies slightly from system to system, but usually occurs around early adolescence. This phase may mark the start of patterns of attitude and achievement, to subjects and education generally, that continue into the future (Speering & Rennie, 1996; Ferguson & Speering, 1997). It appears also that influencing factors are complex and many. Influential factors suggested by research include: organisational and cultural variables (Ahola-Sidaway, 1986); environmental variables (Midgley, Eccles & Feldlaufer, 1991); peer group variables (Coleman, 1979); changes in curriculum and educational expectations, and school size (Cotterell, 1979, 1992). One study (Silins, 1994) even suggests that out-of-school factors external to the individuals concerned could have a major influence (e.g. community). Existing research has clearly identified the environment and the teacher as important influences in determining students' initial perceptions of secondary school. However, many only discuss these elements in general terms, and the role of the typical learning environments (in particular, the role of the teacher within the learning environments) has not been included in most studies. This thesis specifically explores changes in students' perceptions of teacher

interpersonal style within the transition context. One hypothesis guiding the current research is that differences in students' perceptions of teacher interpersonal style will exist across transition, and that the teachers' role will prove to be critical, in terms of influence upon students, when comparing primary and secondary classrooms.

The crucial role of cultural aspects in educational change was highlighted by Owens and Steinhoff (1976) and Owens (1987). Ahola-Sideway (1986) suggested that the primary and secondary school communities possess radically different cultures and that it is this change in culture that most affects students during transition. In a recent cultural study, Grady (1994) concluded that both teachers and students see some aspects of their classrooms and schools as climatically and culturally different across transition years. Speering and Rennie (1996) recently highlighted the role of the teacher within this changing framework, specifically the way in which students perceive the changing relationship between themselves and the teacher.

The degree of change determined by the size/type of the schools involved may well influence students' responses relating to their perceptions of school, classrooms and teachers during the transition experience. A preliminary study by Cotterell (1992) led him to conclude:

As researchers consider the interplay between these different environments, the factor of population size, given the growth in size of junior schools, merits greater attention in the research on transition (p. 43).

Almost invariably, during transition, students move from schools with smaller populations to those of larger populations. The secondary school is often situated within a different community which exhibits different cultural values and educational priorities (e.g. a major regional centre) than the primary

school. If Cotterell's preliminary findings are valid for the general population of students, this could be a factor affecting their perceptions of, and adjustment to, secondary school. Further research, involving larger samples, is needed to determine this.

Over the last decade, educational research has clearly established that some aspects of school are experienced differently by students of different sexes (Kelly, 1987; Clark, 1990; Department of Employment, Education, Training & Youth Affairs [DEETYA], 1996), and that learning environments play some role in this (Terwel, Brekelmans, Wubbels & van den Eeden, 1994; Speering & Rennie, 1996). It could therefore be assumed that transition may present different experiences and problems for boys and girls.

Certain secondary subjects have been described as gender exclusive for girls in that achievement and participation levels are often less than ability would predict; mathematics, the sciences and technology all fall in this category (Commonwealth Schools Commission, 1987) although some recent publications suggest this may be changing, at least in terms of enrolment patterns (National Board of Employment, Education & Training [NBEET], 1995). A longitudinal study (Baird, Gunstone, Penna, Fensham, & White, 1990) has shown a rapid decline in student interest in science during transition from primary to secondary school. This extensive study focussed on science and found: "One trend, observed across all schools, was that the level of students' interest, application to, and enjoyment of, science diminished sharply after grade seven" (p. 13). It appears that science may present typical problems for some students (as described by earlier researchers), commencing at least with transition. Speering (Speering & Rennie, 1996; Ferguson & Speering 1997) described in detail reflections of individual students as they moved from primary school into secondary school. These descriptions suggest that

transition problems still exist, within Australian contexts, and that secondary science may still be particularly alienating for girls.

1.3 Significance of the Current Study

In this study, the researcher extended existing research which suggests that the learning environment is a key influence on student satisfaction within school contexts. It investigated whether students' perceptions of the typical primary and secondary classroom environments are different, as well as the influence of some individual background differences that students bring to transition. Specifically, the study investigated the influence of the sex of the student and transition pathway, as defined by school size, upon student experiences and environmental perceptions.

All subject specialisations could not be studied in detail in the present research, although all were included for general comparison. Science was considered in detail as a secondary subject with a high degree of specialisation in environment, teacher background and approach. As a consequence, it was a premise of the study that science is a subject for which changes in learning environment perceptions due to specialisation factors would most likely be pronounced. Science is also a subject for which earlier studies would predict sex differences in students' attitudes and perceptions.

In the study, the researcher used students' perceptions as a key data source, because it has been clearly established that student perceptions of environment, including teacher/student interactions, are linked to student outcomes, both cognitive and affective (Haertel, Walberg & Haertel, 1981; Fraser & Fisher, 1982b,1983; Fraser 1986a, 1986b; Wubbels, Brekelmans & Hermans, 1987).

This prior research has also established the validity of the students' perceptions as a data source in studies with such a focus.

1.4 Conceptual Framework and Key Definitions

The study can be conceptualised as a series of domains for which each is a subset of a broader one. These domains range from general psychosocial changes associated with a young person's maturation with the onset of adolescence, through to a series of linked changes, and to the specifics of the school classroom. Central to all of these domains, at this time in a student's life, is the issue of coping with change. For this reason, as well as the structure of "nested" domains, the study also had a longitudinal structure temporally bounded by the primary-to-secondary school transition. A diagrammatic representation of these domains is shown in Figure 1.1. These domain-based changes are temporally defined by the transition from primary to secondary school.

Within the broad conceptual framework, specific domains relevant to this study are: those pertaining to school culture and school size; the classroom, specifically the elements of climate and environment; student relationships during adolescence, particularly student/student and perhaps most importantly teacher/student relationships within classroom contexts; student sex-related perceptions of school, particularly during early adolescence; and the curriculum in late primary and early secondary school. Within this study, the science classroom was chosen as an illustrative focus of many of these domains and much of the data was drawn from this context.

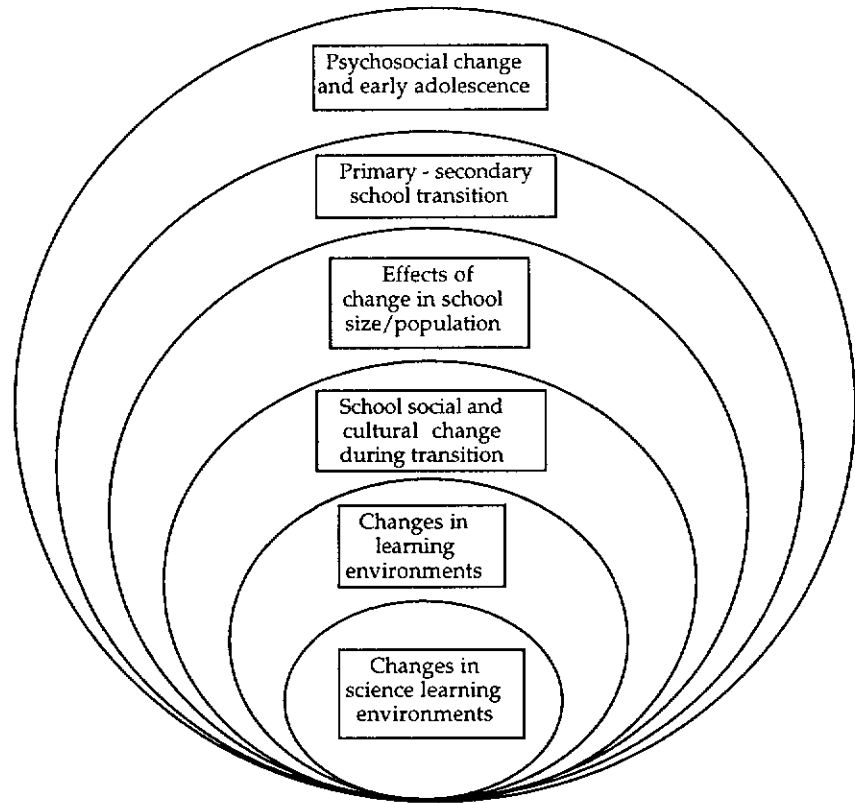


Figure 1.1 Diagrammatic Representation of the Key Conceptual Domains of the Study

As the study was longitudinal, pre/post comparisons of these data, with the transition event as a point of focus for change, provided the central design. However, the study did not consider student outcomes in any data or analysis as a clear link has been established between outcomes and environment perceptions in pre-existing studies (Fraser, 1986a) (see Section 2.4.5).

Some of the broader domains within the study are difficult to define for the purposes of data collection and analysis. One example is cultural and social aspects. Although informed by earlier research, the boundaries in these instances were to a large extent drawn by the participating students themselves in their responses to open-ended questions. That is, what students chose to

nominate was accepted as important for them. In the more detailed analyses, relevance and focus are clarified by the defining boundary of the classroom.

The transitional boundary for the research includes the immediate pre-transition stage and the later post-transition stage and the general psychosocial change experienced by students during this period of their development. These boundaries are further defined in Section 2.2. The inclusion of these transitional phases gave the study a longitudinal pre-post comparative design. As this event aligns with (and is perhaps partially defined by) early adolescence, the inter-relationship between these two, the personal and the institutional, provides the broad conceptual background to the study.

Following the work of Cotterell (1992), one focus of the study was the effect of changes in school size upon students' perceptions of environment and teacher interpersonal style across the primary/secondary transition. In this current study, the classification of school size was somewhat arbitrary and was based upon clearly quantifiable criteria such as the size of the transition cohort from a particular school as well as relevant internal school structures relating to transition (within-school or without-school). Transition pathways are defined by various primary/secondary combinations of these school transfer variations. These were chosen because they arguably correlate with other, less easily determined, potential influences such as degree of dislocation for students during transition, the scope of the schools in terms of resourcing specialisations, and the culture of the broader community that the schools serve.

The classroom environment is to be interpreted as climate, the term being defined by a set of specific psychosocial dimensions following Moos (1974a, 1974b, 1979, 1987) and Fisher and Fraser (1981). Teacher interpersonal style

is similarly defined by specific dimensions (Leary, 1957; Wubbels, Brekelmans & Hermans, 1987; see Section 2.5).

1.5 Study Design and Limitations

As previously mentioned, the design was longitudinal comprising pre- and post-transition data collection. The primary/secondary transition was conceptually envisaged as a three- or four-stage discontinuity (see Section 2.2). This discontinuous nature of the transition creates a deal of complexity as it has the effect of rearranging the structures and populations of participant student groups.

Further complication is added in that, in some instances, class and cohort groups are synonymous, whereas in others they are not. Although the reliability of environment perception scales is greater when treated as class means (discussed in Chapters 2 and 3), much of the analysis for this study was based upon individual student scores. This was unavoidable given that class groupings after transition are different to class groupings prior to transition, and that many schools at the primary level are absorbed into each secondary school. One consequence of this complex design is that standard statistical analysis of the pre-event/post-event has considerable potential error. As a consequence of this, other supportive data have a triangulation role in determining confidence in particular inferences and interpretations.

To account for these concerns, the questionnaires used were designed for data that could be both qualitatively and quantitatively analysed. The quantitative aspect involved the dimensions of classroom climate and teacher interpersonal style, as defined earlier, while the qualitative dimension involved student responses to open-ended questions selected to provide some degree of

triangulation for the quantitative analysis. This section of the questionnaires also had a broader focus and included general change issues as well as the more specific classroom- and teacher-related ones. To maximise validity of inferences, individual student questionnaire responses were only included if both pre-test and post-test data were available for that student. Also, a great amount of qualitative data were collected to aid interpretation. Statistical analyses were employed, but findings are only treated with a degree of confidence if clearly supported by qualitative data.

The study could legitimately have been undertaken as a case study similar to those described earlier by Ahola-Sideway or Speering and Rennie. However, it was felt that a larger-scale study would allow more justifiable generalisations. To this end, a sample of 1,500 students was used, this constituting the total final-year student population (discounting absentees) of 48 primary schools as they moved into their 16 linked secondary schools. All participating schools were located in Tasmania and were selected to be representative of major public and private school types (defined by size, location, internal structure, etc.) available to students within that state.

Each student completed a questionnaire on two occasions, one before the transition and one after transition. This resulted in some attrition and finally 1,040 paired responses were used as the data source. All questionnaires were administered by the researcher within the students' classrooms.

Key potential concerns arising from the complexity of the study's design are summarised below:

1. The degree of student group discontinuity creates considerable analysis complexities. The nature of these complexities are two-fold:

a) It was difficult to address the questions to the students in a meaningful way (e.g. comparing a single primary school classroom and teacher for each student with a “cross-sectional” average classroom and teacher profile within the high school). This could be simplified by basing the data collection on specific subjects and teachers as they exist within the secondary school, but this merely shifts the difficulty to the pre-transition stage where such distinctions do not exist. Students have the same teacher and learning environment in primary school for each subject and, as a consequence, to talk of “your science classroom” or “teacher” has ambiguities that potentially could affect the validity of the data. To place the problem at the pre-transition stage has the added complication of the students being younger and perhaps less able to deal with seemingly ambiguous questions.

b) Organising data for analysis purposes was difficult. The changing student groupings did not allow group means (class or school) to be used for much of the analysis. Class groups in the primary school were broken up as the students moved to different high schools or joined a new group of classmates. These complexities had the effect of increasing potential error.

2. The structure of the study is both hierarchical (individual, within-class, within-school) and longitudinal (pre-post transition) and involves a considerable number of classroom environment variables. A suitable analysis process that completely accounted for all of these aspects as a whole was not available (especially given the group dynamics as explained above). Therefore alternative analyses were employed, but these compromises may have compounded any potential measurement and analysis-based errors.

3. Qualitative data were also gathered by questionnaire rather than interview to allow for a greater size sample. As questions were therefore totally

predetermined, the language within questions asked, however open-ended, could to some degree define the parameters of responses and may have resulted in misinterpretation of questions (by students) or responses (by the researcher) no matter how carefully administered.

4. The focus of the study was very narrowly defined temporally to the final stage of primary school and the initial stage of secondary school. All perceptions measured early in students' high school careers could change later once students become more established in secondary school. Therefore, findings might only apply to this narrow time frame (although other case study research suggests that the trends remain consistent well into secondary school e.g. Speering & Rennie, 1996).

To minimise the potentially detrimental effects of these weaknesses prior to data collection, a pilot study was conducted using one large school cluster (secondary school plus its main feeder primary schools) one year before the main study. This pilot study involved 150 students and 5 schools (1 secondary and 4 linked primary schools). The pilot study was used to develop and refine the questionnaires as well as to develop a workable technique and timetable for a large-scale longitudinal study. The pilot study provided the further benefit that, because pilot schools used also participated in the main study in the following year, comparisons across different transition years could be made (on a limited scale).

It was partially as a consequence of the pilot study that the approach to data gathering was chosen rather than trying to separate out discreet subject/teacher primary environments. Primary students in the pilot study suggested that it was nonsensical to them to ask about their science teacher and classroom environment as opposed to their English teacher or their maths teacher. They

argued that, if asked about their teacher and classroom in such a differentiated manner, they would simply reproduce identical responses for the vast majority of comparable items, if not for all items.

The two questionnaires used to measure classroom environment were the short forms of *My Class Inventory (MCI)* (Fisher & Fraser, 1981; Fraser, Anderson & Walberg, 1982) and *Questionnaire on Teacher Interaction (QTI)* (Wubbels, Brekelmans & Hermans, 1987). These were used in both actual and preferred (or ideal) versions. The versions of the questionnaires used in the main study presented some initial difficulties regarding reliabilities (especially the QTI), but these were overcome through slight scale changes (see Section 3.11). Cross referencing between the qualitative and quantitative data helped to clarify many apparent inconsistencies and ambiguities.

1.6 Research Questions

The thesis of this study was that students' perceptions of classroom environments change across transition, and that these changes are influenced by student sex and school size transition pathway.

Specifically the research questions used to test this thesis were:

Research Question 1

How do male and female students perceive and describe the broad changes from primary to secondary school, including changing reactions to the subjects offered within the curriculum?

Research Question 2

Do students perceive changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 3

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition vary for student sex for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 4

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and 8 scales of the QTI) across transition vary for transition pathway (defined by school size) for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

1.7 Summary of Thesis Chapters

This chapter has provided an introduction to the study with particular reference to the significance of the study, key historical antecedents and the conceptual framework of the study, the overall study design, including a discussion on

inherent limitations and, finally, the specific research questions that this study addressed.

Chapter 2 details a discussion of major writings and previous research that was drawn upon for this study. This review includes literature relating to primary/secondary transition, along with key research findings and inferences. Existing literature detailing possible influences of school size and student sex on students' perceptions of school are discussed, both in the context of transition in general, and in reference to students' potential interactions with learning environments and the curriculum. Curriculum considerations include specific reference to the science curriculum as this is a key learning environment focus for the current study.

The literature review includes a discussion of the theoretical background to, and consequent evolution of, dimensions of learning environment and teachers' interpersonal style, as well as the relevant details for the specific instruments used for their measurement within this current study, that is, the *My Class Inventory (MCI)* and the *Questionnaire on Teacher Interaction (QTI)*.

Chapter 3 contains an outline of the methodology of the study with particular reference to:

1. The pilot study undertaken as a preliminary to the main study.
2. The sample selection for the main study.
3. The data collection procedures used in the main study.
4. The structure, development and administration of the questionnaires, including both qualitative and quantitative components.
5. Validation procedures for the variations of the MCI and QTI instruments used within the study.

6. The preparation and organisation of the data for analysis.
7. The data analysis techniques employed.

Chapter 4 reports on and discusses results relevant to Research Question 1, that is, data relating to students' general experiences and perceptions during transition and other general transition issues. Perceptions considered are in relation to: the primary school specifically, the secondary school specifically, and across-transition comparisons. Also included are students' general descriptions of the transition event itself. Finally, Chapter 4 reports on and discusses results relevant to students' perceptions of, and attitudes towards, the curriculum both pre- and post-transition.

Chapter 5 contains results and discussion relevant to Research Questions 2, 3 and 4. Specifically this includes all findings related to changes in students' perceptions on the 13 environment variables (MCI & QTI) across transition, and whether changes across transition vary with student sex or school size pathway.

Specifically, the chapter contains results from preliminary multivariate analyses and subsequent univariate analyses with graphical representations and discussions of key findings.

Chapter 6 draws conclusions across the study as a whole in regard to both findings and general methodologies employed. Finally, it points to general questions and issues arising from the study as well as potential future research implications .

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher provides and discusses the contextual framework for the study and surveys the various relevant domains by outlining key historical and theoretical antecedents. This is done by means of a literature overview. The contextual focus of this study is primary to secondary school transition, which is an event within a student's life that impacts upon, and is affected by, the student's general developmental traits and social roles and behaviours around this time. For this reason, the review will touch upon general adolescent social and psychological issues as well as those that directly relate to the transitional and learning environment aspects that underpin this current study.

This thesis is built upon the premise that general influencing factors during adolescence are to some degree inter-related with more specific aspects such as schools, classrooms and teachers. It is also assumed that issues and priorities arising from one domain within the individual's life at this time may influence judgements and perceptions within others. The domains with relevance to the study can be envisaged as a nested set (see Figure 1.1 for a diagrammatic representation) within the broad context of early adolescence. This nested set of inter-related domains provides the overall structure for this chapter.

The various sections of this chapter are selected to reflect the structure of the study as represented in Figure 1.1. The overall structure of the chapter involves moving progressively from the broader focus of early adolescence and general change in an adolescent's life, during the time that primary to secondary transition occurs, to the specifics of changes and issues arising from

educational settings that influence students at this stage of development. Key influences on adolescents during this time are established and any resultant effects upon student behaviours and priorities determined. As the key educational setting of this study is the classroom, and, in particular, the learning environment and teacher interpersonal style perceptions of students within these settings, these are considered in detail.

The current study is linked to this overall review in such a way as to highlight its position within the overall conceptual and research framework as discussed. For the purpose of this particular study, all aspects are temporally bounded by the primary/secondary transition.

The chapter is divided into four main sections, each being further divided into subsections. Section 2.2 considers the broader psychosocial changes occurring during early adolescence, Section 2.3 those issues that greatly impact upon an adolescents' school life both external to the classroom and within classroom contexts. This section also includes a critical summary of previous research that has focussed on primary/secondary transition.

The third section (2.4) considers in detail relevant learning environment theory and research, and the final section (2.5), theory and research on teacher interpersonal behaviour with particular consideration of classroom climate contexts. These two Sections specifically focus upon the instruments used to assess learning environments within this study. An overall chapter summary is included in Section 2.6.

2.2 The Psychosocial Dimension: Pre- and Early-Adolescent Development and 'Rites of Passage'

In this section, ways of viewing changes influencing adolescents and resultant behavioural and attitudinal changes in the individuals concerned are explored. This background is important in establishing priorities and concerns of students during this phase of their development and schooling. Identification and description of these priorities and concerns was used to inform the interpretation of the largely qualitative data collected to address Research Question 1. General concepts developed within this adolescent development framework also assist in the definition and description of the transition from primary to secondary school as a 'life event'.

Commonly the primary/secondary transition phase within schools, whether abrupt and single step, or via a transitional grade or middle school, occurs around the onset of adolescence and therefore is potentially a powerful symbol of the 'leaving behind' of childhood. In non-industrialised cultures, leaving childhood has been largely biologically defined and equated with the onset of puberty, which is a specific, single event in a person's life. However, in modern society, such physical determinants of development have been absorbed into, and obscured by, cultural ones. One result of this is that the step into adulthood has been prolonged and much less clearly defined. Lipsitz (1980) suggests that, according to psychosocial literature, we make a transition into adolescence and then a later transition out of adolescence into adulthood. She points out that, in contemporary Western culture, it is denying the integrity of this critical stage of life (adolescence) to view it as purely transitional rather than a stage of development in its own right. Comparing adolescence with other developmental stages, Lipsitz argues that, in contrast, "no large body of literature, for instance, refers to infancy or childhood as transitional" (p. 22). This view then, describes adolescence as a period of time over which various

changes take place. Alternatively it can be seen as a focal point in developmental change.

This transition view of adolescence describes the move from childhood into adulthood in terms of critical events or discontinuities. Human developmental change is often defined by such critical events, especially during this change from child to adult. The notion of individuals passing through various phases within social organisations while moving into adulthood has its conceptual origins in the field of anthropology. Such phases are often signposted by specific events that mark the passage from one stage to the next. These events, often linked to some mystical or spiritual ritual common in primitive cultures, but also existent in modern Western cultures (eg. the Jewish Bar Mitzvah, the Christian Confirmation) have been termed “rites of passage” (Chapple & Coon, 1942; Van Gennep, 1960). Van Gennep (p. 11) conceptualised rites of passage events as typically having three phases, namely, preliminal (separation), liminal (transition) and postliminal (incorporation). The liminal or transition phase is the point of discontinuity between the stage being left and the new one being entered. In explaining a specific transitional event using these key phases, Van Gennep suggests:

Separation marks the onset of the passage and involves a reduction in or complete severance of the initiates from past social relationships. Transition marks the second phase of the passage and involves the initiates in activities designed to expose them to their new sets of relationships. Incorporation marks the third and final phase of the passage. Rituals and ceremonies provide dramatic opportunities to mark the changes associated with leaving one social state and entering another (p. 11).

Traditionally, the most celebrated of such rituals occur with the onset of puberty, but, as Blyth and associates suggest, “like most industrial societies, American society provides no formal recognition of the individual’s attainment of puberty” (Blyth, Simmons & Bush, 1978, p. 149). In fact, Lipsitz (1980)

points out that social transitions from childhood into early adolescence are among those most frequently ignored by social scientists within our culture. Blyth and associates suggest that it is a social transition of confused definition because, prior to it occurring, childhood development is described in terms of physical maturity, and the transition from post-adolescence into adulthood is more typically culturally defined. The variation in physical development between individuals further confuses any clear delineation of the onset of adolescence (Blyth, Simmons & Bush, 1978, p. 149). During this phase of their development, children have to simultaneously cope with dramatic changes in biology, social definition and organisational context. Perhaps the most major organisational change is that of transition from primary into secondary school.

It appears, then, that traditional discontinuities linking puberty to, and marking the exit from, childhood and entry to adulthood have been confused by a complex mix of events that now forms initiation into adulthood. These events are defined by many biological, social and cultural factors, and some (such as school transition) are built into institutional structures.

How can school structures be seen as reflecting the broader transition from childhood to adulthood? Ahola-Sideway (1986) suggests that school transition can legitimately be seen as an example of a rite of passage in the anthropological sense, a view supported by Elder:

Modern industrial societies generally rely upon nonfamilial authorities to define major transitional points in the life cycle... The movement into secondary school may well mark the social beginning of adolescence (Blyth, Simmons & Bush, 1978, p. 149).

However, Ahola-Sideway suggests that a fourth stage needs to be added to the three-stage conceptual framework of Van Gennep to study the school transition

fully. She suggests a pre-entry or anticipatory phase which precedes the other three. This phase can be “particularly traumatic, as individuals come face to face with expected and unexpected changes in their lifestyle” (Ahola-Sidaway, 1986, p. 9). Therefore, in the ill-defined mix of ‘initiation’ events, the school institution has an increasingly important role as society moves away from its traditional community structures.

Adolescence, seen as post-childhood and pre-adulthood, is often perceived as a difficult stage for all in contact with it. Is this a reality, or is it further evidence of a confused and ill-defined period? Historically and anecdotally adolescence is seen as a time of great “storm and stress”, but empirical evidence does not always support this view. Rather, Coleman (1980) suggests that :

...almost all of the results which have become available so far indicate that, although a small minority may show disturbance, the great majority of teenagers seem to cope well and to show no undue signs of turmoil or stress (p. 178).

An attempt to resolve this apparent classical versus empirical contradiction regarding the nature of adolescence led Coleman to propose a focal theory of adolescent development. Coleman’s theory considers three of the important themes in adolescent change, that is, conflict with parents, fears of social rejection, and anxiety over heterosexual relationships. Coleman (1980) found that there were peak ages for the expression of each of the various concerns, for both sexes. His focal theory proposes that:

...at different ages particular sorts of relationship patterns come into focus, in the sense of being the most prominent, but that no pattern is specific to one age only. Thus the patterns overlap, different issues come into focus at different times, but simply because an issue is not the most prominent feature of an age, does not mean that it may not be critical for some individuals (p. 184).

Added to the individual differences in focal priorities is the great variation in adolescent physical development (Blyth, Simmons & Bush, 1978, p. 149;

Eichhorn, 1980, p. 60). Many of the physical changes associated with adolescence are clearly linked to other psychosocial concerns, and they have a particular significance for early and late developers (Coleman, 1980, pp. 16-18). One aspect of the new events confronting adolescents is a rapidly evolving role dimension (Douvan, 1979, pp. 86-93), highlighting major sex-response differences. Therefore, adolescence itself may not necessarily be a time of storm and stress but, when Coleman's focal points of concern appear in conjunction with other pressures for a particular individual, this may be the result. Fundamental to an individual's adolescence is a redefining of social and cultural roles only partly determined by concurrent biological change.

One ongoing role for individuals is that which exists within a peer group framework. Although research suggests that the peer group is no more important for early adolescence than for middle childhood (Coleman, 1979), changes within the group structures do occur and these reflect evolving identities of the participants. Berndt (1990) found that peers' influence upon classmates' sense of self was especially salient in the junior high years. One important aspect of this was the way in which boys and girls related differently to peer groups, although they were equally important for both sexes (p. 96). Coleman (1980) suggested that here too empirical evidence is contradictory to the classical notion of inevitable adolescent-adult conflict (the generation gap). However, research suggests (Salmon, in Coleman 1979) that modern society and its lack of personal communities, for example the extended family, has "given rise to an acute concern with interpersonal relationships - a concern which is evident in the responses of the children and adolescents studied" (p. 103). Consequently, the establishment and maintenance of peer group relationships is increasingly important for children and adolescents. School structures have a major effect on friendship groupings and the consequent relationships which develop (Coleman, 1974). Therefore peer group

influences may not become more important for individuals, but do change in nature. In part, this change is directed by the changing school culture between the primary school and the secondary school.

Major change in social roles and interaction also takes place during early adolescence. In 1968 Elder (Coleman 1979, p. 8) suggested the existence of two types of role change, intra-role change and new roles. The former is typified by the expansion of existing role demands as we get older (eg. increased teacher expectations concerning responsibility placed upon students). By contrast, totally new roles are considerably more difficult to cope with, because the abruptness of their onset requires considerable adaptation. Coleman (1979, p. 8) claimed that role discontinuity was a major problematic factor during adolescence. The more subtle and complex biophysical changes experienced by girls during adolescence, compared with boys, manifests themselves in terms of differing propensities concerning interpersonal relationships (Douvan, 1979, p. 85). This different mode of relating is further reinforced by society, including peer groups, and its institutions (such as schools) (Coleman, 1980).

Much emphasis has been placed upon school curriculum, structures and teacher-student interactions over the last decade to diminish this sex stereotyping, especially in regard to aspects that have been shown to inhibit girls' participation (eg. Commonwealth Schools Commission, 1987; Ministry of Education of Victoria, 1990; Department of Employment, Education and Training, 1991; Milligan, Thompson and Ashenden, 1992). So, where totally new roles appear, the resultant difficulties for adolescents are greater. Because of considerable biological change during this time, many of these roles are sex related and seem to be more complex for girls than for boys.

As these roles change and develop, a given individual's group influence may also alter. Status systems are an inherent part of the adolescent peer relationship groupings, and are often built upon clearly sex distinct roles and expectations. When studying what he terms the "leading crowds" among school populations, Coleman (1961, pp. 34-57) found school size to be an interesting influential factor. When students in the smaller schools were asked, "What does it take to be in the leading crowd?" they objected to the idea of the question and denied that such a thing existed. "You don't see it because you are in it" (p.34). Coleman found that the most important aspects of the in-crowd acceptance in school groups were person-orientated. For girls, a good personality was of most importance, and this was followed by good looks, a mix of inherent attractiveness and clothes, adherence to fashion, etc. Included in good looks was also attractiveness to boys. Next in importance was having a good reputation. Although looks and reputation were important for boys, they were considerably less so than for girls. The most striking difference in the boys' list was sporting achievement. Although somewhat dated, this research suggests that not only do roles change (often on a sex-based basis), but peer group status will possibly also be affected by the adoption of certain roles. Although more recent research (Elliott & Feldman, 1990, Steinberg, 1996) has focussed upon the related area of adolescent issues, there has been little change to Coleman's general findings of three decades ago.

Although Coleman's research pre-dated gender-inclusive policies and strategies in schools and the contemporary feminist movement in society, it is worth considering because of the information about adolescent peer groups within the secondary school culture that it conveys. Student individual popularity was studied by Coleman at the same time, and responses were found to be similar to the 'belonging to the leading crowd ones'. Interestingly, belonging to the leading crowd itself was a critical factor, especially for girls. School-related

success was seen as only a slightly influencing factor for popularity, and considerably less so for popularity with the opposite sex (and lower for girls than boys for both). What these studies clearly demonstrate is the impact on individual adolescent priorities of peer expectations, both same sex expectations and opposite sex expectations. “The role of girls as objects of attention for boys is emphasised by the adolescent values in these (secondary *sic*) schools” (Coleman, 1961, p. 55). Slightly more recent than Coleman’s study is one by Simmons, Blyth, Van Cleave & Bush (1979) demonstrated sex differences in responses to school environment factors, and a link between girls’ self-esteem and dating behaviour during early adolescence, particularly for those with atypical (early/late) social developmental patterns. They found pubertal, dating, junior high school girls to be an “especially vulnerable group”. Berndt (1990) also found aspects of self-image to be related to peer group influences within this age group. In an earlier study, Berndt (1985) also found a correlation between friends’ contact and closeness and students’ ability to adjust to changes. Clearly central to any individual’s re-defining of his or her social role and status is their sex. This may also have a bearing on ability to cope with change in general at this time.

Can Coleman’s focal theory explain how adolescents cope with such changes? Coleman (1974, 1979, 1980) and Simmons and associates (1979) propose that change is easier to cope with if gradual adjustment is possible, rather than exposure to a great deal of different changes simultaneously. If adolescents are able to deal with one concern at a time, they are likely to cope. This has clear implications for school transition:

It follows from this line of reasoning that it should be very difficult for a child to make the transition into a large junior high school at the same time as he or she is experiencing other normative changes and/or other unscheduled non-normative changes (Simmons, Burgeson, Carlton-Ford & Blyth, 1987, p.1221).

It appears that the supportive nature of friendship groups during periods of change may also be important. Consideration of the impact of such cumulative change led Simmons and associates to conclude that, for personal development during this phase to reach its full potential:

... a balance or synthesis of opposites would seem optimal - a balance between tension arousal and tension reduction, between over and understimulation, between being challenged and being comfortable, between too many and too few demands, between growth and stability. ... Gradual rather than discontinuous change, changes that are spread out and dealt with in turn, rather than simultaneously, appear to be recommended (Simmons, Burgeson, Carlton-Ford & Blyth, 1987, p.1232).

Change can be both troubling and exciting and, because of the extent of change during adolescence, the balance between these two is important. Studies of student reaction to social change related to school transition in America suggest that often this balance is not right, resulting in a lowering of student self-esteem and consequent hindrance to person development (Hirsch & Rapkin, 1987). Simmons and associates in another study comparing transitions at different stages (kindergarten to grade 8 structure and kindergarten to grade 6), found that student responses were considerably different during transition, suggesting that such changes in self-esteem were in part contextually/environmentally dependent rather than purely developmental (Blyth, Simmons & Bush, 1978). A clear inference from this research is that the institutional/individual fit recommended by Lipsitz (1980) may not yet be achieved by school systems. Again evidence points to the influence of school change, structures and culture as important factors in an adolescent's life changes and ability to cope with such change.

2.2.1 Summary of Psychosocial Background

A review of research demonstrates that adolescence and the move from childhood into adolescence is a somewhat ill-defined and complex time in a person's life. Theorists tend to view this time as a series of ongoing developmental events or as a focussed major shift. Cotterell (1992, p.42) suggests that theories can be classified as cumulative change theories or discontinuity theories. Description of adolescence is further complicated by a moving away from developmental stages defined mainly by physical change towards more culturally defined changes. The boundaries here too have become blurred as the industrial society changes into the modern information/electronic society. The culture of the adult is increasingly available to children via electronic media in particular, with a consequence that at earlier ages they are defining themselves and their development in cultural terms. Puberty is also occurring at a younger age in a well-nourished modern society, and this results in physical change for many preceding remaining symbolic/cultural events originally timed to coincide with it (and possibly celebrate it) by some years. Our difficulty in understanding this life stage is compounded by the fact that it has rarely been a focal point for either psychosocial research and education research.

Adolescence is surrounded by many myths that impact our thinking, even to the point of influencing psychological and sociological traditions (Coleman, 1979, 1980). However, research does provide some indications of major factors influencing adolescents. It is a time when the balance between physical and cultural development becomes aligned in new ways, resulting in a self-perceived spread in rates of development, particularly for girls, and more particularly for those who are early or late physical developers. These changes trigger new socially defined roles: relationships with adults,

particularly parents and teachers, peer related social roles, both friendship related and status related: and an increased emphasis in gender related roles, particularly sexual relationships. These role changes may be modifications of previous ones or may constitute a complete role change or discontinuity. It is these latter changes that are the most difficult with which to deal for adolescents. Contextual and environmental factors also have an important influence as do major institutions, particularly schools. Within schools, structures, relationships and school cultures, generally, may all be influential. Such factors are important as individual factors, but the timing and nature of their convergence also has an effect.

Changes observed in adolescents, beyond the physical, include: dramatic shifts in role behaviour, particularly sex-related ones; changes in group structures; difficulty and frustration in dealing with new roles and changes in self-esteem. These will manifest themselves to a greater or lesser degree depending upon individuals and circumstances, but some general trends are discernible. General adjustment is easier to cope with than concentrated discontinuity; girls and boys experience different responses in similar circumstances; and incorrect balance in adjustment can lead to low self-esteem and hinder personal development; relationships generally are important including those with teachers; and the school is a focal point for much of this change for many individuals.

As mentioned in Chapter 1 (Section 1.2), this study investigated sex-based differences in school environments generally and classroom environments in particular Research Questions 1 & 3 (Section 1.6). This section has established that such identification is warranted as sex differences in developmental priorities outside and within school do exist during adolescence.

2.3 Educational Contexts and Influences: School and Classroom

Historically, most school systems have included a clear division between primary and secondary school, but this division is not always exactly the same. This section considers the structures within various school systems and school-based attempts to cater for students' needs as they enter early adolescence. To a large degree, the concept of school transition is tied to these structurally-imposed imperatives. Consequently, from their consideration, the description of transition as it applies to this study is clarified. Also key research is summarised, as well as findings and implications and documented school-based responses to research recommendations.

2.3.1 Systemic and Structural Issues

Most school systems have a two-stage structure defining the compulsory years, consisting of primary (or elementary) school followed by secondary (or high) school. These are sometimes separated by a third middle or junior secondary school stage. Primary-secondary transition is viewed as one key event as children transit into adolescence. Within the school system, the early adolescence stage (usually late primary/early secondary) of schooling, including middle school models, is usually described in essentially transitional terms, perhaps denying its integrity as Lipsitz (1980) suggests. Beyond this general devaluing of this phase of a student's life, Lipsitz argues that the term "transitional" also carries with it an expectation of problems and difficulties that will eventually pass leaving us "comfortable with nonintervention" (p. 22). Many a teacher has described their early adolescent students in such terms and added comments such as "... they become more human again

around year 10". School structures and their defining characteristics not only act as contexts for adolescent change, but they also affect the way in which this stage is anticipated and described, by both adolescents themselves and by influential adults.

Key differences between the primary and secondary stages of schooling relate to curriculum, cultural and environmental changes (inside and outside of the classroom), the role of the teacher and the consequent interactional relationship between teacher and student. During the transitional phase, the complex background of biological and psychosocial change related to the onset of adolescence is also taking place for many students. What is needed for healthy development during this time, Lipsitz (1980) argues, is a "fit ... between social institutions, especially schools, and the developmental needs of young adolescents" (p. 31).

Although the origins of a primary/secondary/tertiary school structure date back to Roman times, contemporary Australian school structures and curricula are largely inherited from those of Britain and United States. These structures predate most of the cultural and technological changes that impact on contemporary adolescents. There has been change over time, but the primary/secondary segmentation remains more or less intact. However, the curriculum has evolved considerably resulting in a secondary curriculum based upon:

Subject relevance;
Choice;
Integration; and
Flexible timetables (Musgrave, 1979, p. 95).

During this time, the primary school curriculum shifted from an intense "3Rs" approach to one that was more broad-based and student-centred. Here there

was an attempt to match the curriculum to the individual child, with the focus of teaching shifting from whole-class to one-on-one or small-group. Qualifications for primary teachers became similar in academic terms to those of secondary teachers (most having a full degree), although with broader educational, rather than a specific subject, focus. One key aspect in the training of primary teachers has become the ability to cope flexibly within the classroom (Department of Education & the Arts Tasmania, 1991). With greater academic training of teachers, controls on curriculum decision making were also eased, but final assessment requirements in secondary schools still ensured a degree of control (Musgrave, 1979). By the nineties, secondary schooling has become the accepted norm for the majority until year 12, and some moves have been made towards greater national uniformity (Australian Education Council, 1989). However, state differences in structures and curriculum still exist. These moves have resulted in greater curriculum continuity, at least in rhetoric (Australian Education Council, 1994), but major primary/secondary and state-related differences still exist. There is also no guarantee that continuity within curriculum documentation will result in continuity in reality, especially across the cultural divide between primary and secondary schools (Ferguson, 1991).

Although slightly different from state to state within Australia, the primary/secondary structure is common, as is the consequent period of transition. Such a change is also common across comparative Western educational systems (Australian Council for Educational Research, 1989). Typically, in Australia, the transition takes place when students are around 12 years of age, or around the onset of adolescence, with the students having completed six or seven years of primary school. Many schools view it as a critical phase for students and develop and implement strategies in an attempt to ease student concerns. However, it appears that these strategies are largely intuitively derived rather than based upon research (Cripps, 1994). Reflecting

upon early programs in the USA, Blyth, Simmons and Bush (1978, p. 151) concur and suggest that it is largely due to the fact that no relevant research base existed to inform such strategic decisions. One documented transition program (McGee, 1989) faltered because of a lack of clear research base to motivate and inform participants. Consequently they based much of their action upon stereotyped perceptions.

To cater specifically for early adolescence, some systems include a middle school phase, a concept that is at the centre of some contemporary school structure experimentation within Australia (eg. Cripps, 1994; Kite, 1996; Bassano, 1997; Henning, 1997). It is not easy to define the term “middle school”, as it is used to describe many, quite different, school structures. Of English middle school structures, Taylor and Garson (1982) commented that:

... to speak of 'the middle school' in the singular is somewhat misleading, for one fact which emerges clearly from the Keele survey is that the term middle school covers a wide diversity of institutions. The 8-12 middle has little in common with the 9-13 school, and even less with the 10-13 school (Campbell, 1982, p. 49).

In some instances, it is defined in conceptual terms rather than age-related structural ones. For example, middle school :

... provide a transition from the junior school atmosphere to a more formal one which will be encountered in the upper school, and from the class teacher system to the specialist teacher system (Hargreaves & Tickle, 1980, p. 139).

In the United States, the middle school structure has a long history with the first true junior high school being established in Ohio in 1909 (Power & Cotterell, 1981, p. 33). Such schools, with minor variations in student grade inclusions, are now common across the United States, where middle school is commonly described as:

... the school which stands, academically, between elementary and high school, is housed separately (ideally in a building specially designed for this purpose), and offers at least three years of schooling beginning with either grade five or six (Kohut, 1976, p. 5).

What research indicates is that, during early adolescence, whenever a school-to-school transition is involved, students encounter stress and difficulty (Power & Cotterell, 1981; Jensen, 1983; McGee, 1989). Knowles highlights that the middle school structures may not circumvent these problems, but merely create different variations of the same problems, such as a double transition (Sen, 1978). During school transition, typically students feel disoriented, unsure and often intimidated by older students and their more complex surroundings (Power & Cotterell, 1981; Huey, 1985). Intimidation can manifest itself in the form of physical and verbal bullying (Nicholson, 1990) or merely a lack of assurance about how to behave and “fit in” with the new-found adolescent culture (Ahola-Sideway, 1986). The adjustment time appears to be relatively short (Power & Cotterell, 1981), but some attitudinal changes may continue well into secondary school (Speering & Rennie, 1996; Ferguson & Speering, 1997). Even if effects are short term, this does not appear to lessen the immediate concern for those undergoing the process. It is also not known to what degree attitudes noted in later secondary years are influenced by this time of considerable stress and difficulty.

Much of the adjustment required of students appears to result from changing social/cultural aspects of the two stages of schooling (Ahola-Sideway, 1986, 1988; Grady, 1994). Ahola-Sideway (1988) used a conceptual basis from Ferdinand Tonnies to explore transition. She transposed Tonnies’ cultural/community concepts of “*gemeinschaft*” and “*gesellschaft*” into an educational setting :

According to Tonnies, life in a *gemeinschaft*, for example, is characterised by permanence and intimacy, little division of labour and a high degree of social integration that brings about a strong sense of community identity. Communal interests take precedence over individual interests. Individuals are pressed to conform through informal controls.

Life in *gessellschaft*, in contrast, is characterised by transience, impersonality, anonymity and a great division of labour and specialisation of function. People co-exist independently of each other... social controls and the enforcement of these controls tend to be formalised. ...(*and it caters to*) individual interests as opposed to communal interests (1988, p. 6; italics added).

Ahola-Sideway concluded that the cultural concepts of *gemeinschaft* and *gessellschaft*, as described above, were legitimate for the primary and secondary school cultural communities.

Changing relationships with teachers and attitudes to the curriculum are also evident across transition (Midgley, Eccles & Feldlaufer, 1991; Speering & Rennie, 1996). Midgley and associates studied mathematics classes during transition and reached the following conclusion:

Although some investigators have talked generally about the effects on early adolescents of a move to a larger, less personal school environment at this time of life, very little attention has been focused on the classroom environment (p. 132).

Their study also found that one of the key components impacting on classroom change was the development of a different style of teacher/student relationship in the secondary school. They concluded that this difference in teacher/student relationships was having a negative impact on students' attitudes to mathematics. Using experiences within mathematics as a data source, Midgley and associates (1991, p. 132) concluded that, during the transition to junior high school, many students experienced changes in the classroom environment that were in opposition to those that they would have preferred to experience.

Key aspects of environment change identified by Midgely relate to teacher/student relationships and student decision making. Structurally, there are differences between the school system in the United States and Australia and, as stated earlier, it was precisely these aspects of teacher communication style that differed between Dutch and American teachers (Brekelmans, Levy & Rodriguez, 1993, pp. 49-52). Consequently, it is uncertain if such links are applicable in schools outside of the United States, including Australian ones.

Research into the respective cultures of primary and secondary schools in Tasmania by Grady (1994) found that teachers held different images of primary schools compared with those of secondary schools, and that variance in school image was greater amongst secondary school teachers. Grady explored comparative school cultures through the use of metaphor. Members of school communities (students and teachers) were asked to match their school to a particular metaphorical image from a list provided (such as prison, orchestra). Grady concluded that the greater diversity of images of the secondary school:

... is probably due to secondary schools tending to be larger, more complex, more departmentalised and more loosely coupled generally than primary schools. It suggests that one needs to be careful, when contemplating the nature of secondary schools in particular, not to assume that there is necessarily a fairly common organisational culture, paradigm or mindset within the school which provides the rudder to keep all teachers moving in roughly the same direction (Grady, 1994, p. 131).

Grady concluded that it could well be this lack of a cohesive cultural/social image within secondary schools that contributes to the problems experienced by students adjusting to secondary school:

Further, secondary school students are likely to have teachers whose images of school vary more than is the case in primary school. ... It is not surprising if secondary students feel confused and alienated during the transition when they are confronted in the first period of the day by a teacher who sees the school distinctly as, say, a family, by another teacher in the second period who has an unmuddied image of the school as a

factory and by another in the third period (all of this before recess) who has a vague image of the school as an artist's palette and/or intellectual spaceship (Grady, 1994, p. 135).

Given that transition is an event that most, if not all, students experience during their school lives, not a large amount of research has focussed upon transition. The following section discusses some of the key studies that have had such a focus.

2.3.2 Key Research on Primary/Secondary Transition

The Hadow report in England (1926) summarised the belief underpinning the initial evolution of a two-phase school system:

There was, indeed, something like unanimity among our witnesses as to the desirability of treating the age of 11 to 12 as the beginning of a new phase of education, presenting distinctive problems of its own, and requiring a fresh departure in educational methods and organisation in order to solve them (Nisbet & Entwistle, 1969, p. 19).

Consistent with this view, the report recommended a “clean cut” in the educational system at the age of 11 plus years. However, by 1947, one Scottish report on schooling identified this abrupt transitional step as potentially problematic for students (Sen, 1978, p. 30). The Scottish Education Department report identified the following as changes having a major impact on students: forming new relationships; increased variety of teachers and consequent teaching methods; increased home tasks; and becoming the school “infants”. Other, later reports (Central Advisory Council for Education [Plowden], 1967; Department of Education & Science, Central Advisory Council for Education [Gittens], 1969) further detailed problematic aspects of transition and put forward recommendations, including the raising of the transition age and implementation of a middle school phase. Prompted by differences between the Scottish and English systems, the question of what was the most appropriate age for students to undergo

transition led Nisbet and Entwistle (1969) to undergo an extensive study of the process in the Scottish context. Their study, undertaken over a five-year period in Aberdeen, focussed upon children during the latter stages of primary school and the early stages of secondary school. Responding to one of the recommendations of the Plowden report, Nisbet and Entwistle provided the following caution:

There appears to be nothing in the research reported here to give unqualified support to a national reorganisation on middle school lines....The earlier change of school, at age 8, may affect young children more than transfer at 11 or 12 (pp. 98-9).

In respect to the existing transitional system, they concluded that: "At present the change is comparatively sudden and the approaches contrast sharply with the ideal of education as a continuous process" (p. 100).

Nisbet and Entwistle found the influencing factors during transition to be complex and that there are large differences in the physical, intellectual, social and emotional development of children during this time that make impossible generalisations as to appropriateness of age, etc. Some individual schools did respond to the research findings of Nisbet and Entwistle (1969) and experimented with some success with transitional programs, which attempted to lessen the suddenness of the transition, but their initiatives appeared to have little impact on the Scottish Education system as a whole.

Further notable British studies on transition were undertaken by Dutch and McCall (1974), Youngman (1978) and Stillman (1984). Each followed on from the earlier work of Nisbet and Entwistle. Dutch and McCall set up an experimental transitional department separate from the remainder of the secondary "Academy". They found initial parental reluctance to allow students to participate in what turned out to be a controversial change, and reported after the trial that findings again were complex with no clear cut

signals as to the best way to deal with transition. Youngman (1978) suggested that student responses to transition could be categorised into one of six types: academic, disenchanted and capable as high-ability types; and contented, disinterested and worried as three low-ability types. He found these types to most effectively cluster the students with common transition experiences, rather than through factors such as school of origin. From their sample, the high-ability academic group appeared to cope with the transition in the most positive manner, and the low-ability group coped least well.

Stillman's (1984) research considered the transitions into and out of a middle school for students aged 9-13 years. Again he found the linking stages to be complex:

Perhaps the most all-pervasive element that has arisen from the research is that the skills, techniques and language needed for teachers to establish educational continuity from school to school are ones which are not normally called upon within the school. The techniques of transfer liaison and linking seem considerably harder than one would think at first, and indeed a considerable number of teachers would appear to have already given up hope for linking to be achievable (p. 171).

In the United States, the middle school structure is prevalent. Examples of studies focusing upon middle school include Daniel and Klingele (1976), Blyth, Simmons and Bush (1978), Ward, Mergendoller and Tikunoff (1982), Hirsch and Rapkin (1987), Feldlhauser, Midgley and Eccles (1988), Midgley, Anderman & Hicks (1995), Pace (1995) and the National Science Foundation (1997). The middle school structure usually results in a need for a double-ended articulation so that students must cope with transitions both to and from middle school (Knowles in Cripps, 1994).

Researchers have found that students undergo great social and emotional change during early adolescence (see Section 2.2), as this often results in an

altered orientation to school and study (Simmons & Blyth, 1987; Eccles & Midgley, 1989). "Elementary and middle level schools are very different organisations with a different 'ethos' and this influences students' motivation and performance" (Midgley, Anderman & Hicks, 1995, p 111). Considerable ongoing research led Midgley, Eccles and Feldlaufer, (1991) to conclude that changing environmental factors were major influences on students, during transition into junior high school. Blyth and associates also found perceptions of environment to be potentially problematic during transition, along with self-image, participation in extra-curricular activities and opportunities for victimisation (Blyth, Simmons & Bush, 1978, p. 159). They also found problems specifically associated with school transition, and also that students undergoing transition at a younger age had a more negative response. Hirsch and Rapkin (1987) after their study, concluded that:

...the decline in perceived quality of school life is clear and dramatic...with the largest decline occurring around the junior high school transition...Moreover, quality of school life declined regardless of academic competence (p. 1241).

In Canada, an ethnographic case study of a single class group of students was conducted by Ahola-Sideway (1986, 1988). Her study considered in great detail the social and cultural experiences of one transiting class, with the experimenter participating as a student in the process. The class group was in the Catholic Education system and so experiences may not be the same as those within different settings. Ahola-Sideway concluded that: "If the present study is any indication, elementary and secondary school students do live in two very different worlds" (1986, p. 348). The secondary school in the study "was a culture that valued specialised services above integration and rootedness" (1988, p. 9). She identified specific "stress-points" for students, and these are very similar to those described in British and Australian studies. Ahola-Sideway found that student participation in the extra-curricular aspects

of school dropped considerably when students entered junior high school, in comparison to levels within the elementary school. She suggests that, “the basic makeup of the student sub-culture in high school fosters anonymity and apprehension among students who are not friends” (p. 350). Distinct shifts of priorities of teachers were detected in the later stages of primary (elementary) school and in the early stages of junior secondary school. These shifts, Ahola-Sideway concluded, resulted from “cultural pressures at work inside each school” (p. 351). In fact, she concluded that the changing social/cultural dimensions of the schools were the most important aspects in terms of impact upon the students. This dimension was greatly tied up with changing friendship links amongst students:

One comes to appreciate how friendships help sustain each school's culture and how friendships also affect and are affected by transition (Ahola-Sideway, 1986, p. 351).

...There is no question that schools are powerful socialising agencies for youngsters. This is particularly true for youngsters who face the transition from elementary school to high school (p. 356).

She noted that cultural “zones” centred around friendship groups within the secondary school became important:

The locker area became the fixed meeting place, a place where newcomers had to rekindle a feeling of rootedness that has been an integral part of the elementary experience (1988, p. 11).

Included within these changing social links are the differing relationships between student and teacher. Ahola-Sideway found that this was an issue of grater concern amongst students, than was the case in previous studies (Cotterell, 1979). Her observations regarding the key role of friendship links is consistent with work focussing upon secondary students by Epstein and Karweit (1983) who claimed that:

Friendship during this period of student development is a critical component of the student's search for a definition of self.

...Younger (*elementary school*) students select more friends, but older students are more selective in the friends they choose (p. 19).

Karweit and Hansell (1983) also found patterns of friendship selection during early adolescence to be influenced by both school organisational and personal developmental factors:

...A major, unanticipated influence of school organisation may be the disruption of strong dyadic interpersonal ties at a time when such relationships are most needed, especially for females (p. 130).

Schwartz, Merten and Bursik (1987) agree with Ahola-Sideway that the social changes experienced by students during transition are further emphasised by teachers. They found that students were repeatedly told by sixth grade teachers that they would not be able to act 'immaturely' once in junior high school, and found that the junior high school did:

... not conceive of the residual characteristics of childhood as being innocuous features of what is, in reality, a clearly incomplete transition to social maturity. Consequently, teachers talk as if childish behaviour is a purely negative phenomenon (p. 349).

Their study focused on junior secondary school and found that teachers "try to adjust their teaching styles to meet the needs of the performance-oriented culture of the secondary school and the developmental concerns of early adolescence" (p. 348). Their sample, although consisting of only one school, demonstrated that the "nonpersonal" style was normative in the junior secondary school. This teaching style typically accentuates the "role distance" between teacher and student, emphasises student responsibility and places the students' needs as students well above their needs as early adolescents (p. 355). One consequence of a nonpersonal style is that students tend to see teachers in "instructional terms" rather than in the personality ones that would have been prevalent in the primary school. Jarman (1990) suggested that teaching styles were considerably different in primary and secondary schools

and this had “a dominant influence on pupils’ behaviour and performance” (p. 22). Jarman describes the change as a “decrease in individualization of the learning process in favour of whole class teaching” resulting in a cohort of “easy riders” (p. 22) of up to 48% in some subjects (eg. in science).

Some of the most influential transition research was conducted by Cotterell and Power within Australia (Cotterell, 1979; Power & Cotterell, 1981). This research was completed in Queensland where transition occurs at the end of grade 7. Cotterell (1979) found that transition had a strong impact on students, with some variation in input according to sex and school size. The major issue for students was intimidation/aggression by older students. Classroom-based experiences were of the next greatest concern, specifically the difficulty of the work and the nature of the relationship between students and teachers. Power and Cotterell’s (1981) extensive research on primary-secondary transition focused upon students’ and teachers’ views of the transition, the learning environment and curriculum changes. A modified version of the Learning Environment Inventory (see Section 2.4) called the Learning Environment Questionnaire (*LEQ*) was used as the main environment measuring instrument.

The teachers in Power and Cotterell’s (1981) study viewed primary and secondary schools as very different and they found little collaboration between the two systems. Power and Cotterell agreed that the primary school is more child-centred and skills-based while the secondary school is more formal and subject centred, but they argued that this was due to societal expectations. Data collected in the study supported the notion that teachers of grade 7 (last year of primary school) and grade 8 (first year of secondary school) are different. Interestingly, the majority of primary teachers were older males, whilst the grade 8 teachers were young and female. This is not

typical of primary or secondary schools overall. Grade 8 teachers were found to be more humanistic, progressive and child-centred than their final-year primary counterparts. This was contrary to teachers' and students' expectations. However, the researchers did find that relationships between student and teacher were more important in the primary context (1981, pp. 5-8).

Comparisons of the learning environments revealed no difference between primary and secondary classrooms in terms of perceived difficulty, competitiveness or academic pressure. Pupils saw the key characteristics of primary classrooms (relative to secondary ones) as:

- a) having a richer physical environment;
 - b) being less disorganised;
 - c) being less cliquish;
 - d) displaying less favouritism;
 - e) being more goal directed;
 - f) being more cohesive;
 - g) demanding less speed; and
 - h) creating more opportunities for independent inquiry
- (Power & Cotterell, 1981, p. 15)

In terms of changing attitudes towards school during transition, the study found “large gains in student attitudes towards high school teachers *and* small initial gains in overall school satisfaction and attitude towards school followed by small losses” (p. 24; italics added).

Power and Cotterell concluded:

Transfer to high school, while productive of initial stress, leads eventually to higher levels of self confidence and satisfaction in the early part of the year, followed by dramatic declines in the perceived relevance of the work being done. .. For most pupils in the transition period, the optimal environment is one which is involving, structured and unpressured, the physical design of the classroom, the commitment and approach of the teacher, and the peer group situation are critical determinants of student adaptation and growth (p. 30).

A later study by Cotterell (1982) focused specifically on the first weeks of secondary school. He found that students exhibited:

... what Hirschowitz (1976) has called 'the oscillating quality' of psychological reorganisation wherein the student searches for a compromise between defence and mastery as he/she copes with transition situations (p. 300).

Other research within Australia that has focused upon transition includes Atkinson, Trebilco, Grierson and Atkinson (1978), Evans (1979), Woodhouse (1983), and Speering and Rennie (1996). Atkinson and associates (1978) summarise the optimistic view of transition-related developments:

...In recent years there have been tremendous developments in efforts toward making education in the schools a continuous process through primary and secondary levels. Although it remains the focus in many cases, the actual process of transfer between the two levels of schooling is increasingly being seen as just a component of this total view of schooling. By serving as a focus, however, the issue of transition is playing a vital role in bringing together in co-operative endeavour two groups of teachers who should never have become separated (p. 26).

In Australia at least, the curriculum is increasingly being developed as a true continuum from Kingergarten to Grade 12, but no research exists to support the optimistic view that this will in any way reduce the hiatus that has traditionally occurred at the primary/secondary boundary. In fact, some evidence suggests that changes in curriculum documentation alone will have minimal impact on what is experienced by students (Jarman, 1990; Ferguson, 1991).

Recently the years of early adolescence have received attention within the Australian educational context with various discussion papers focussing upon the middle years of schooling (Australian Schools Council, 1992; Department of Education for South Australia, 1992a; 1992b). Even now, the motivation

for much of the focus on these years is the “gap” that is perceived to exist between primary and secondary schools. Contemporary surveys support this belief:

There is some evidence from this survey that primary and secondary personnel live in different worlds, with their own separate (and powerful) cultures....Yet the two sectors are dealing with essentially the same students at or around the transition area of grade 7 or 8. ...While the responses showed that many schools see that transition from primary to secondary is an important process, the views about the process as a whole varied considerably (Department of Education for South Australia, 1992a, p. 6 & p. 68).

Limitations of many of the past studies of transition are summarised below:

1. Few studies incorporate comparative data of transition systems and non-transition systems within a given student age group. Consequently, it is extremely difficult to differentiate between effects directly linked to school transition influences and those that are otherwise developmental in nature.
2. Because my studies are small in scale, findings are limited in terms of generalisations that can be made.
3. Few of the studies are truly longitudinal in that data are collected from the same students at each transition stage. This again introduces the possibility of unseen outside developmental effects and, more importantly, of inherent sample population discrepancies.

The transition 'problem' remains very much a contentious issue for both schools and research. Clearly research has established that it can be a 'discontinuity' event in the lives of children, and one of considerable influence and potential stress. General social adjustment problems have been identified including: feelings of alienation and disorientation; problems of

intimidation, from teasing to physical bullying; and varied manifestations of concerns about “fitting in”. Students view primary and secondary schools as substantially different in many ways, much of the difficulty for students related to coping with, and adjusting to, these differences. Schools are attempting to address these problems and assist students, but little research-based documentation exists to allow judgement on these programs.

2.3.3 Strategies Employed/Recommended to Ease Transition Problems

Many articles and reports within Australia and overseas (eg. New South Wales Ministry of Education [Wyndham], 1957; Central Advisory Council for Education [Plowden], 1967; Education Department of Western Australia [Dettman], 1969; Department of Education for South Australia [Karmel], 1971; Education Department of Tasmania [Scott], 1977; Pollard, 1978; Power & Cotterell, 1981; South Australian Education Department, 1992a; Australian Schools Council, 1992; National Science Foundation, 1997) refer to some form of “middle school” or “transition” problem. Many offer recommendations for schools, but little appears to be adopted by schools or, if transition programs are developed, they are rarely documented. A few case studies report trials of transition strategies within schools (McGee, 1989; Evans, 1979; Kite, 1996; Bassano, 1997; Henning, 1997), but in the main they are unpublished research reports by undergraduate and postgraduate students (Morgan, 1986; Wilson, 1990; Cripps, 1994) or working documents kept ‘within-school’ (eg. Brooks Transition Cluster, 1990).

Major (1983) suggests that the basis of any transition program is to develop a concept of “bridge” rather than “gulf” between the primary and secondary systems and that this could be done in a variety of ways. Cotterell (1982)

reports that, although clearly anticipatory worries are of concern, there are coping issues which must fall within the domain of the secondary school and transitional programs “must be designed in stages...(and they should) move progressively from orientation ‘tours’ to curriculum ‘sessions’ and finally to discussion groups” (p. 301).

Newett (1992) conducted a review of documentation from Canada, Norway, Switzerland, United Kingdom and the United States to find out what transition strategies were being recommended or employed within these countries. She classified these strategies into four groups:

1. strategies which involve networking between clusters of schools to ensure continuity across the Primary-Secondary divide;
2. programs which rely on a ‘buddy system’, or peer-support process aimed at helping new students find their way around the school, to meet and learn the names of teachers, to learn school rules and so on;
3. reforms which are more holistic in nature which involve the establishment of transition departments or sub-schools, the formation of schools with a shared campus and administration from kindergarten to year 10 or 12, or the postponement of transition by the establishment of intermediate or junior high schools; and
4. a miscellaneous group of strategies which attempt to develop in students better coping skills, provide specially trained teachers, or facilitate the exchange of information concerning students’ feeder and receiver schools (Grady, 1993, p. 47).

Morgan (1986, p. 24) suggests several purposes of middle schools:

1. to assist in learning (Plowden, 1967; Gannon & Whalley, 1975; Blyth in Hargreaves & Tickle, 1980; Kohut, 1976; McDade, 1982);
2. to assist in the pastoral care of the students (Plowden, 1967; Blyth in Hargreaves & Tickle, 1980; McDade, 1982);

3. to assist in the transition of students from primary to secondary school (Plowden, 1967; Blyth, Mezenn & Tickle in Hargreaves & Tickle, 1980; McDade, 1982);
4. to provide facilities specially suited to the needs of students (Plowden, 1967; Gannon & Whalley, 1975; McDade, 1982); and
5. to provide administrative convenience (Clarke, in Gannon & Whalley, 1975; Hargreaves & Tickle, 1980; Blyth in Hargreaves & Tickle, 1980).

A review of the local situation within Tasmania led Cripps (1994) to conclude that:

...transition is an issue within schools [but *sic*] no documentation exists showing schools actually implementing whole transition programs or developing initiatives beyond those of a curriculum nature. This leaves unanswered, and largely unanswerable, the question: What are schools actually doing? (p. 16).

Anecdotal evidence suggests that many schools are experimenting with various strategies to ease the transition for students, but in a largely uninformed and ad hoc manner.

One recent school trial, based upon ideas from USA middle school programs, concluded that a more collaborate approach and an integrated curriculum better meet the needs of early adolescence (Kite, 1996, p. 41). Another school trial (Henning, 1997, pp. 14-15), based upon some preliminary within-school research, agreed with this conclusion and added a team teaching component so that students would feel that at least some teachers were there specifically to address their concerns. A third school trial (Bassano, 1997, p. 11) focussed more upon the transition discontinuity itself and concluded that a more 'seamless' education program was optimal. Key aspects of this trial were again a more integrated curriculum and the

development of a secure “owned” environment for beginning secondary students.

Research has identified some factors which impact on students during transition and points to other factors which possibly have an influence. However schools are still uncertain about how to deal with these. Such factors include: structural characteristics and school size; student sex; general cultural and social changes; the curriculum; environmental changes; and relationship changes with peers and with teachers as well as the role of teachers. Research has clearly established the influence of some of these factors, whereas with others the degree and nature of the influence has yet to be determined. This conclusion is supported by school trials such as those reported above. The following sections explore what research has revealed about each of these factors within transitional contexts.

2.3.4 School Size and Transition

Much of the recent research focusing upon transition has been in the form of case studies with small student populations (eg. Speering & Rennie, 1996). Use of such small samples cannot clearly establish possible differences arising when students transit between schools of varying sizes and types. As early as 1964, Barker and Gump established that many of the social factors that interplay within a school context are related to school size. This research established that Barker’s hypothesis regarding “undermanning” in specific behaviour settings (Moos, 1976, pp. 214-233) is equally relevant in high school settings. This hypothesis suggests that, in smaller, “undermanned” behaviour settings, participants carry out a much greater number of roles and have greater involvement with their social environment. Within the school context, this results in greater extracurricular involvement. The expectation

that students will fulfil more responsible positions in the smaller settings led to greater pressures, but also greater social cohesion and individual satisfaction. Invariably the transition process results in students moving from smaller to larger behaviour settings. Barker and Gump's findings imply that one consequence is considerable social adjustment and perhaps even a degree of alienation for some students during a setting change such as transition.

Power and Cotterell (1981) found that students transiting from smaller primary schools into high school carried different expectations from those coming from larger ones. Specifically, students from smaller schools were less concerned about encounters with older students and generally had a more optimistic view of the forthcoming event prior to it occurring (p. 8). Campbell, Cotterell, Robinson and Sadler (1981) established that school size did have an effect on student expectations, and that, in part, it would be attributable to a greater cohesiveness within the students' existing environment. In relation to the effect of school size on students, they concluded that smaller schools developed a greater 'person-orientation' in students (p. 228). Blyth, Simmons and Bush (1978) also suggest that school size could well be a factor in different school groups' reactions during transition (p. 159), as could the school's style of organisation.

A more recent study by Cotterell (1992) specifically considers the issue of school size and transition. This research tracked students along three distinct transition paths: from small to large schools; from medium to medium size schools; and from large to large schools. He found less anxiety and more enjoyment amongst those moving from a large primary school compared to those moving from a small one:

...The adolescents who perceived the greatest decline in environmental quality (with increased demandingness and a reduced level of supportiveness) were those who made the transition from small to large schools, whereas those adolescents from large primary schools generally perceived least change in the classroom environment (p. 40).

Cotterell claims that his study was preliminary, that further work is needed on the issue, and that his findings support an inference that “changes in school size across transition *may accentuate the degree of discontinuity* between different kinds of schooling” (p. 42).

One variation not included previously in experimental designs are schools of similar populations, but varying internal structures and/or cultures. The South Australian *Junior Secondary Review* (1992a) found that schools with an ‘reception’ to grade 10 structure (primary and secondary merely being different sectors of the same school) produced different views regarding transition than other systems. “It’s not a problem. The students know the teachers, the school, the system and the other students” (p. 69).

One could also hypothesise from the work by Grady (1993) that students transferring from primary schools with distinctly different school images/cultures into the same high school may have different experiences, problems and perceptions.

Although experiences and responses may vary from individual to individual and transitional context to context, research into adolescent development generally would suggest that similar trends may exist within, but differ for, male and female populations. The next section explores relevant research in the area of student sex-based differences.

2.3.5 Sex Differences and Transition

Early studies (Nisbet & Entwistle, 1969; Dutch & McCall, 1974) suggest that the transition from primary to secondary school affects boys and girls slightly differently, especially when linked to other personality factors. Midgley and associates found that sex-based differences in attitudes to mathematics for a sample across grades 5-12 varied less than comparisons made across a given grade (Midgley, Eccles & Feldlaufer, 1991). Cotterell found school size to be a more influential factor in students' transition perceptions than sex (Cotterell, 1979).

From much of the research, the transition appears to affect boys and girls similarly but with some difference in degree. Cotterell (1979) reports that, relative to girls, boys referred more to the school's facilities and were slightly more negative about older students, with apprehensiveness related to bullying mentioned by one third of the boys but only one quarter of the girls. However, he found that boys and girls shared most of the constructs used to describe transitional aspects. Power and Cotterell (1981) also found some general sex differences in student behaviour (eg. participation in lunchtime sport) and also some sex differences in reactions to the changes in learning environments and the curriculum:

For girls, going to a conventional high school generated anxiety but led to high work satisfaction; for boys, the shift from open-plan primary to a self-contained secondary classroom stunted the growth in confidence which had taken place in grade 7. ...Male students were more satisfied with science and more confident (less anxious) than female students throughout the transition period, while female students displayed high levels of general satisfaction, work satisfaction and more positive attitudes towards school, English, social studies and their teachers (both primary and secondary) (p. 26).

However, other studies suggest a far more complex interaction of factors and give rise to apparently contradictory conclusions. Some research suggests that transition is a more difficult phase for boys (Fenzel, 1989), whilst other studies suggest that girls experience more difficulty, particularly in terms of self-esteem (Blyth, Simmons & Bush, 1978). When Simmons and associates researched the impact of cumulative factors affecting students at that age, they found the following pattern:

Girls suffer losses in self-esteem when the number of life changes they are exposed to increases. Both males and females exhibit declines in GPA (*grade point average*) and extracurricular participation as they encounter more of these transitions. Furthermore, for females, the effect is curvilinear, indicating that, after some time, each subsequent life change makes the overall coping process more difficult. ...Evidence appears to be emerging that boys react more negatively to stresses in childhood, but that this pattern reverses in adolescence... Girls may react more unfavourably to the disruption of peer networks that occurs with school transition, as well as the uncertain effects that pubertal changes have on physical appearance (Simmons, Burgeson, Carlton-Ford & Blyth, 1987, p. 1230; italics added).

These findings are supported by Hirsch and Rapkin (1987) who found that “girls in the present study (*on transition*) reported a significantly greater decline than boys in commitment to school” (p. 1241, italics added).

Ahola-Sideway’s (1986) ethnographic study concluded that changes in social groupings reinforced the developing focus on other adolescent changes, especially for girls. Within the primary school, the basic social unit was the class, whether within the classroom or outside. Friendship groups within this tended invariably to be same-sex. This social unit and other cultural influences (eg. relationships with adults) within the school suppressed student exploration of individuality, including aspects such as sexuality. By contrast, within the high school, friendship groups became the basic social

unit, and such friendship groups rapidly changed to include both sexes. One effect of this changing social structure was the role of the teacher within the student social structure. With the class as the social unit, the teacher had a central role but, once that structure was replaced by smaller friendship groups, teachers became outsiders to the social framework of students.

The entire secondary school culture invites students to explore their developing adolescent sexuality. In Ahola-Sideway's study, students were anticipating this as some of the girls arrived on day one of secondary school looking differently from the way they had looked at the end of the previous year. This change in appearance consisted of attention to clothing, hair styling and so on that displayed a fashion consciousness and sexual identity undertones. This rapidly became the norm, especially for the girls, and became a major topic and focus within social groups. Ahola-Sideway (1988) suggested that this change may be in part developmental, but was also related to school culture and social opportunity:

Grade 6 school students seemed ready and willing to freely explore the world of sexuality ... but their school hindered them from exploring this world openly in their terms (p. 23).

Lawrenz (1987) found that, for science classes at least, perceptions of the classroom environment showed an increased sex differential as the students grew older and, once in secondary school, this perception also varied with the sex of the teacher. In fact, both male and female students perceived the classroom environment to be more positive when the teacher was of opposite gender to themselves. This led Lawrenz to hypothesise that "these differences may be related to increasing cultural pressure to exhibit gender specific behavior and may also be related to changes in girls' interest in science" (p. 695).

2.3.6 The Curriculum During Transition

Although verifying a link between student success post-transition and general background characteristics, Nisbet and Entwistle (1969) did not include students' responses to the curriculum in their study. The first to consider these aspects in any detail were Power and Cotterell (1981), who concluded that "the school curriculum turned out in the end to be one of the major factors in determining the shape of the transition problem" (p. 36). Confusion and lack of awareness of requirements by teachers often resulted in unnecessary overlap and mismatch between the systems and resultant confusion and stress on the part of the students. This problem of discontinuity was also identified by Stillman (1984) as a major transition concern. In regard to specific subjects, Power and Cotterell (1981) found:

1. moderate gains in student confidence and attitude towards English;
2. large initial gains in clarity and ease of schoolwork and moderate gains in perceived usefulness, followed by large losses in the latter half of grade 8;
3. moderate declines in student attitudes towards mathematics; and
4. large declines in student attitudes towards social studies (p. 24).

Power and Cotterell found strong curriculum discontinuities in some areas (mathematics, English and social studies) and that, with mathematics in particular, grade 8 was often a "repetition of work done in primary school, but couched in unfamiliar, abstract language, and at times even using different algorithms" (p. 18). Students anticipated secondary school with clear, positive expectations which became "increasingly negative when they were not met" (p. 19). The useful or active classes (manual arts, home economics, art, music, physical education and science) were particularly welcomed.

Midgley, Eccles and Feldlaufer (1989, 1991) have considered student responses to mathematics in considerable detail and also found students becoming increasingly pessimistic towards that subject during transition. In part, they found that internal structures within the classroom environment and changing teacher-student relationships were potential influencing factors. They concluded that a “developmental mismatch between early adolescents and the classrooms that are provided for them” (1991, p. 11) exists in junior secondary mathematics resulting in “less positive attitudes toward academic pursuits” (p. 29).

Power and Cotterell (1981) found in their transition study that students’ attitudes to science were consistently positive throughout. In a follow-up study, Power (1981) considered in detail students’ changing attitudes to science during transition. This study led him to the conclusion that “there are no major problems confronting students in transition so far as science is concerned” (p. 37). He did find, however, that the attitude of boys was consistently more positive than that of girls, and that, to some degree, results varied according to the nature of the classroom environment change. The research found that the more involving the primary classroom was, the less favourable was the subsequent attitude to science in secondary school. This research suggests that, in such longitudinal studies, classroom perceptions are comparative (matching earlier environments with later ones) in the minds of students even if not consciously so (ie. not intended). This is particularly interesting given the considerable change in primary classrooms (in Tasmania at least) over the last decade and a half towards a more “involving” and less structured classroom environment (Ferguson, 1989, p. 17).

One subsequent Australian study (Baird, Gunstone, Penna, Fensham, & White, 1990) has shown a *rapid decline* in student interest in science during

transition from primary to secondary school. This study found that "... students' interest in, application to, and enjoyment of science diminished sharply after year 7" (p. 13). It appears that, despite the earlier findings of Power, science may not be so atypical in terms of the prevalence of transition problems.

Lawrenz (1987) found that, as students grew older (comparison between grades 4, 7 and high school), the sex of the teacher affected student perceptions of science classes increasingly. In particular, high school classes taught by females were perceived to be more difficult and less cohesive than those taught by males, especially as perceived by female students (p. 694). She concluded that this might have a negative influence on girls' attitudes to science as they pass through adolescence. Certainly students do not perceive their secondary science class environments as 'ideal' (Fisher & Fraser, 1983; Hofstein & Lazarowitz, 1986; Speering & Rennie, 1996), but it is not clear whether this is true of most learning environments for students at this age, or if science, and perhaps mathematics, are particularly problematic.

Perhaps the most dramatic change across the primary-secondary transition is the move into highly-specialised science laboratory classrooms from the generalist primary classrooms and the consequent change in teacher/student interactions. Jarman (1990) reports that, without prompting, a group of first year secondary students could suggest 20 dissimilarities between the two environments, but very few similarities between their primary and secondary science experiences. Virtually every aspect of their science was seen as different with new approaches to reporting and graphics; practical work was approached differently, with different equipment; patterns of participation were different; and the degree of teacher direction and intervention was different. Similarities were restricted to curriculum topics. Students were also

keenly aware of the difference between the cross-curricular primary approach and the separate-subject approach of the secondary school (pp. 21-22). So different were the experiences that many students failed to see any connection between their primary science experiences and their secondary science ones (p. 25).

Certainly the laboratory environment has an effect upon students, but the full nature of that effect is not clear (Hofstein & Lunetta, 1982). What is known is that boys and girls react to laboratory activities differently (Kelly, 1987; Tobin & Garnett, 1987). One researcher focussing on the highly specialised nature of the science environment (Carlsen, 1990) suggests that this specialisation, at least when teaching practical activities, produces differences in teacher/student interactions compared with other secondary school learning environments. Tobin (1990) suggests that, in such classes, the teacher emphasis is on classroom management to a greater degree than normal and coping with disruptive behaviour is seen as extremely difficult in this environment. One case study (Lorsbach, 1990) found that a possible result of these factors in a first-year secondary classroom is an interpretation of the performance-oriented culture of the secondary school as “doing the work”, with achievement being related to “completion of tasks” rather than learning. This can work to the detriment of student interest and participation, even for capable students. Tobin and Capie (1982) found that further consequences of management and work completion pressures in middle school science classes were a reduction in the amount of time for which students overtly engaged in activities, and a substantial amount of time being devoted to covert activities (eg. watching and listening) (p. 408).

2.3.7 Summary of Transition Research

Research dating back several decades clearly establishes that school transition creates a discontinuity that causes problems for many students. This problem, highlighted by most of transition research reported in this section, was described in multi-faceted terms and was seen to affect individuals differently. Some research has identified many of the influencing factors, but their full role is still obscure. Factors identified include: general social and cultural change; environmental change, within and without the classroom; peer and adult relationships; student age and stage of physical development; student sex; and school size. Some of the research identifying these factors produced only preliminary results, while other studies were small scale and involved specific settings. Many of the factors identified are in turn influenced by school organisational and structural situations. Teaching styles and teacher/student relationships appear to be key factors, but the complete nature of these influences is yet to be determined. Further research is needed to clarify the importance of many of these influences during (and following) transition to allow for greater confidence in generalisations.

Many school-based attempts have been made to ease transition, but again outcomes are inconclusive and many such projects are informed by teacher intuition and anecdote rather than by research findings, and often they are poorly documented if at all.

Changes in students' attitudes to the curriculum have been documented by researchers of transition, but sometimes this has resulted in some ambiguity. In science, for example, change across transition has been described as slight by some researchers, but also as showing significant decline by another. Again further research is needed to clarify and update this earlier research.

Here again the nature of the environment and the teacher/student relationship have been identified as probable influences acting to change students' attitudes, but many questions remain unanswered in regard to their exact role.

This current study focuses upon changes in students' perceptions of learning environment and teacher interpersonal style across transition and identifies some of the factors influencing these changes.

The next section looks in detail at learning environment theory and research and their role in general classroom research as well as transition contexts.

2.4 Learning Environments

This study was centred largely upon the conceptual domain of learning environments. As students transit from primary to secondary school, the nature of the environments which they experience and work within changes considerably. Students must come to terms with a different total school environment, moving from one that was defined by the nature and needs of young children into an adolescent one. A second key focus of the study was to identify aspects of the classroom learning environment and identify if, and how, students' perceptions of these changed as they moved from the primary context into the secondary one. Finally, the study intended to determine the degree to which these environments met the self-perceived needs of the students as determined by their ideals.

As changes in students' perceptions of learning environment during the transition from primary-to-secondary school is central to the current study, the final two sections of this literature review deal with various aspects of learning environments. Section 2.4 examines the general historical and

conceptual background of this branch of study as well as the classroom 'climate' scales measured by various instruments, including the *My Class Inventory (MCI)* as utilised within this particular research. Finally, research findings, especially in relation to student learning environment perceptions and learning outcomes, are highlighted and discussed.

Section 2.5 deals with the development of measures of teacher interpersonal style within the learning environments, specifically the *Questionnaire on Teacher Interaction (QTI)*, as utilised within this study.

2.4.1 Historical Background

Since the era of ancient Greece, and probably even earlier, human 'well being' has been linked to the environment, both natural and man made, within which we function. As far back as 1792, Dr Philippe Pinel had documented observations that behaviour of insane inmates was to some degree related to available space (Moos, 1974a, p. 3). However, it was not until relatively recent times that such a link has been clearly established through evidence, beyond the tracing of purely physical interactions such as disease transmission. One of the earliest structured studies to link human behaviour to environmental influence was conducted by Hartshorne and May in 1928. Although somewhat inconclusive, this study suggested that honesty in humans was to some degree contextually dependent and implied that personality factors may be influenced by external environmental settings.

Lewin (1935) expressed this link between behaviour, the environment and the individual in more precise, theoretical terms when he proposed the relationship $B = f(P, E)$. B represents human behaviour such as actions, emotions and expressions. His equation suggests that behaviour is a function

of two determinants, the first (represented *P*) is the person, and the second (*E*) is the person's environment. His postulation was that human behaviour is a function of the total field that exists at the time when the behaviour is manifest. Prior to the late twentieth century, psychology had inclined towards explaining human behaviour in purely 'internal' terms, following the Freudian tradition. Lewin's proposal helped to initiate an alternate way of considering human behaviour by adding an environmental dimension.

In 1938, Henry Murray proposed a model that attempted to describe the nature of the human personality-environment function as suggested by Lewin. Murray suggested that the two dimensions interacting to produce a certain behaviour could be described in terms of human need (the internal, personality factor) and "environmental press" (the external, environmental factor). Murray suggested that the external factor may be divided in terms of positive and negative aspects in reference to needs (ie. potential satisfaction and dissatisfaction). The needs-press model gave rise to the notion of "social climate" and consequent studies attempted to identify and define possible dimensions of the environmental "press".

During the 1950s and 1960s, many studies began to establish social-behavioural links through experimental evidence, some of these being based directly upon Murray's "needs-press" model. Studies were conducted in various environmental settings, particularly in health (mainly mental health), crime and rehabilitation, and educational milieus (Moos, 1976, pp. 285-314). Moos (1976, pp. 5-27) suggested that studies of human-environment interaction to this point had evolved from the following quite different traditions each with a separate theoretical basis: the studies of civilisations; ecology; post-Darwinian evolution theory; health and disease; organisational systems; psychology and personality theory; and architectural studies. Moos

suggested that the environment-behaviour link could only be understood if studied in some holistic way that was a synthesis of these different traditions. One such synthesis was called a 'social-ecological' approach by Moos (1976, p. 28). This seminal work by Moos provided an inclusive theoretical basis for later behaviour-environment research.

Pace and Stern (1958) employed Murray's needs-press model in studies within college settings. This work resulted in the development of the *College Characteristics Index (CCI)* which was an extension of Murray's needs taxonomy used as an environmental inventory within a college setting. Work with the *CCI* clearly established the importance of the social climate within higher education institutions and began to define possible "needs" parameters within educational settings. It also demonstrated a research approach compatible with the Lewin/Murray theory. Other environment scales for use at the college level were later developed by Hearn and Moos (Moos, 1976, p. 291).

Earlier research which considered the behaviour-environment interface had largely been what Rosenshine (1970) described as "low inference". Low inference measures are those that identify and record specific environmental events, such as verbal interactions in a classroom. Alternately a "high inference" measure is one that tries to measure underlying meaning to specific, observable classroom events (eg, teacher helpfulness). As well as supporting Murray's concept of environmental press, these studies also supported earlier low inference studies such as Holland's model of environment as a means of measuring social climate (Moos, 1976, p. 292). Holland (1966) developed a *Vocational Preference Inventory (VPI)* and established a correlation between occupations and vocational choice, including choices of vocationally-oriented college courses. Holland proposed

also that high congruence between person and environment resulted in higher individual satisfaction. Some studies of higher education environments also indicated slight sex differences in responses (Holland, 1966; Moos & Gerst, 1972).

Work by Roger Barker and associates (Moos, 1976, pp. 213-225) during this time helped to define the nature of behaviour settings, their attributes and links with participant behaviours. Barker's taxonomy of settings identified primary school and high school as examples of clearly differentiated behaviour settings. One study undertaken in junior secondary school was by Withall (Moos, 1976, p. 325) as early as 1949. He developed a social *Emotional Climate Index* that focussed upon teachers' communication styles and consequent classroom climates. Withall concluded that the differences among climates created by different teachers were substantial, and that students had to cope with different psychological climates as they moved from class to class within the junior secondary school.

The background to the contemporary era of social environment studies was completed in the main by the seminal works of Moos and colleagues (eg. Moos, 1974a, 1974b, 1976, 1979) and Walberg (eg. 1969, 1976, 1986) and extended and refined by Fraser (Fraser & Walberg, 1981; Fraser 1980, 1982, 1986a, 1993, 1994), often in collaboration with Fisher (eg. Fraser & Fisher, 1982a, 1982b, 1986) and others (eg. Fraser, Giddings & McRobbie, 1995; Fraser, Fisher & McRobbie, 1996; Tobin & Fraser, 1998). Moos and Walberg, along with their respective associates, provided a clear conceptual framework for social-psychological research within a wide range of environment settings. Their work also identified and described various domains within these settings and provided instruments for psycho-sociological investigations.

Various alternative approaches to behaviour-environment research clearly emerged with each being based upon slightly different theoretical assumptions as to the nature of the behaviour-environment relationship, and/or methods of determining and describing it. One approach was the holistic approach as defined by Moos (1974a, 1974b, 1976, 1979) incorporating the notion of ecologically determined environments. Another was the behaviour settings conceptual approach after the work of Barker (in Moos, 1976; Barker & Gump, 1964 - see Section 2.3.4). One further approach rested upon the assumption that the members of an environment determine its nature (eg. Holland's [1966] Vocational Environment Theory). Each of these conceptual beginnings can give rise to a variety of research methods dependent upon the acceptance of low or high inference methods and the specific view taken of Murray's concept of press (see the next section) along with the role of the researcher.

Of particular relevance to this study is the approach taken by Walberg and Anderson in developing, trialing and validating the *Learning Environment Inventory (LEI)* (Anderson & Walberg, 1974; Fraser, Anderson & Walberg, 1982) and its later modification into the *My Class Inventory (MCI)* for the primary school level (Fisher & Fraser, 1981; Fraser, Anderson & Walberg, 1982). Both the LEI and the modified version, the MCI, were based upon a psychosocial definition of the learning environment; how this was developed is considered in the next section. As the MCI was employed within the current study, it is considered in further detail in Section 2.4.4.

2.4.2 Defining and Measuring Psychosocial Dimensions

Moos (1976) conceptualised the synthesised approach to studying the action of environment upon behaviour as a "social ecological" one. Within this

context, the basic unit is the individual, coping largely involves adapting to the environment, rather than controlling it, and it is a synthesis of both the physical and social environments (p. 28). He saw these “psychosocial” environments as consisting of three broad aspects:

Relationship dimensions assess the extent to which people are involved in the setting, and the extent to which they express themselves freely and openly.

Personal growth, or goal orientation, dimensions measure the basic goals of the setting, that is, the areas in which personal development and self-enhancement tend to occur.

System maintenance and change dimensions measure the extent to which the environment is orderly and clear in its expectations, maintains control, and responds to change (Moos, 1979, pp. 14-15).

Moos (1976) proposed that these three dimensions could be used to “describe vastly different social environments” (p. 330), even though the different environments have different impacts upon individual participants (p. 335). Among examples of such environments, Moos includes junior high and high school classrooms. Table 2.1 classifies various aspects of high school environment according to Moos’ dimensions.

Studies conducted by Moos using this conceptual framework suggested strong links between these dimensions and student satisfaction, mood and performance (pp. 337-339). This research included consideration of “real”, “ideal” and “expected” environments. In developing relevant items to measure these dimensions, Murray’s notion of environmental press guided selection. Items covering teacher behaviour and teacher-student and student-student interaction were included (Moos, 1979, pp. 138-139).

Table 2.1 **Classification of Dimensions of High School Environment According to Moos' Model**
(Based on Moos, 1976, pp. 332-333)

Relationship Dimensions	Personal Development Dimensions	System Maintenance and System Change Dimensions
Involvement	Task Orientation	Order & Organisation
Affiliation	Competition	Rule Clarity
Teacher Support		Teacher Control
		Innovation

Murray's notion of assessment of environmental press was described as being in two categories: *alpha press* or assessment by a detached observer; and *beta press* or assessment by a participant. One of Moos' 'guiding principles' in this research was as follows:

Students' perceptions provide an important perspective on educational settings. Information about living groups and classrooms can be obtained by outside observers, who may be more 'objective', but it is difficult for such people to know what the setting is like without actually participating in it. Students conversely have time to form accurate, durable impressions of an educational setting's social milieu (Moos, 1979, p. 21).

Fraser (1986a, p. 10) reports that Murray's categories of press have been extended by Stern, Stein and Bloom (1956) to include *private* beta press (the idiosyncratic view that an individual has of the environment) and *consensual* beta press (the shared, group view). This raises the dilemma of whether the individual or the group mean is the more appropriate unit for analysis. The potential for a contradiction arising between unit of analysis (individual or group) and the conceptual basis of particular learning environment dimensions exists. The consensual beta press alternative differs from Moos'

concept (following Lewin and Murray) of ‘the individual coping with and adapting to the environment’ as the only unit of focus (although it is not clear if this forms the basis of *analysis* by Moos).

Moos’ suggestion of a link between environment and student satisfaction and performance within schools justified considerable effort to develop suitable techniques for learning environment assessment. A brief history of the development and refinement of such techniques is outlined in the next section, with particular consideration being given to those used in this current study.

2.4.3 Assessment Techniques for Primary/Secondary Classroom and School Environments

Trickett and Moos (1973) used the conceptual framework from Moos’ earlier work to develop the *Classroom Environment Scale (CES)* for junior high and high school classrooms. The CES incorporated Moos’ three sets of variables described earlier (Table 2.1; Relationship, Personal Development and System Maintenance). The 90 items are answered by students in a true-false format and the questionnaires have a balance of positive and negative items for each scale. Importantly, the people within the environments themselves completed the *CES*:

Rather than relying on the ratings of outside observers, we defined the classroom environment in terms of the shared perceptions of the people within that environment. This has the dual advantage of characterising the class through the eyes of the actual participants and of soliciting information about its long standing attributes in a manner more parsimonious than observational methods. A phenomenological approach provides important data that the objective observer who counts cues or behaviours may miss (Walberg, 1976 [in Moos, 1979, p. 138]).

Around the same time, Walberg and associates were developing the *Learning Environment Inventory (LEI)*, the instrument that was later modified into the

My Class Inventory (MCI). The LEI grew out of the nature and evaluation needs of the Harvard Project Physics from a perceived need for a high inference pencil-and-paper instrument that teachers could easily administer to provide insight into students' perceptions of the classroom climate (Fraser, Anderson & Walberg, 1982, p. 2). Initial development was based upon a format described by Hemphill and Westie (1950) and this resulted in the *Classroom Climate Questionnaire (CCQ)* which contained several scales found to be quite weak upon validity analysis. The stronger scales were retained, expanded and improved to form the LEI. Initially containing 14 scales, this was later expanded to 15 scales. The developers of the LEI described it as follows:

The LEI has two distinct uses: to assess the perceptions of an individual student, or to gauge the learning environment of the class as a group. For the former purpose, the normal research procedures apply with one caution. Since individuals' scores are measures of their perceptions of the one group of which they are a part, the scores of different individuals within the class are not strictly independent. Thus, as scores of subjects within a class all relate to common class experiences, it is the variance among scores rather than the scores themselves which are of educational or psychological interest (Fraser, Anderson & Walberg, 1982, p. 4).

The LEI is based upon a conceptual model of high inference, consensual beta press. The 15 scales are: *Cohesiveness, Diversity, Formality, Speed, Material Environment, Friction, Goal Direction, Favouritism, Difficulty, Apathy, Democracy, Cliqueness, Satisfaction, Disorganisation, and Competitiveness*. The LEI dimensions differ slightly from those of the CES. The selection criterion used for the LEI was:

...to include only concepts previously identified as good predictors of learning, concepts considered relevant to sociopsychological theory and research, concepts exemplifying useful theory and research in education, or concepts intuitively judged relevant to the social psychology of the classroom (Kuert, 1979, p. 185).

Students are asked to rate items on a four-point Likert scale ranging from “strongly agree” to “strongly disagree”. The final version contains seven items per scale with the polarity reversed for some items. Modified versions of the LEI have also been developed including short versions, with one of particular interest is a version being developed for junior secondary classes:

Power and Tisher had reported that some ninth-grade students experienced difficulty in comprehending numerous items. The original LEI had also been validated in conventional classrooms, which meant that some of the dimensions had little relevance for individualized classrooms, while other dimensions of major importance were not included (Fraser, 1979, p. 219).

The shorter form allowed for better comprehension and it was possible to administer it in a normal class period. Shortened forms of several environment measures have been developed, most containing a reduced number of scales and a total of around 25 items. It was found that reliability could be retained to a high degree:

Fraser has reported a successful attempt at modifying the original MCI to improve reliability (Fisher & Fraser, 1981; Fraser, Anderson & Walberg, 1982). ...Seven items were identified and removed to produce improved reliabilities for some scales. Moreover, when the new 38 item version was administered to a large cross-validation sample consisting of 2305 seventh grade students in 100 classrooms in 30 schools throughout Tasmania, the improvements in reliability were found to persist (Fraser, 1986a, p. 47).

This short version, originally validated in a Tasmanian context, was used in this current study. To maximise internal consistency, items for the short version were selected from the long versions that exhibited:

...large item-remainder correlations (that is, correlations between item score and total score on the rest of the scale), and discriminant validity was enhanced by including an item only if the correlation with its apriori assigned scale was smaller than the correlation with any other items in the battery (Fraser, 1986b, p. 8).

The last two decades have seen numerous classroom environment measuring instruments being developed in various modified forms. These include the *Individualised Classroom Environment Questionnaire (ICEQ)* (Rentoul & Fraser, 1979), *My Class Inventory (MCI)* (Fraser, Anderson & Walberg, 1982), the *Science Laboratory Environment Inventory (SLEI)* (Fraser, Giddings & McRobbie (1992, 1995) and the *Constructivist Learning Environment Survey (CLES)* (Taylor, Dawson & Fraser, 1994). The *CLES* was designed specifically to enable monitoring of constructivist-oriented transformations of classroom learning environments. Many of these are based upon refinements of earlier scales, and may include actual and preferred forms (Fraser 1986a; Hattie, Byrne & Fraser, 1987) for teacher and student. Also, the *SLEI* is of interest because it specifically relates to science laboratory environments and also comes in separate versions that assess consensual beta press and a private beta press.

A separate, but related, research strand has also focussed upon school climate (as opposed to classroom climate) to allow for feedback on particular schools or comparisons of schools. Moos had developed the *Work Environment Scale (WES)* around the same time as the *CES* to measure work place milieus (Moos, 1974b). A variation of the *WES* was developed and used for assessing school-level environments for comparisons between school types (Fraser, Docker & Fisher, 1987). Other instruments that can be used at the school level are the *Organisational Climate Description Questionnaire (OCDQ)* (Halpin & Croft, 1963) and the *School-Level Environment Questionnaire (SLEQ)* (Fraser & Rentoul, 1982). Because these instruments have all been developed with scales, items and conceptual bases different from the classroom instruments, their use may limit any school to school comparisons. However, some of the classroom environment instruments have also been used successfully at the school level by changing the items from “my class”

to “my school” (Ellett & Walberg, 1979, p. 155). Also, some studies have established associations between school-level and classroom-level environments (Dorman, Fraser & McRobbie, 1997).

One recent development in learning environment research involves cross-national studies (Fisher, Rickards, Goh & Wong, 1997; Huang & Fraser, 1997). In such studies, samples are typically drawn from two or more countries. Fraser (1998) reports that such studies provide a “greater variation in variables of interest” and “taken-for-granted familiar educational practices, beliefs and attitudes in one country can be exposed” (pp. 35-36).

Environment measures can be used longitudinally in pre/post designs for evaluating the effectiveness of interventions (Fraser, 1988a, pp. 171-175). Commonly, such designs include an “actual” and “ideal” version prior to intervention and a repeat of the ‘actual’ version after implementation. The effectiveness of the intervention can be gauged from any perceived movements towards or away from the ideal, that potentially are attributable to the strategies employed. Typically such studies are conducted over a period of several weeks, although curriculum/program evaluation studies can extend over longer periods.

In other recent research developments, McRobbie, Fisher and Wong (1998) suggest that “Personal” and “Class” forms for learning environment evaluations can differentiate between a whole-class perspective of the environment and the individuals’ perceived role within the class. Such comparisons could have a place in research aimed at evaluating students’ re-adjustment to new class groupings such as that which often occurs after transition.

The pre-transition/post-transition structure of the current study is similarly longitudinal, but involves further complications in that a change of school is involved between measures. The following section describes the development of the instrument used within this study and establishes relevance for the target age group as well as conceptual appropriateness for the study.

2.4.4 The Classroom Environment Instrument Used: The MCI

The classroom learning environment instrument used in the current study was the *My Class Inventory (MCI)*. This section outlines the development, structure and previous research usage of this instrument. The MCI's predecessor, the *Learning Environment Inventory (LEI)* has proven to be one of the most useful of the classroom environment measures but, as mentioned earlier in Section 2.4.3, it has limitations if used with younger children. To some degree, a shortened version would alleviate this, but it would still contain language inappropriate for primary school students. During the early 1970s, a primary school version of the LEI was developed and used in a year-long longitudinal study with 23 primary school classes in Chicago (Talmage & Hart, 1977; Talmage & Eash, 1978). This primary version of the LEI is called the *My Class Inventory (MCI)*. The MCI differs from the LEI in four key ways to render it more appropriate for younger age groups:

First, in order to minimise fatigue among younger children, the MCI contains only five of the LEI's original fifteen scales. Second, the item wording has been simplified to enhance readability. Third, the LEI's four point response format has been reduced to a two-point (yes-no) response format in the MCI. Fourth, students answer on the questionnaire itself instead of on a separate response sheet to avoid errors in transferring responses from one place to another (Fraser, 1986b, p. 7).

The Fisher and Fraser short form of the MCI (as used in this study) contains 38 items altogether, across the following scales:

Cohesiveness (Previously called Intimacy)(6 items). When several individuals interact for a period of time, a feeling of intimacy or cohesiveness may develop. This property separates members of a group from non-members, and has been found in research to relate to several class and course properties. ... Also class cohesiveness has been found consistently to be positively related to learning criteria.

Friction (8 items). Of Thelen's (1950) three major concepts of experiencing, interdependence, and conflict, conflict is considered the most significant social psychological phenomenon. Energy expended in conflict cannot be channelled in other directions and the emotional upset resulting from extensive or continued conflict can be expected to impair learning. Past studies (Walberg and Ahlgren, 1970) have revealed that it...is negatively correlated with measures of learning.

Difficulty (8 items). The difficulty scale can be considered important for the same reasons as for the speed scale of the *LEI*. It also completes the "depth-breadth" paradigm used by some educational theorists. It assesses the extent to which students find difficulty with the work of the class. ...Positive relationships have been found between student-perceived difficulty and student learning outcomes.

Satisfaction (9 items). Whether or not pupils like their class can be expected to affect their learning. If students dislike the subject, the teacher, or their classmates, their frustrations may result in less than optimal performance. Furthermore, because satisfaction with school itself is a goal of educators, research use of this scale may help shed light on the effects of such practices as homogeneous and heterogeneous grouping, sexual and racial integration, and so forth. Satisfaction has been found to be negatively related to class size (Walberg, 1969a), and to be consistently positively associated with student learning.

Competitiveness (7 items). Class emphasis on students competing with each other is a central concept in group dynamics and therefore was added to the 1969 revision of the *LEI*. ... Consistent relationships between competitiveness and student learning outcomes have not been established (Fraser, Anderson & Walberg, 1982, pp. 6-8.)

Although developed for use in primary school, this modification of the *LEI* has proved very useful in junior secondary school classrooms (Fraser, 1986b, p. 6). Originally, the MCI contained 45 items in total, but this has

since been modified by Fisher and Fraser (1981) to 38 items. The 45-item version of the MCI had relatively low reliabilities on some scales until Fisher and Fraser undertook item analysis to identify items whose removal would enhance the scale reliabilities.

Validation data for the Fisher and Fraser version are included in Tables 2.2 and 2.3. The validation tests included within these tables are for internal consistency (alpha reliability), discriminant validity (mean correlation between scales) and ability to differentiate between classrooms (F and η^2). It is important with any instrument that scales exhibit internal consistency (ie. each item within a scale is measuring a similar dimension), discriminant validity (ie. each scale is measuring a different dimension) and an ability to differentiate between perception of groups of students in different classroom contexts. F statistics are used when probabilistic inferences about sources of variance are made and, the η^2 statistic, which is the ratio between total sums of squares, is provided as an estimate of the amount of variance in scores attributable to class membership (ie. the instrument's ability to differentiate between perceptions of different groups). The final, validated version of the MCI comes in "actual" and "preferred" forms. It is this reduced version of the MCI that was used in the current study.

Table 2.2 **Alpha Reliabilities and Mean Correlations with other Scales for the 38 Item Version of the MCI (data from Australian primary school sample using the 'actual' form)**
(From Fraser 1986a, pp. 49-56)

Scale	No. of items	Alpha reliability	Mean correlation with other scales
Satisfaction	6	.68	.30
Friction	8	.78	.27
Cohesiveness	8	.81	.25
Difficulty	8	.51	.31
Competitiveness	7	.70	.11

Table 2.3 **F and Eta² Values for Class Membership Differences for MCI Scales (data from Australian primary school sample using the 'actual' form)**
(From Fraser & Fisher, 1981, pp. 151-152)

Scale	No. of items	F	Eta ²
Satisfaction	6	2.5***	.021
Friction	8	4.1***	.31
Cohesiveness	8	2.0***	.18
Difficulty	8	4.0***	.30
Competitiveness	7	2.1***	.19

*** p < 0.001

As mentioned previously, the MCI has also been successfully utilised as a school climate measure using “my school” instead of “my class” and retaining

the same items and scales (Ellett & Walberg, 1979, p. 155; Fraser, 1986a. p. 106, Grady, 1993).

Fraser and O'Brien (1985) used a 25-item version of the MCI to explore associations between student achievement and classroom environment in primary school classrooms. As this research was undertaken with grade 3 classes, the items were read out aloud by the researcher to reduce possible language problems. This research identified a strong association between achievement measures of word knowledge and comprehension and all of the MCI dimensions with the exception of Competitiveness. The study also investigated differences between teacher and student perceptions of the actual classroom environment and the preferred classroom environment.

Other studies have successfully used the MCI in grades 1-8 in both Australia and the United States (Ellett, Masters & Poole, 1978; Talmage & Walberg, 1978; Boulanger, 1980). It has also been used in grade 5 classes in Singapore in a modified form (Goh, 1994; Goh & Fraser, 1996).

Another study comparing boys' and girls' responses to the MCI was conducted by Lawrenz (1987). In this study, responses from grade 4 and 7 in the primary school were compared with responses from high school students in relation to science classes. This research compared responses from students, differentiated by sex, to teacher responses, again differentiated by sex. Lawrenz found that perceptions were sex-related, and that differences became more pronounced as the students grew older. There were also some teacher-sex interaction trends. In general, students perceived the learning environment more favourably when the two opposite sexes are combined. Again these trends became more pronounced as the student age group increased.

One recent study used the MCI in the early childhood years of schooling (Fisher, Fraser & Bassett, 1995). Although the questionnaire had to be administered orally and on an individual basis, because students were developmentally incapable of written responses, the MCI instrument proved quite useful and valid within this context.

Sufficient evidence exists to conclude that the MCI is a useful and valid instrument for the measurement of the classroom environment for primary and lower secondary classes.

As previously mentioned (Section 2.4.2), Moos (1976) initially proposed links between student satisfaction and performance and the learning environment and, more recently, other studies (Fraser, 1986a, pp. 72-119) have verified and described the nature of these links to a degree. The establishment of learning environment/student outcome links enhances the importance of learning environment research of the kind undertaken within this current study.

2.4.5 Students' Perceptions of the Learning Environment and Student Outcomes

Over the last two decades a large amount of learning environment research has been undertaken around the world, much of it employing versions of the measurement instruments and techniques outlined here. Clear links between students' perceptions of environment and learning outcomes have been established:

The psychological morale of the classroom group strongly predicts end-of-course measures of affective, behavioral and cognitive learning (Fraser, 1986a). Morale refers to the cohesiveness, satisfaction, goal direction and related social-psychological properties or climate of the classroom group perceived by students. By comparison, the influence of the

peer group outside of the school is moderate in influence and comparable to the influence of the student's socio-economic status (Walberg, 1987, p. 3).

Haertel, Walberg and Haertel (1981) conducted a meta-analysis of learning environment research and found that a total of 31 of 36 hypotheses derived by Walberg from psychology were supported:

Both learning post-tests and regression-adjusted gains in learning in a variety of subject areas were positively associated with student-perceived cohesiveness, satisfaction, difficulty, formality, goal direction, democracy and material environment, and negatively associated with friction, cliqueness, apathy and disorganisation. The authors concluded that the magnitude of the outcome-environment correlation was significantly associated with the dimension of classroom environment considered, the unit of statistical analysis and the nation in which the study was conducted... Correlations were higher in samples of older students and in studies employing collectivities such as classes and schools (in contrast to students) as the units of statistical analysis (Fraser, 1986a, p. 117).

Further, the researchers concluded that the correlations measured were "surprisingly consistent across studies". Research based upon the MCI has produced similar results (Fraser, Anderson & Walberg, 1982). Patterns of associations from past research are summarised below:

1. *Cohesiveness* was negatively correlated with class size and teacher experience (when teaching a new course) and positively correlated to learning criteria. Humanities classes were found to be more cohesive than science classes.

2. *Friction* was higher in classes with more boys than girls and was negatively correlated with measures of learning. Research also showed mathematics classes had higher friction than other subjects.

3. *Difficulty* was perceived to be greater in mathematics than other subjects, less in larger classes than smaller ones and a positive relationship has been found with learning outcomes.

4. *Satisfaction* had a negative correlation with class size and was positively related to learning outcomes.

5. *Competitiveness* was greater in classes with more boys, while the relationship to learning outcomes remained unclear (Fraser, 1982a, pp. 6-8).

One further study by Talmage and Walberg (1978) based upon the MCI in grades 1-6 found that greater classroom *Competitiveness* was associated with lower reading achievement scores, while another study by Boulanger (1980) in grades 4-8 found associations between reasoning outcomes and four of the MCI scales. In Hattie, Byrne and Fraser's (1987) summary of outcomes for studies that included a 'preferred' version of the MCI, CES and ICEQ instruments, a strong consistency in student preferences was evident with some variation across age and gender. Boys scored higher than girls on preferred *Friction* and *Competitiveness* on the MCI scales, although both scored similarly on *Difficulty*; this differentiation was retained across age. Younger children (grade 7) preferred greater structure and *Cohesiveness*, with age proving to be a factor for most scales. The authors offered a further comment on sex differences on 'actual' and 'preferred' comparisons that the research leaves unanswered:

Whether the girls perceive too favourably their class environments in general and their teachers' qualities and attitudes in particular, or whether the teachers were actually 'nicer' to girls than to boys, remains a question that only further research could answer (Hattie, Byrne & Fraser, 1987, p. 86).

Other research using the MCI in conjunction with student outcomes is reviewed below: Fraser and Fisher (1982b) used the MCI to explore associations with student inquiry skills, understanding of the nature of science and attitudes. Fraser and O'Brien (1985) described links between word knowledge and comprehension and MCI scale perceptions, and Goh and Fraser (1996) identified consistent associations between student perceptions of the MCI scales and mathematics achievement among 1 512

primary students in Singaporean classrooms. The research reported by Goh and Fraser used the MCI in conjunction with the *Questionnaire on Teacher Interaction*, which is consistent with the design of the research described in this thesis. The QTI is discussed in detail in Section 2.5 below.

One key factor within the learning environment framework, along with the students themselves, is the teacher and the consequent relationship that exists between him/her and the students. Section 2.5 of this chapter considers the role of teacher/student interaction within the learning environment.

2.4.6 Summary for the Learning Environment Domain

Historically, human well being has been linked to the immediate environment and early research established links between environment and behaviour in contexts such as hospitals and prisons. Following seminal works of Moos, Lewin and Walberg, this research was provided with a theoretical basis. Building on this theory, studies of the fit between the environment and human needs have been undertaken in a variety of contexts including educational settings. This research has clearly established an important environmental dimension to school experiences which is linked to student outcomes.

Many different instruments have been developed to measure classroom learning environments including one specifically for primary and junior secondary school children, namely the *My Class Inventory (MCI)*. As with similar instruments, the MCI is often administered in pre-post longitudinal studies to evaluate interventions. A student preferred version is also available for actual/preferred comparisons. In such studies, the MCI has proven to be a reliable and valid measure of classroom climate. In the current study, a pre-

post structure was used across the ‘uncontrolled’ transition discontinuity between primary and secondary school.

One further specific element of the classroom learning environment that was measured in this study was the style of the teacher/student interaction. The next section contains a discussion of the historical development and theoretical basis of this interaction, together with the specific instrument used to measure this dimension.

2.5 Teacher Interpersonal Behaviour

As students move from primary school into secondary school one of the most obvious changes for them is the increase in the number of teachers with whom they interact. Also, this new group of teachers are responsible for the teaching of specific subjects, often in environments that are somewhat unfamiliar to the students. Most primary classes have one teacher for the majority, if not all, of the school week, whereas grade 7 students have anything up to eight or nine different teachers in several different classrooms. The secondary timetable also identifies these secondary teachers very closely with the subject which they teach, unlike in the primary situation. The nature of the teacher-student relationship is therefore a potentially important aspect of the learning environment, especially during this phase of school.

This section considers the role of teacher/student interaction within the classroom, and its contribution to the overall learning environment. The development and validation of one instrument for the measurement of this environmental aspect, the *Questionnaire on Teacher Interaction (QTI)*, is outlined in detail as it was used in the current study (Section 2.5.2). Relevant research using the QTI is discussed, along with major findings, particularly as they relate to broader environmental research (Section 2.5.6).

2.5.1 Background

Teacher-student interaction within an educational setting can be described as a communication system. Such systems are typified by the inter-relationship of components and circularity of influencing processes (Creton, Wubbels & Hooymayers, 1993, pp. 1-2). These authors also suggest that, on purely pragmatic grounds, if change is to be introduced into such a system, the teacher should be the instrumental focus of that change. They also add, however, that change within such a system is difficult because of an inherent tendency for stability and hence non-change:

Classes are characterised by stability, resistance to change and circular processes... Once stability has been established (whether positive or negative) both teachers and students seem hesitant to change... The first day of school seems to set the trend for the rest of the year, and once the pattern is set it is difficult to modify (Creton, Wubbels & Hooymayers, 1993, p. 2).

If it is argued that within such an environment the teacher is instrumental as a focus of change, it follows that any change in teacher style or role could precipitate broader perceptions of change within classrooms.

Bhushan (1986), when considering the role of the teacher within the classroom learning environment, concluded:

It is intuitively plausible that the teacher is a key figure in the kinds of relationships that prevail in his/her classroom. It is also likely that the teacher's attitudes resulting from his/her life experiences have a noticeable effect on the kinds of relationships which this teacher creates in his/her classroom (p. 41).

Such plausibility, Bhushan argues, is supported by direct inference from research which also suggests that teachers' attitudes and beliefs regarding

learning environments may have a direct bearing on student learning (Bhushan, 1986, p. 45). Wubbels, Brekelmans and Hermans (1987) suggested that the key factor linking these two aspects within the classroom interactive system was the students' perceptions of interactional teacher behaviour:

It appears that the relation between the students' perceptions of interactional teacher behaviour and student outcomes was stronger than the relation between curriculum, teachers' opinions and the students' perceptions of other aspects of the learning environment, on the one hand, and student outcomes, on the other hand (p. 23).

2.5.2 Defining and Measuring the Psychosocial Dimensions of Teacher Interpersonal Interaction

Interactional teacher behaviour is one component of the *relationship dimension* of the classroom learning environment as conceptualised by Moos (1976) (see Section 2.4). Moos does not specify the teacher interaction component within his framework beyond "teacher control" and "teacher support", although he does suggest that these have a major impact on classroom learning environments and student perceptions (1976, pp. 192-193).

To specify more clearly the nature of teacher interaction within a conceptual framework, Wubbels and associates utilised a second model taken from psychological theory. This was the model of *interpersonal behaviour* developed by Leary (1957). Leary's model describes and measures specific interpersonal behaviours grouped into eight categories, which can be further condensed onto a dual axis plane. Each axis represents a continuum between two extremes giving the model the flexibility to incorporate normal and abnormal behaviours within the one framework. The two axes in the Leary

model were labelled as “Affection-Hostility” and “Dominance-Submission”. Used extensively in psychological research, the Leary model has shown itself to be broadly applicable and robust. The dual dimensional scale model has also been successfully used in educational settings (Slater, 1962; Dunkin & Biddle, 1974). Dunkin and Biddle’s research, for example, considered teachers’ influences on classroom events. The dual dimensional nature of the Leary model allowed for a graphical representation of any profile of interpersonal behaviours within a specific setting.

To enhance the model’s applicability to educational settings, Wubbels and associates developed an adapted version (Wubbels, Brekelmans & Hermans, 1987; Wubbels, Creton, Levy & Hooymayers, 1993). This version retained the general structure of eight categories (often represented as a two-dimensional graphic), but with some redefinition and modification of labels. The adapted version referred to the two axes as “influence” and “proximity”, with the “influence” dimension described as a “Dominance-Submission” continuum (after Leary). Wubbels and associates suggest that this continuum is not necessarily to be interpreted as “Strong-Weak”, but rather the degree of influence inherent in a specific role being adopted by a teacher in a particular interactive setting (eg. such as Writer-Reader or Speaker-Listener) (Wubbels, Creton, Levy & Hooymayers, 1993, p. 15-16). The second axis, called “proximity”, was relabelled as a “Cooperation-Opposition” continuum (after Leary’s Affection-Hostility axis). In the adaptation of Leary’s original model, Wubbels and Levy used the “Proximity” dimension to measure the degree of cooperation or closeness between those communicating. The “Influence” dimension designates who is directing or controlling the communication. Figure 2.1 shows the two-dimensional model as adapted by Wubbels and Levy.

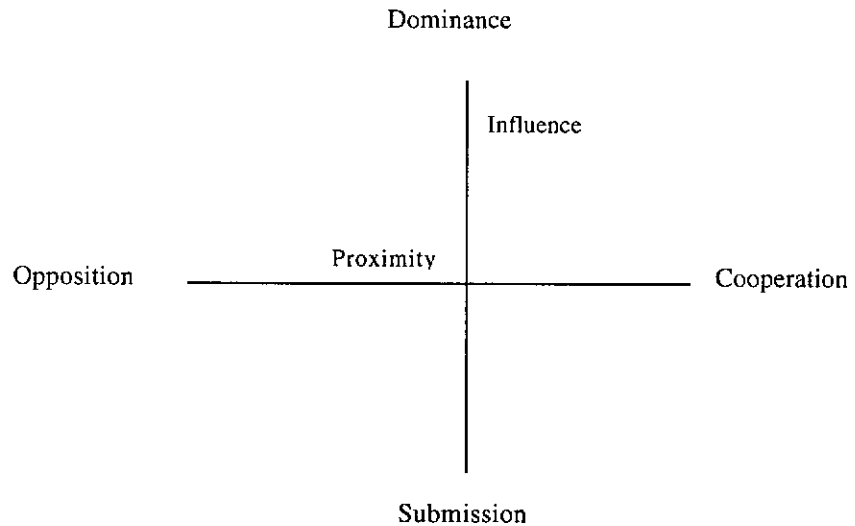


Figure 2.1 **The Coordinate System of the Interpersonal Model**
(Wubbels & Levy, 1993, p. 15)

The eight categories of teacher/student behaviours that form the two inclusive dimensions are *Leadership (DC)*, *Helpful/Friendly (CD)*, *Understanding (CS)*, *Student Responsibility and Freedom (SC)*, *Uncertain (SO)*, *Dissatisfied (OS)*, *Admonishing (OD)* and *Strict (DO)*. Each is defined in terms of typical behaviours within the category, rather than any precise, delineating descriptor:

Admonishing (OD) - gets angry, takes pupils to task, expresses irritation and anger, forbids, corrects, punishes;

Strict/Disciplinary (DO) - keeps reins tight, checks, judges, gets class silent, maintains silence, is strict, exacts norms and sets rules;

Providing Leadership (DC) - notices what is happening, leads, organises, gives orders, sets tasks, determines procedures, structures the classroom situation, explains, makes intentions clear, holds attention;

Helpful/Friendly (CD) - assists, shows interest, joins, behaves in a friendly or considerate manner, is able to make a joke, inspires confidence and trust;

Understanding (CS) - listens with interest, empathises, shows confidence and is understanding, accepts apologies, looks for ways to settle differences, is patient, is open;

Leaving Scope (SC) (*Later Student Responsibility/Freedom*) - gives opportunity for independent work, waits for class to let off steam, gives freedom and responsibility, approves of something;

Uncertain (SO) - keeps a low profile, apologises, waits to see how the wind blows, admits one is in the wrong;

Dissatisfied (OS) - waits for silence, considers pros and cons, keeps quiet, shows dissatisfaction/looks glum, questions, criticises.

(Adapted from Wubbels, Brekelmans & Hermans, 1987, p. 12).

The eight-category graphic can be drawn to represent teacher and student behaviour in an educational, interactive setting (see Figure 2.2). This provides a profile of teacher/student behaviours.

Wubbels and associates suggest that such profiles may be “molecular” or “molar” in nature. A ‘molecular’ behaviour is one which is short-term and isolated to a specific event, whereas ‘molar’ behaviours are longer term and more clearly representative of a communication style. The ability of the Leary model to explain the relationship between molecular and molar behaviours was one of the key reasons for its adoption as the basis for the adapted, educational settings model (Wubbels, Creton, Levy & Hooymayers, 1993, p. 18).

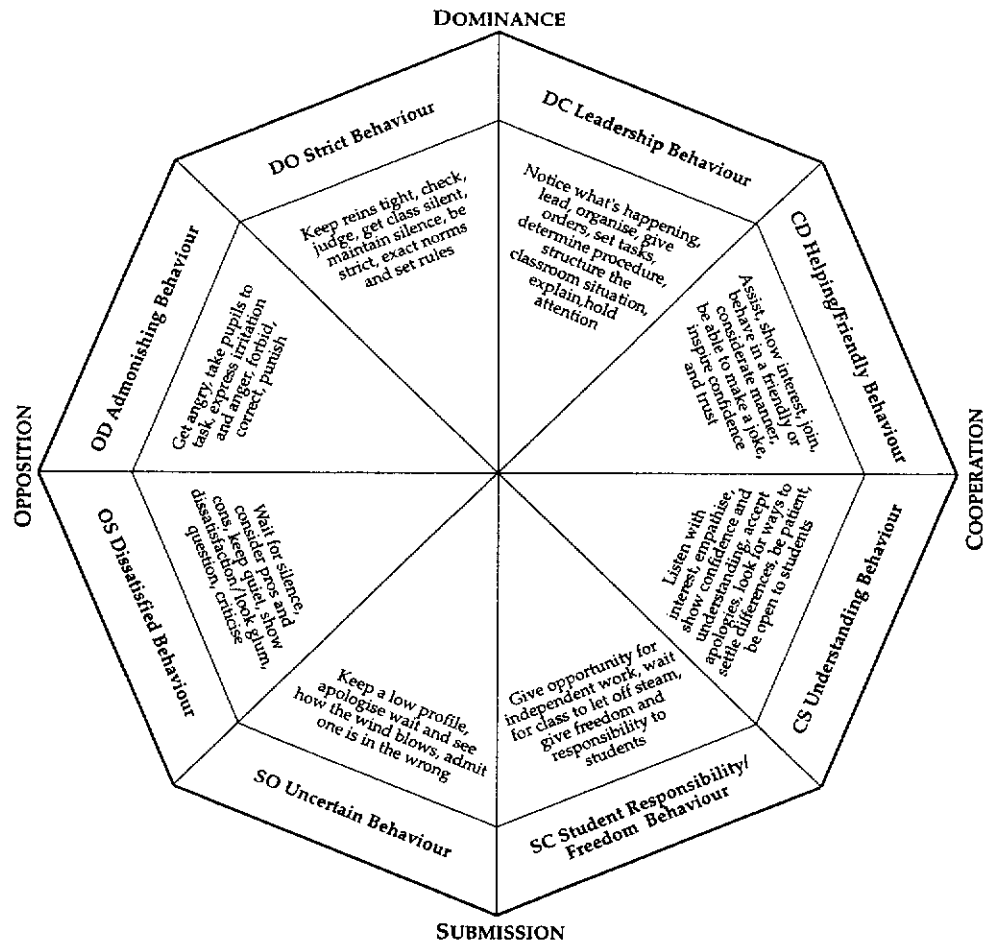


Figure 2.2 The Wubbels and Associates Model for Interpersonal Behaviour (Wubbels, Creton, Levy & Hooymayers, 1993, p. 16)

2.5.3 The Questionnaire on Teacher Interaction

To provide data to construct interactive behaviour profiles, Wubbels, Creton and Hooymayers designed an instrument called the *Questionnaire on Teacher Interaction (QTI)* (Wubbels, Brekelmans & Hermans, 1987, p. 13). An earlier instrument constructed directly from Leary's model, called the *Interpersonal Adjective Checklist (ICL)*, was found to be limited and perhaps even misrepresentative for some scales because of specific behaviour requirements associated with teaching. The problem was largely one of

degree of intensity; for example, what was 'normal' for a teacher (eg. on the helpful/friendly scale) may be seen as more extreme in another context (Wubbels, Creton, Levy & Hooymayers, 1993).

The original QTI was written in the Dutch language, but an American-English version was developed between 1985 and 1987 (Wubbels & Levy, 1991). The original instrument consisted of 77 items and there were 64 items in the American version. There was also a 48-item English-language version developed. Answers are given on a five-point scale, with approximately 10 items per scale. All field testing was done with secondary school students. Early trials resulted in the rewording of some items. Items were chosen if they correlated highly with their own scale and lowly (highly negative) with the opposite scale in the model. The various scales have proved to have a high internal consistency (around 0.7 at the student level and 0.8 at the class level [Wubbels & Levy, 1991]), thus suggesting an underpinning concept for each scale (see Table 2.2 for complete internal consistency figures). Trials have suggested that, to ensure maximum validity, a group size of no less than 10 students within a class should complete the questionnaire. Because of the structure of the eight scales, each scale should correlate highest with scales next to it in the model (see Figure 2.2) and lowest with opposite scales. This does not mean, however, that opposite scales can be regarded as opposite positions on one dimension. However, collapsing of the eight scales into two dimensions (see Figure 2.1) for analysis purposes has proven to be valid and useful in certain contexts (Wubbels, Creton, Levy & Hooymayers, 1993, pp. 19-22). Validity and reliability tests have been conducted using Dutch (Wubbels, Brekelmans & Hermans, 1987), American (Wubbels & Levy, 1991), Singaporean (Goh & Fraser, 1996; Fisher, Rickards, Goh & Wong, 1997), Israeli (Kremer-Hayon & Wubbels, 1992) and Australian (Fisher, Fraser, Wubbels & Brekelmans, 1993; Henderson, Fisher & Fraser, 1994;

Fisher & Rickards, 1997) samples. During the development of the American version, further items were dropped or reworded, mainly because students had difficulty with some wording in literal translations. This resulted in the slightly shorter (48-item) American version. Table 2.3 contains comparative internal consistencies for items in the US, Dutch and Australian versions (Cronbach α). The Cronbach α coefficient is a measure of the degree to which scale items are measuring the same dimension, that is, the degree of correlation between various items within a given scale (internal consistency). Reliability estimates based on both individual student scores and class means are included in Tables 2.4 and 2.5. In the current study similar reliability tests were conducted using both individual scores and group means (see Section 3.9).

Table 2.4 lists analyses of variance for the Dutch and American versions of the QTI. The analysis of variance table includes an F ratio and an η^2 figure for each scale. In an instrument validation context, these tests help to determine whether each scale of an instrument is able to differentiate between the perceptions of students in different classes (see previous discussion in Section 2.4.4). (F values in Table 2.4 are significant at the 0.01 level.)

Table 2.4 **Internal Consistencies, Cronbach α Reliabilities in Dutch, American and Australian Samples for the QTI**
(From Wubbels & Levy, 1991; Fisher & Rickards, 1997)

Scale	Cronbach α reliabilities					
	Student Level			Class Level		
	US	Dutch	Aus	US	Dutch	Aus
DC Leadership	0.80	0.83	0.82	0.94	0.94	0.93
CD Help/Friendly	0.88	0.90	0.88	0.95	0.95	0.96
CS Understanding	0.88	0.90	0.85	0.94	0.96	0.95
SC Stud. Resp/ Freedom	0.76	0.74	0.66	0.86	0.85	0.82
SO Uncertain	0.82	0.79	0.72	0.97	0.92	0.87
OS Dissatisfied	0.83	0.86	0.80	0.90	0.92	0.93
OD Admonishing	0.84	0.81	0.76	0.92	0.90	0.87
DO Strict	0.80	0.78	0.63	0.95	0.89	0.78

Table 2.5 **Analysis of Variance Results (F & Eta²) for Ability of QTI Scales to Differentiate Between Classrooms**
(From Wubbels & Levy, 1991)

Scale	Country Statistic			
	F		ETA ²	
	US	Dutch	US	Dutch
DC Leadership	0.83	0.82	0.94	0.93
CD Help/Friendly	0.90	0.88	0.95	0.96
CS Understanding	0.90	0.85	0.96	0.95
SC Stud. Resp/ Freedom	0.74	0.66	0.85	0.82
SO Uncertain	0.79	0.72	0.92	0.87
OS Dissatisfied	0.86	0.80	0.92	0.93
OD Admonishing	0.81	0.76	0.90	0.87
DO Strict	0.78	0.63	0.89	0.78

A short version of the QTI, consisting of six items per scale, was also developed by Wubbels and associates (Wubbels & Levy, 1991). The instrument used in this study was a further adaptation of this short version with items adapted for use with primary school students.

In several recent studies (Kent, 1992; Henderson, Fisher & Fraser, 1994; Fisher, Fraser & Bassett, 1995; Cresswell & Fisher, 1997; Fisher & Rickards, 1997), the QTI has proven to be a valid and reliable instrument for use in Australian (including Tasmanian) secondary school contexts. When transferring learning environment instruments across cultural boundaries (particularly if cross-national comparisons are to be made), however, Wubbels cautions that:

...cross-national studies need extensive stages of conceptualization and instrument development...There will be huge pressures on countries and/or individual researchers to change designs to be more appropriate to their situations. To concede to these pressures is a dangerous threat to the validity of a cross-national study. A translation of the QTI from Dutch to American to Hebrew versions took four rounds before acceptable reliability was achieved (Wubbels, 1993, p. 118).

2.5.4 Typology of Teachers Based upon QTI Dimensions

Using data collected during earlier studies (Wubbels, Brekelmans & Hermans, 1987; Wubbels & Levy, 1991; Levy, Rodriguez & Wubbels, 1992), Brekelmans, Levy and Rodriguez (1993) used cluster analysis techniques to develop a teacher communication style typology using the QTI conceptual framework. They found that, regardless of the national origin of the data (from Dutch, American samples), teacher profiles represented one of a range of distinguishable types.

- | | |
|---|-------------------------------------|
| Type 1: <i>Directive</i> | Type 2: <i>Authoritative</i> |
| Type 3: <i>Tolerant and Authoritative</i> | Type 4: <i>Tolerant</i> |
| Type 5: <i>Uncertain/Tolerant</i> | Type 6: <i>Uncertain/Aggressive</i> |
| Type 7: <i>Repressive</i> | Type 8: <i>Drudging</i> |

For a graphical representation of dominant characteristic of each type, see Figure 2.3.

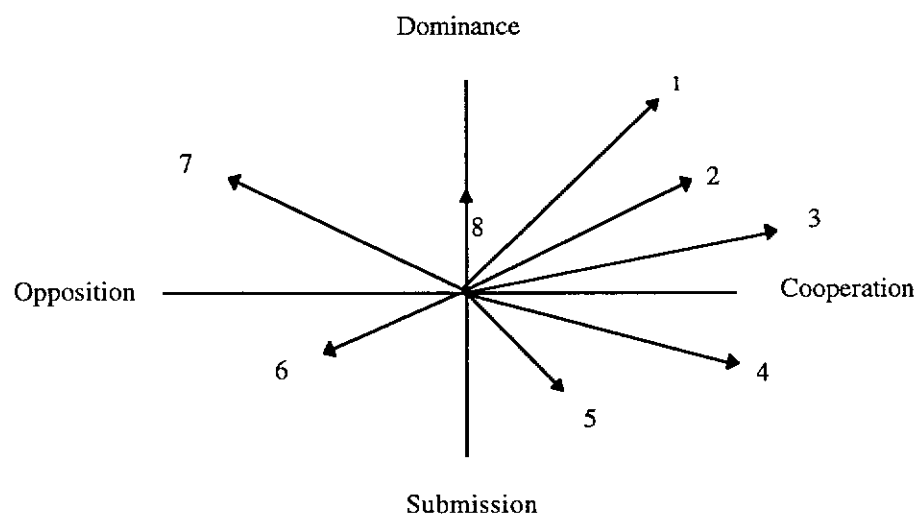
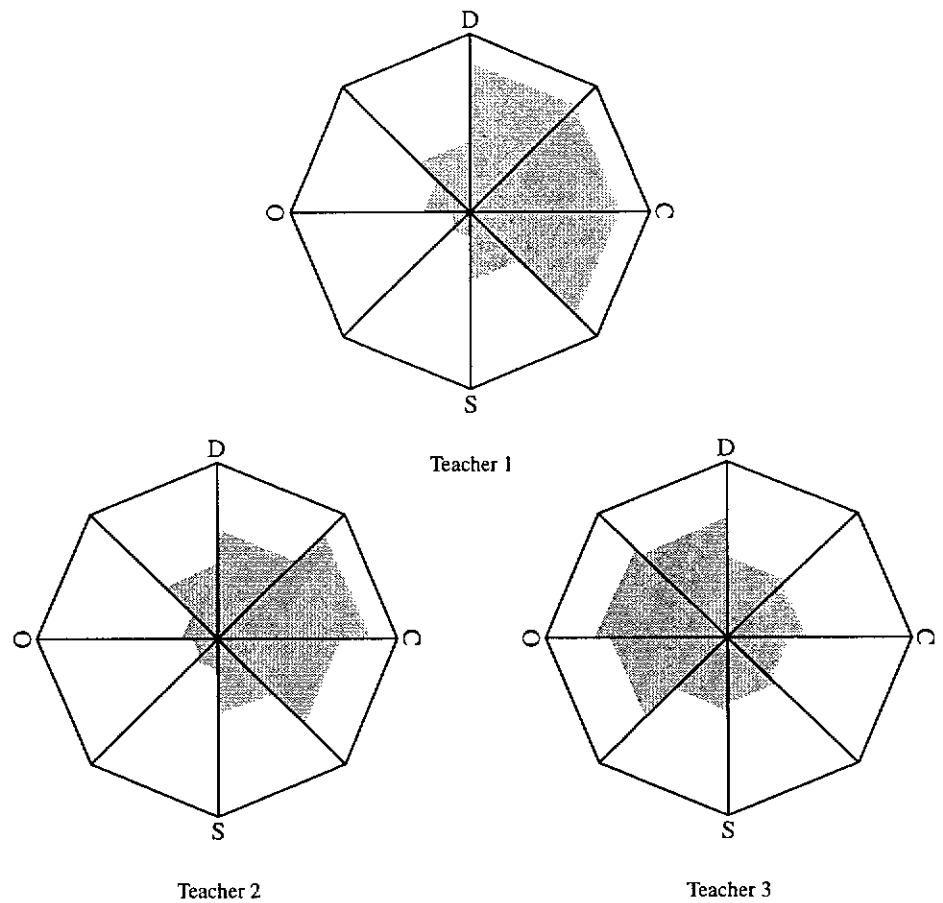


Fig. 2.3 **Mean Profiles of the Eight Teacher Communication Typologies**
 (Adapted from Brekelmans, Levy & Rodriguez, 1993, p. 48 by Goh, 1994)

The eight-dimensional model provides graphical profiles of these eight teacher types. Similar profiles can be generated for “actual” or “ideal” teacher data for comparison. These profiles are represented with a relative shading of each dimension that depends upon generated score. These profile graphs are represented as in example Figure. 2.4.



- Teacher 1 profile = A typical 'Preferred Teacher' based upon Australian data
- Teacher 2 profile = How students might see a teacher with similar 'actual' profile
- Teacher 3 Profile = An example of a teacher with a strong 'Dominance-Opposition' profile (that is a strongly 'non-preferred' teacher profile)

Fig. 2.4 **Examples of Profiles Generated by the QTI Interpersonal Dimensions Model**

Research has also linked teacher types to some classroom factors, specifically to the dominant sex group within a class:

The studies by Wubbels and associates also found typologies to be related to the gender make up of the class, with the proportion of boys in the class being the significant factor. (However class size and student ability were not significant.) Directive (1), Authoritative (2) and Tolerant/Authoritative (3) teachers seemed to have a relatively high percentage of boys in class. More girls were

found in Tolerant (4), Uncertain/Aggressive (6) and Repressive (7) teachers' classes (Brekelmans, Levy & Rodriguez, 1993, p. 55).

Of possible relevance to these results is the fact that the sample consisted of Dutch physics classes taught mainly by male teachers.

2.5.5 Teacher Interpersonal Behaviour: Student Perceptions and Outcomes

Research based upon this interaction model, using the QTI, has been extensive over the last decade across a range of school and cultural settings. Generally these studies have been used to assess students' perceptions compared to teachers' perceptions of a particular teacher's interpersonal style, or to allow comparison between students' perceptions of actual teachers styles and students' preferences. Much of the early developmental research was completed in the Netherlands (Brekelmans & Wubbels, 1991) and the USA, with cross-cultural validity trials (Wubbels & Levy, 1991). Wubbels, Brekelmans and Hooymayers, (1992) established that students exhibited higher affective outcomes if the teacher displayed more co-operative behaviours. Kremer-Hayon and Wubbels, (1992) developed a questionnaire (*Questionnaire on Supervisor Interaction [QSI]*) to explore the relationships between student teachers and supervisors based on the QTI model. Levy, Creton and Wubbels analysed data from the Netherlands, the USA and Australia and developed best and worst teacher profiles. The 'best' teacher was one who demonstrated positive leadership with a high degree of co-operation. The worst teachers were more admonishing and dissatisfied. Wubbels, Creton, Levy & Hooymayers, (1993) further developed this to a complete teacher interpersonal style typology.

Early research in Australia (Fisher, Fraser & Wubbels, 1993; Fisher, Fraser, Wubbels & Brekelmans, 1993) used the QTI in conjunction with the School

Level Environment Questionnaire (SLEQ) with Western Australian and Tasmanian upper secondary science classes. Other Australian research using the QTI in Australian contexts include: Henderson, Fisher and Fraser (1994) with a sample of 489 senior high school students from 28 biology classes and Fisher and Rickards (1997) which investigated associations between cultural background, sex and the interpersonal elements of the learning environment. The study found that the cultural background of the student did influence perceptions of teacher-student interpersonal behaviour. Other cross-cultural comparisons using Australian and Singaporean data have also been made finding small differences between the different cultural groups (Fisher, Rickards, Goh & Wong, 1997). Broad findings from these and similar studies based upon the QTI model can be summarised as follows:

1. For students' within a given class, perceptions of a particular teacher's behaviour usually exhibits a high degree of agreement.
2. Students' perceptions of experienced teachers' behaviour show less variation across classes than do profiles of beginning teachers' behaviour.
3. Student data on 'best teachers' consistently depict strong leadership, heightened friendliness and understanding and less uncertainty, dissatisfaction and admonishment. Also, best teachers allow a little more responsibility and freedom.
4. In general, students and teachers do not agree about their perception of the interpersonal behaviour of the teacher. This divergence between perceptions is larger for teachers with types

of interpersonal behaviour that more often are accompanied by lower student outcomes.

5. Teachers' "ideal" data demonstrates similar characteristics to the student "best" teacher data, except that there is more pronounced differentiation within the profiles generated.
6. In the students' eyes, quality of instruction is more closely related to the proximity than to the influence dimension of the Leary model. That is, friendship and understanding (high co-operative dimension) evoke a more positive student response than leadership and strictness (high dominance dimension).
7. Teacher ideals form two distinct profiles, one of high dominance and another more student-centred (high on student responsibility and freedom). Research also suggests that this differing ideal manifests itself as different learning environment perceptions.
8. Student "best teacher" profiles also are of two distinct types, not unlike the teacher ideals. Generally, the younger the student, the more the preference for greater strictness (dominance). It must be remembered that these data refer to secondary school students.
9. Students identify three distinct "worst teacher" profiles, namely, repressive, uncertain-tolerant and uncertain-aggressive.
10. These student preferences in teacher interpersonal style are consistent with findings in Australian junior secondary science classrooms.

11. As student grade levels increase, secondary school students perceive that teachers exhibit a higher degree of cooperation.
12. Degree of dominance varies across the subject range, with social sciences having the least dominance and foreign language and mathematics teachers exhibiting the highest degree of dominance.
13. No link has been found between communication style and teachers' opinions on student-centred versus subject-centred instruction.
14. Student achievement and attitude are linked to teacher communication style. High achievement exists in classrooms with repressive, directive, authoritative and tolerant teachers. Positive student attitudes are found with teachers who are high in leadership, helpful/friendly, understanding and student responsibility/freedom. This results in some potential conflict for teachers. For example, student attitude is closely related to a high cooperative dimension, and therefore the repressive teacher may have the highest cognitive outcomes, but it is linked to low student attitudes. If teachers want optimum achievement and positive attitudes, some compromise between strong dominance (strictness) and high flexibility (student responsibility/freedom) must be reached. In general, teachers describe their 'ideal' classrooms as being high in both of these aspects. Low student outcomes (affective and cognitive) typically are linked to uncertain/tolerant or uncertain/aggressive teacher profiles. Lowest affective outcomes are linked to "drudging" teachers.

(Similarly, links appear to exist between teacher interpersonal type and satisfaction of student teachers under their supervision.)

15. Student responses to both “Best” and “Actual” versions do not vary greatly across cultures (Dutch, American and Australian). The greatest variation occurs in the “strictness” category.
16. Girls and boys perceive the interpersonal style of their teachers differently with girls being more positive than boys.

2.5.6 Teacher Interpersonal Behaviour and the School and Classroom Environment

The early use of the QTI in Australia that involved its use in conjunction with another learning environment instrument, the *School Level Environment Questionnaire (SLEQ)* (Fisher, Fraser, Wubbels & Brekelmans, 1993) concluded that the QTI has validity within an Australian context for upper secondary classes. However, the study found little relationship between the teachers’ perception of the school environment (as measured by SLEQ) and classroom environment aspects from the QTI model. The implication is that what teachers do in the actual classroom is largely determined by them in terms of interaction with students. This degree of teacher freedom and its potential impact on student outcomes compared with that of the curriculum itself (Brekelmans, Wubbels & Creton, 1990) suggests that teacher interpersonal behaviour, and other learning environment dimensions, have importance for the potential effectiveness of schooling.

Another recent study with a large sample of 3 589 students from 173 classes (Fisher & Rickards, 1997) confirmed the validity of the QTI in lower secondary science classes in Australian contexts, and also revealed both cultural and sex differences in student perceptions of teacher interpersonal

behaviour. Specifically, female students perceived teachers in a more positive way than did their male counterparts. The study also confirmed that, within junior secondary science classes, student attitudes were influenced by teacher interpersonal behaviour. In particular, positive student attitudes were correlated highly with *Leadership*, *Helpful/Friendliness* and *Understanding* teacher-behaviour and had low correlations with the opposite dimensions of the model.

Although the QTI is now established as a valid instrument for measuring teacher interpersonal style within a range of classroom contexts in primary and secondary schools, this study used the QTI for the first time in evaluating changes in students' perceptions of these dimensions across transition.

2.5.7 Summary of Background and Research Related to the QTI

Early theory on communication styles resulted in the Leary model of interpersonal behaviour, which was adapted by Wubbels and associates in the Netherlands to form a "Teacher Interaction" variation of interpersonal behaviour. This resulted in the development of the QTI (*Questionnaire on Teacher Interaction*) to measure eight dimensions of teacher interpersonal style which are then used to generate teacher profiles (discussed in Section 2.5.4). As with the learning environment inventories (discussed in Section 2.4.3), the QTI is often used in pre-post intervention studies and has an "ideal" version for comparison with "actual" measures. The QTI has been used throughout the world and has been shown to be a valid measure of this aspect of the classroom with minor cultural variations. The student and self-perceived teacher profiles generated have been used to develop a taxonomy of teacher interpersonal styles. Research has clearly shown that teachers' interpersonal behaviour as perceived by students is linked to student

outcomes, both affective and cognitive. The current study used an adaptation of the shortened QTI in a pre-post design across the primary to secondary school transition.

2.6 Chapter Summary

This chapter has critically reviewed the literature relevant to early adolescent development, particularly in relation to school contexts, the transition from primary to secondary school and learning environment dimensions and research, including teacher interpersonal behaviour aspects.

As one theoretical approach suggests that student concerns during early adolescence are the result of an accumulation of changes and stresses, some of the more common issues in early adolescent development were discussed along with existing research findings as to their probable effects. Specific note was made of potential sex differences during this early adolescent phase, especially within the context of transition-related experiences. This review clearly establishes adolescence to be a time of great change in an individual's life. Some of these changes (e.g. adaptation to schools, teachers) are transitory stages, and others are total discontinuities (e.g. changing sex-related roles) which result in key changes in role definition. How individuals experience these changes appears to affect how well they cope to a considerable degree. Within this general framework, the primary/secondary school transition is one of the major change events of early adolescence.

Literature relevant to the primary/secondary transition event was explored in depth. As well as school structures, school size influences and student in-school experiences, student sex differences and relevant psycho-sociological theories were considered. Student reactions to the curriculum and classroom

learning environments, at the time of transition, were discussed with particular reference to science. Finally, strategies in use to ease student problems during transition were highlighted with comment on their intent and perceived validity.

The final two sections of the chapter focussed upon the classroom dimensions that are central to this current study of changes in the learning environment during the transition from primary to secondary schooling. Firstly, theories and research on the issue of school and classroom environment were discussed, with specific reference to instruments used for assessment, particularly those appropriate to the upper primary/lower secondary age group. Secondly, one specific aspect of the environment was considered in depth, that of student/teacher interaction. Again, theoretical frameworks were explored along with data collection instruments relevant to the current study. For the two instruments chosen for use in the present study (the *My Class Inventory* and the *Questionnaire on Teacher Interaction*), the conceptual background and history of each was described along with key research in the development and validation of each instrument. Both instruments have been shown to have validity in Australian school contexts.

Research highlighting relationships between relevant the learning environment scales of the MCI and QTI and student outcomes were also discussed. This research demonstrates that students' perceptions of such classroom dimensions influence both affective and cognitive learning outcomes.

Chapter 3 considers in detail the methodology used in this study to measure students' perceptions of identified aspects of primary and secondary classroom environments, and to investigate changes in environment across transition.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter contains an outline of the methodology utilised in this study of students' perceptions of the primary/secondary transition and related changes in learning environment perceptions, in terms of experimental design, implementation and analyses. The aim of the study was to gain an understanding of the primary-secondary transition experience, from the students' perspective, within a wide range of Tasmanian contexts. Students representing a total cross section of mainstream Tasmanian schools were included. For that reason, the sample was selected to be representative of the range of school types and locations within Tasmania. As a consequence, the sample was also representative of the broad range of transitional experiences of students within the state. Students were used as the data source.

As the study included a pilot phase, this is described briefly within Section 3.2. Section 3.3 describes and explains the selection procedures used for the main study sample. Section 3.4 outlines the procedures that were used in the data collection phases of the study. The remaining sections describe the structure of the questionnaires used and analysis methods employed.

As the questionnaires (grade 6 & grade 7) consisted of four parts namely; qualitative open-ended questions, subject rating scales and two versions of the *My Class Inventory (MCI)* and the *Questionnaire on Teacher Interaction (QTI)* in each administration, each of these is considered separately and in detail. Section 3.6 describes the content of the qualitative section of the questionnaires. Section 3.7 describes the method employed to determine students' "liking" of the various curriculum areas they encountered in grade 6

and grade 7. Sections 3.8 and 3.9 discuss the versions of the *My Class Inventory (MCI)* and the *Questionnaire on Teacher Interaction (QTI)* used in the study, and Section 3.10 describes how these data were organised for later analyses. As these instruments (the MCI and the QTI) required formal validation, reliability and validity tests are included and discussed within Section 3.11.

Section 3.12 outlines analysis methods employed to address each of the research questions as proposed in Chapter 1. This includes both preliminary multivariate analysis procedures as well as supportive univariate analyses.

The final chapter section (3.13) provides a summary of the chapter highlighting the important aspects.

3.2 The Pilot Study

A pilot study was conducted with a transition group one year prior to the full study for two purposes:

1. to help identify key aspects of the qualitative section of the data collection and refine the questions used to focus upon these; and,
2. to determine the most appropriate method of administration of the instruments (time needed for student access, explanation required, and so on).

As the study focus was the transition from primary school to secondary school, schools were selected in clusters consisting of a secondary school together with

each of its main primary feeder schools. For the pilot study, a single school cluster was selected using the following criteria:

1. *Ease of access.* As it was necessary to revisit the schools on a number of occasions, it was beneficial for them to be readily accessible.
2. *Nature of the student population.* Key design concerns included the language used in the questionnaire and the students' ability to comprehend and respond in a meaningful way within a restricted time frame. Consequently it was important to trial the instrument with a group exhibiting a wide range of cognitive abilities, especially language-related abilities, as well as a cross-section of behavioural and attitudinal characteristics.
3. *Size of school population.* To determine and refine the mechanics of administering questionnaires to a large number of student groups, a larger secondary school was preferable.
4. *Link to the sample for the main study.* The pilot school cluster was also selected to be a part of the main study sample the following transition year. This allowed some limited sequential cohort comparisons to be made.

The pilot schools selected comprised a suburban school cluster which included four feeder schools, ranging considerably in size and demographics. The pilot sample transition cohort was 153 students.

As a result of the pilot study, qualitative questions and methods were refined and the content and format of the questionnaires was also slightly changed (see Section 3.5).

3.3 Selection and Description of Sample for the Main Study

The students were used as the main data source, rather than teachers, for the following reasons:

1. Students achieve better cognitive and affective outcomes in classes which they think have better classroom climates (Haertel, Walberg & Haertel, 1981; Fraser & Fisher, 1982a; 1982b; 1983; 1986, Fraser, 1998).
2. Students' perceptions usually vary from teachers' perceptions of teacher style and classroom environment (Levy, Wubbels & Brekelmans, 1992; Fraser 1998).
3. Students' perceptions of teacher communication style are a better predictor of student achievement than teachers' own perceptions (Levy, Wubbels & Brekelmans, 1992; Fisher, Fraser & Wubbels, 1993)

One other researcher (Battern, 1993) also commented that:

The student perspective on teaching and learning is too often neglected or underrated in educational research. ... Underneath the negative and nonchalant veneer sometimes lies real discernment and perception; if probed, students will often give considered and insightful opinions on teaching and learning, based on their many years of experience in the classroom (p. 11).

To ensure a cross-sectional sample of Tasmanian students' transition experiences, a range of secondary schools was selected to provide representative examples across the range of school sizes, structures and geographical situations (country, urban, isolated). Government and independent (Catholic and non-Catholic) schools were also selected within the sample. Non-mainstream schools providing for students with specific physical

and/or intellectual needs were not included as most of these had an alternative curriculum and often did not include a transition structure. The sample as selected resulted in a total of 16 secondary schools being approached to participate. The acceptance rate by these schools was 100%.

Initial contact was made with secondary schools via an introductory letter (see Appendix C) and a follow-up telephone call to each principal. Then, in most instances, the request was taken to a staff meeting for discussion and a decision. Researcher contact after this initial stage was usually directly with the member of staff given responsibility for the grade 7 year intake or, more usually in the smaller schools, the vice-principal.

Once positive responses were gained from the secondary schools, a list of the feeder schools for each was obtained from them. This list included all primary schools that fed directly into the secondary school concerned as well as any other schools that contributed consistently to their intake. This resulted in a list of 49 primary schools. Each of these schools was contacted in the same way as the secondary schools, with the initial letter indicating that the school had been nominated as a feeder school by one of the participating secondary schools. Only two of the primary schools declined to participate, one because it had no students intending to go to the identified secondary school in the transition year of the study (and therefore falling outside of the relevant population), and the second because it was undergoing a major restructuring during that year, and was at a stage of delicate community negotiations. (This particular school trialed a middle school structure the following year involving moving the grade 6 classes onto the secondary school campus.) The Principal expressed regret that this school could not participate, suggesting that at any other time he would have been willing for the school to participate. Again,

with the primary schools, most contact beyond this initial stage was directly with the teacher responsible for the grade 6 year group.

The final sample comprised a total 16 secondary schools and 47 linked primary schools. The number of primary schools per linked secondary ranged from a minimum of one to a maximum of seven (although some of these were quite small cohorts).

The virtual 100% school response rate ensured that the range of schools types and transitional experiences desired was included. Prior to the data-collection phase, a notice was published in each school newsletter describing the study and identifying specific student groups that would be involved along with a contact number of the researcher if more information was required. Parents were also asked in this notice to notify the school year group co-ordinator if they did not wish their child to be a participant. No withdrawals were forthcoming. Consequently, the only non-participants in the study were any students who happened to be absent on the day of data collection. This absence represented no more than a handful from a total sample of 1 500 students (approximately 40 in total across the two administrations).

The 16 secondary schools selected for the study comprised:

1. a Catholic independent school which was the linked secondary school for all Catholic primary schools within Tasmania's second largest city. This school had a grade 7 intake coming largely from these primary schools.
2. a non-Catholic independent school, which was a boarding school with a Christian Protestant ethic, again located in a regional city. The intake here, however, was from both city and rural primary schools.

3. other secondary government schools consisting of both grade 7 to grade 10 schools and district schools. (District schools offer Kindergarten to grade 10 or 11 and usually serve rural or remote districts. Although under the jurisdiction of a single Principal, the primary and secondary sectors may function with considerable autonomy and the secondary sector often receives students from other primary schools.) These government schools included:

- two urban/suburban schools situated within the capital city. One of these had a total intake of city students, and the other had a mixture of city and country students.
- three urban/suburban schools in the state's second largest city selected to represent a complete range of socio-economic groups within the city. This group included the pilot school.
- one school in each of the other two main regional centres within the state, both having a wide range of city/town and country feeder schools.
- one school in a relatively isolated rural regional centre, again having a considerable spread of feeder schools.
- one school located in a country town not far from a main city.
- one secondary school located in a geographically isolated regional centre (a mining town).
- six district schools, two of which were classified as isolated (one mining centre/one on a Bass Strait Island) and four classified as rural (both coastal and inland). Three of the district schools had their own primary base as the sole feeder, whereas the others included one to three additional external feeder primary schools.

The secondary schools ranged in size from a year 7 intake of just over 20 to almost 200 students.

The primary schools represented a similar range geographically to the secondary schools described above, and ranged in size from an exiting grade 6 cohort of 4 students to around 100 students. This primary school sample also included one country and one isolated independent Catholic school, which mainly feeds into the local district or high school. As mentioned earlier, all transiting students from these schools, with the exception of absentees, participated in the study.

The two administrations of the questionnaire resulted in approximately 3 000 individual responses (approximately 1 500 on each of the two occasions). From these, the following were discarded:

1. Any responses that were illegible (approximately 100 in each of the grade 6 and grade 7 groups).
2. Any responses that did not have at least three of the four sections totally completed (resulting in the deletion of approximately 100-150 responses for each administration).
3. Any responses that did not result in a matching pair of pre-transition and post-transition questionnaires for individual student participants (approximately 200 responses).

This left a complete, paired questionnaire response for 1 040 students (2 080 questionnaires). As the rejected questionnaires came from across the entire

range of schools, the final group was still reasonably representative of the schools initially selected.

3.4 Procedures for Data Collection

Data collection consisted of two administrations of a four-part questionnaire, once in the latter part of grade 6 (early December) and with the follow-up early in grade 7 (April/May). To ensure optimal consistency during the data-collection phase, all questionnaires were administered on site by the researcher personally. Administration by the researcher ensured that all students' questions were dealt with in similar ways, and that information for interpretation of questions and items within the questionnaire was delivered in a similar manner with consistent language and intent. It was also felt that, as some items reflected upon the teacher and the school, students might be more forthcoming if dealing directly with an external agent. The initial feedback from follow-up interviews with selected students during the pilot confirmed this. These procedures allow for a high level of confidence in the quality of the raw data collected.

When completing the first section (the open-ended questions) of the questionnaire, that was designed to elicit qualitative data, each question was read and discussed at a group level briefly to encourage student reflection and to provide a greater diversity of responses. For many of these questions, students were asked to list "as many things as you can think of" that are appropriate to the issue. Students were also encouraged to expand upon answers and give qualification/clarification if they felt it to be important. Within the pilot study, this approach was trialed along with individual and small-group interviews. It was found that this "group discussion/written response" approach provided good-quality data in a much shorter time frame than

individual or small-group interviews as it was workable with whole-class groups.

As confidentiality was paramount, the researcher started each administration session with a discussion of the study's meaning and purpose as well as a clarification of the degree of confidentiality that the students would have. Students were told that the school and teachers would receive a summary of the findings, but would not have access to any individual student's responses. This was consistent with the prior agreement reached with schools. As the researcher is also a certificated teacher, it was possible for the normal class teacher to leave the room during each session. A short questionnaire was given to the teacher to complete during this time to gain general background information about the class, school and cluster group.

The questionnaire for the primary students was designed to take an average student about 45 minutes to complete. Once the majority of students were finished, they were thanked and allowed to go on with normal work, or to return to the class teacher in another area (usually the classroom if administration was completed in the library as it was on some occasions - particularly if dealing with a composite class. Many of the smaller primary schools had composite classes including more than one year group). This gave the researcher time to help slower students through the more difficult sections of the questionnaire. For low-ability students, answers were given verbally and written onto the questionnaire by the researcher. This procedure meant that nearly all students completed all sections.

The secondary school questionnaire was virtually the same as the primary school version, although familiarity and student development meant that it took the average student around 40 minutes to complete. This allowed questionnaire

administration to fit neatly into a normal daily timetabled lesson, a design factor which drew favourable comment from teachers and school administrators. As composite classes did not exist in secondary schools, all administrations were done in normal timetabled classrooms. In the secondary school situation, prior arrangement had been so that students needing more time stayed after the lesson, while the majority moved on to the next class.

The questionnaires were usually administered in class groups, sometimes in the classroom, but more frequently (for the primary classes) in the school library. Students seemed comfortable and unthreatened in these surroundings. Students were constantly reminded that it was not a “test” and that there were no right or wrong answers. They were also told that spelling and expression were not critical as long as the researcher could read and understand what they intended to say. It was also emphasised that their individual thoughts and experiences were important and that care should be taken to ensure they did not simply copy the responses of neighbours.

For the MCI and QTI parts of the questionnaire (see Sections 2.4 & 2.5), students were asked to complete for *My Class* and *My Teacher*. Some primary students suggested that they had more than one of each. In this case, students were instructed to fill it in for the one (class group or teacher) which/who they had for the majority of the time. If it was a 50% split, students were asked to choose the one which they felt to be most influential for them. (This occurred in rare instances, usually where the principal had a part teaching load.)

When the repeat administration was done in grade 7 classes, most students remembered both the researcher and the nature of the research being undertaken. Many students were keen to discuss their transition and early high school experiences as soon as contact was made in the secondary context. This

recognition also meant that less time was required to explain the intention of various questions.

The entire data collection phase was completed with very little deviation from the research plan, thus resulting in very little inconsistency being introduced between different school groups.

3.5 The Structure and Content of the Instruments Used

One intention of the study methodologically was to blend qualitative approaches with quantitative ones. Researchers (Howe, 1988; Fraser & Tobin, 1991; Tobin & Fraser, 1998) suggested that a combination of qualitative and quantitative methods can be desirable. Fraser and Tobin (1991) claimed that combining qualitative and quantitative methods has several potential advantages in learning environment research:

First, the complementarity of qualitative observational data and quantitative classroom environment data added to the richness of the data base as a whole. Second, the use of classroom environment questionnaires provided an important source of students' views of their classrooms. ... Third, through a triangulation of quantitative classroom climate data and other qualitative information, greater credibility could be placed in findings because they emerged consistently from data obtained using a range of different data collection methods. Clearly, a confluence of qualitative and quantitative methods is a desirable future direction for research on learning environments (pp. 290-291).

Within this particular study, qualitative data were included for triangulation purposes, as well as to help with interpretation where statistical complexities could give rise to unclear or ambiguous outcomes from the quantitative data (some of these had arisen from the pilot sample data).

The challenge in this study was to employ meaningful qualitative methods with such a large and widespread sample. In part, the pilot study was used to experiment with ways of gaining some qualitative insights into the transitional process across the full sample.

In the pilot study, open-ended questions were included in the questionnaire to gain a greater diversity of student responses while allowing for an individual focus. To check how students had interpreted these questions, and their effectiveness in meeting this overall objective, follow-up interviews were conducted with randomly selected students. After this feedback, questions were rewritten and the mode of delivery adapted to try and elicit responses within the group administration more in line with those obtained through interview techniques. This section of the questionnaire was then trialed again with different class groups within the pilot sample, and further follow-up interviews were conducted. After these trials, it was found that the way in which the questions were presented to the group had an influence on the diversity and depth of student responses. The method that gave results closest to those obtained using interview techniques was to deliver the questions as if it were a group interview/discussion and then to get students to write down their own individual responses. The discussion that preceded the written answers was controlled carefully so that it explored the range of interpretations of the question, rather than inviting students to forward actual responses. The latter, if allowed to occur, often resulted in students merely writing down some response already offered rather than contributing their own, truly individual ones. Once the rules of the process were clear to students, they carefully withheld their own responses until writing them down. One factor that clearly helped here was the students' positive response to the message that their personal thoughts and experiences were very important to the researcher. Students were obviously proud to be asked for their views in such an important

context. It was also clear that the transition was an important event at that time in their lives and that they had many thoughts and feelings relating to it.

After trying out several methods during the pilot study, a method for introducing and discussing the study and the questionnaire items was devised that provided a depth and range of student responses similar to those gained through interview. This method was carefully and consistently employed with every student group in the main study. Certainly, the data gathered in this way reflected the advantages described by Fraser and Tobin. It was rich and diverse and would be used with triangulation techniques to provide greater insight into patterns of responses gained through the quantitative instruments alone.

The remaining sections of the questionnaire employed more standard quantitative data-gathering techniques requiring responses on a five-point scale or a yes/no/sometimes response to a specific item measuring a predetermined scale. The quantitative sections of the questionnaire were identical to, or slight variations of, pre-existing, validated instruments (as described in Chapter 2). For examples of the grade 6 and grade 7 questionnaires as used in the study, refer to Appendix A and Appendix B.

One problem that arose in the overall design of the study was related to the degree of change across transition, in particular, the changes in school groupings, class groupings, teachers and classroom settings. Longitudinal experimental designs that use learning environment instruments rarely include changes that are as disruptive to contexts and groupings as those occurring across transition.. Most are to some degree “controlled intervention” studies, where a pre-determined change is made and student groups remain constant.

In this study, the intervening stage was a major disruption involving, in some instances, complete class group discontinuity for some students. Apart from changes in class membership, students moved from a generalist class to a series of specialist classes. For the vast majority, students had a constant grade 6 class, teacher and classroom regardless of the subject being studied. The pilot study demonstrated that it was meaningless to ask “What is your science class like?” as opposed to “What is your spelling class like?” in a primary school context. Therefore the actual version of the grade 6 questionnaire referred to students’ general “all subjects” classroom environment. In grade 7, the situation was quite different. Most schools had timetabled classes that almost certainly created changes in rooms and teachers and, in some instances (although rarely), even the student composition of the class. Asking an equivalent question “What is my grade 7 class like?” as a general concept proved problematic and rather meaningless. As most grade 7 classes experienced between 7 and 13 different classroom/teacher designations, it was impossible to gain complete data for each from every student. This problem was resolved, at least to a satisfactory degree, as follows:

- As science was to be a key focus of the study, as an example of a subject with considerable specialisation of environment in grade 7 as opposed to grade 6, all students completed an “actual” form (MCI and QTI; see Sections 3.7 & 3.8) for their science class.
- Each student had a colour code on the top of his/her second copy of the MCI and QTI to designate which other subject (of the group commonly studied) for which he/she had to complete a second “actual” form. This was allocated by the researcher so that the subject distribution was random, but so that each subject received an equal number of responses across each class/school. This at

least made it possible to gain a cross-sectional range of data for all grade 7 classes and teachers.

- Both the MCI and the QTI were used in both the “actual” (as described above) and “ideal” or “preferred” versions (see Section 2.4.4). The ideal version was included to allow for comparison with changes in actual classroom perceptions across transition. Such comparisons were used to determine whether the changes were “positive” or “negative” in nature.

There still existed some methodological concern regarding this design, due mainly to the degree of inconsistencies between groups being compared and the large number of variables being considered. The intention of the study was to compare (in relatively gross terms) students’ perceptions of generalist primary classes with specialist secondary classes (particularly science classes). This comparison was done in conjunction with the students’ perceived ideal class and a considerable amount of supportive qualitative data. This design, although not perfect, would be as valid as any possible within the context of such a complex change. The same design issues applied for data from the *My Class Inventory (MCI)* and the *Questionnaire on Teacher Interaction (QTI)*.

The following sections consider, in turn, each of the various subsections of the four-part questionnaires. In Section 3.6 the open-ended questions designed to elicit qualitative findings are considered. Section 3.7 contains an outline of the section of the questionnaires designed to establish students’ subject preferences, while Section 3.8 contains a discussion of the MCI and Section 3.9 the QTI parts of the questionnaires.

3.6 The Qualitative Questions

A range of open-ended questions were included in the questionnaires to gain general background information concerning students' feelings about school, social groupings, teachers, primary/secondary transition issues, and so on. These questions were refined during the pilot study as was the method of administration. Appendices A and B include these questions as they appeared within the questionnaires.

3.6.1 The Grade 6 Questions

The questions in this section were as follows:

- Do you like school?
- Do you think you are good at schoolwork?
- What do you like about this school?
- Can you think of one word or statement that could describe this school best?
- What do you like about your teacher?
- Think of the students in grade 6 who are most popular with the teachers. Why do you think they are so popular?
- Think of the students in grade 6 who are most popular with the other students. Why do you think they are so popular?
- What sort of things do you commonly get into trouble for at this school?
- What sort of thing do you commonly get praise for at this school?
- What are you frightened of concerned about most at the thought of going to high school?
- What are you excited about most?
- How do you think being at high school will be different from primary school? (Write as many things as you can think of.)

- Think back over primary school. Name the two things that you did at school that you enjoyed most. (Not necessarily studies)

3.6.2 The Grade 7 Questions

The questions in this section were as follows:

- Do you like high school?
- Do you think you are good at the schoolwork you do here?
- What do you like about high school?
- Can you think of one word or statement that could describe high school best?
- How do high school teachers differ from grade six teachers?
- Think of the students in grade 7 who are most popular with the teachers. Why do you think they are so popular?
- Think of the students in grade 7 who are most popular with the other students. Why do you think they are so popular?
- What sort of things do you commonly get into trouble for at this school?
- What sort of thing do you commonly get praise for at this school?
- What has frightened or concerned you most about being at high school so far?
- What have been the exciting things?
- What do you miss about primary school

The range of questions were designed to gain some insight into how individual students perceived:

1. their schools in both an educational and cultural sense;
2. themselves within that school context;

3. their teachers, their methods and priorities;
4. what transition to secondary school might be/was like, particularly in relation to areas of concern and excitement;
5. what being at high school will be/was like; and
6. memories of influential aspects of primary school, both upon leaving primary school and upon reflecting back on it once the student had commenced secondary school.

Questions were delivered in a way that was as open as possible. For example, when students were asked the question, “What sort of things do you commonly get into trouble for in this school?”, they were invited to comment on all aspects of the school, classes, the playground, excursions, etc. and to list “as many things as you can think of that might relate to the question”.

The questions in the grade 7 questionnaire were kept as close as possible in wording and explanation to the grade 6 equivalent. The reason for this was, as questionnaires were all to be paired for comparison, changes in students’ thinking/feeling about the issues could be determined more readily and accurately.

3.7 The Subject Rating Section of the Questionnaire

The second section of the questionnaires (Appendices A & B) was designed to provide insight into changes in students attitudes towards the various subject strands of the curriculum. This information, as well as contributing to an understanding of changes over transition generally, was considered along with measured changes in learning environment perceptions to determine if trends were parallel (ie. more negative view of the learning environment was concurrent with a more negative attitude to the subject).

In the pilot study, in the first version of the questionnaire trialed, a series of scales was included to allow students to rate their like/dislike of each subject in the curriculum separately. Because of the large number of subjects (bearing in mind that primary school “English language”, for example, consists of spelling, reading, writing and perhaps even library), this proved to be time consuming and cumbersome to administer (not to mention confusing for students). Beyond that, the sheer quantity of space required meant that a lot of paper was needed, and that the questionnaire became so large that students found it somewhat threatening.

Several variations were trialed and resulted in a condensed, single scale to cover every subject (see Figure 3.1).

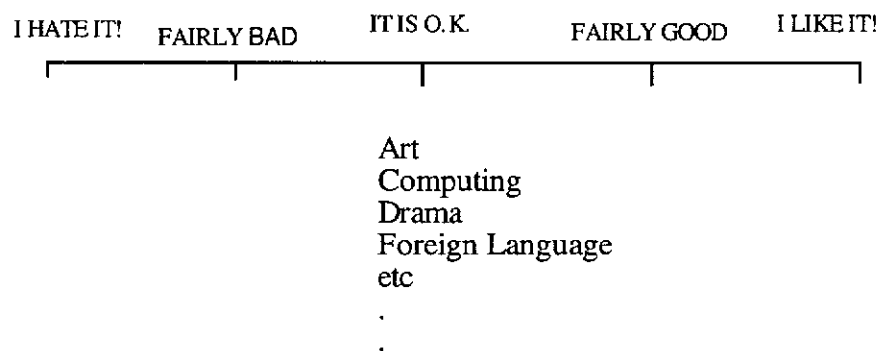


Figure 3.1 Format of the Subject Rating Scale

The revised questionnaire contained one scale line, and a complete list of all possible subjects written in a column below the five-point scale (as in Figure 3.1). Students were directed to cross out any subjects that they did not study in their school/class or to add any that were missing. These changes were based upon a class consensus after a brief class discussion. Then, students were asked to draw a single arrow line from each subject listed to what they thought was the relevant spot (for them personally) on the line above. Although some

of the results were graphically a little “spaghetti” like (see Appendix D for a completed example), it was not difficult to identify the location for each subject on the scale and it reduced several pages of questionnaire to one page. In later administrations (after the pilot study), students were asked to use different colours for each subject if possible. This proved to be a non-threatening and time-efficient way to gain this information in a valid way. Students reported that they particularly enjoyed answering this part of the questionnaire.

The grade 6 and 7 versions of the questionnaire contained the same scale, but with slightly different of subjects listed beneath. This created some comparison difficulties once the questionnaire responses were paired, particularly in “multi-strand” subjects such as English, technology etc. However, it provided accurate information on students’ dislikes/likes within each year. Comparisons, pre and post transition, could easily be made for most subjects such as mathematics and science for which the name and defining characteristics were consistent across the two grades. As the major reason for inclusion of these data was to compare science to other subject areas, within a given grade, this objective could certainly be met in a valid way.

3.8 Assessing Learning Environments with the *My Class Inventory (MCI)*

The third section of each questionnaire was designed to collect data related to changes in students’ perceptions of the learning environment, particularly about the elements of the classroom climate as defined by the *My Class Inventory* (see Section 2.4.4).

The *My Class Inventory (MCI)* is a variation of the *Learning Environment Inventory (LEI)* (Fisher & Fraser, 1981), reduced to five scales (*Cohesiveness*,

Friction, Satisfaction, Difficulty and Competitiveness) (for complete background see Section 2.4). The MCI has been specifically developed for use with upper primary grades and has been used satisfactorily with junior secondary classes. The form used in this study has a total of 38 items, employing between 6 and 9 items per scale. Students complete the item by choosing a yes or no answer. For some items, the scoring is reversed. Students in the study reported that their preferred answer for some items would have been a “sometimes” option, but this choice was not included in the questionnaire. For example, for the item “School work is hard to do”, many students suggested that an accurate response depended upon the context/subject. To deal with this, students were instructed to choose the option offered that they felt was the most representative for their subjects in general. The pilot study verified that neither readability nor question reversals were problems with students of this age, particularly as the researcher was available to answer questions and give assistance. Student responses were written on the questionnaire itself, which was designed in this way to “minimise fatigue and errors in transferring responses from the questionnaire to a separate response sheet” (Fraser, 1986a, p. 29).

In the pilot study, the ideal version was used in both the grade 6 and 7 samples, but it was found that, because the time frame between administration was only around 16 school weeks (excluding summer holidays) and the student sample used was identical, individual “ideal” responses did not alter substantially. For this reason, and to reduce the overall bulk of the questionnaire, the ideal section was omitted from the grade 7 version in the main study. It is usual in longitudinal “pre-intervention/post-intervention” studies which use instruments such as the MCI to administer the ideal version only once, most commonly at the pre-intervention stage (Fraser 1986a, pp. 168-181).

The MCI section of the questionnaire is described below. The section described as My Class Inventory (Actual) was completed for students' current grade 6 classroom environment. Also the *My Class Inventory (Preferred)* section was completed with their ideal classroom in mind. In grade 7, the section titled My Science Class (Actual) was completed for students' current science classroom environment. Also the My "Other" Class (Actual) section was completed for one other designated subject classroom. The "other" subject was allocated randomly by the researcher to get an approximately equal representation for each subject within any given class group. This distribution ensured that the two questionnaires (grade 6 & 7) remained of approximately equal length while providing a maximum amount of information.

As a result of this organisation, each student completed the MCI four times for:

- their "ideal" class whilst in grade 6;
- their grade 6 "actual" class;
- their grade 7 science "actual" class; and
- one other grade 7 "actual" class from the list of subjects commonly studied in grade 7 and randomly allocated by the researcher.

The fourth and final part of each questionnaire was designed to measure students' perceived changes in teacher interpersonal style as defined by the *Questionnaire on Teacher Interaction (QTI)*. This part of the questionnaire is discussed in the next section.

3.9 Assessing Teacher Interpersonal Style with the *Questionnaire on Teacher Interaction (QTI)*

The component of the classroom environment involving the teacher and student interpersonal relationship component was measured using a short version of the *Questionnaire on Teacher Interaction (QTI)* (Wubbels, Brekelmans, &

Hermans, 1987; Wubbels, Creton, Levy & Hooymayers, 1993). Specifically the QTI was designed to measure eight aspects of teacher interpersonal style, in this instance as perceived by the students. The eight aspects are teacher *Leadership, Helpfulness/Friendliness, Understanding, Student Responsibility/Freedom, Uncertainty, Dissatisfaction, Admonishment* and *Strictness* (see Section 2.5 for complete background).

As with the MCI, similar problems existed in relation to the QTI because of major changes in class membership and the number of teachers with whom students had contact across transition. Again students completed both actual (My Teacher) and ideal (My Best Teacher) versions (with the same teacher combinations as for their classrooms when using the MCI).

In grade 6, students completed the “My Grade 6 Teacher” (Actual), for their current grade 6 teacher, and the version for “My Best Teacher” (Preferred), with their ideal/best ever teacher in mind. In grade 7, students completed the “My Science Teacher” (Actual), for their current science teacher and the “My Other Teacher” (Actual) for one other subject teacher randomly allocated by the researcher. The “Other” teacher was linked to the subject allocated in the classroom section of the questionnaire earlier (that is, the MCI data). This meant that each student had a matching classroom and teacher perception response for science and for one other subject.

Consequently, for each participant, the following QTI data were obtained for:

- their ideal class/teacher whilst in grade 6;
- their grade 6 “actual” class/teacher;
- their grade 7 science “actual” class/teacher;
- one other grade 7 “actual” class/teacher from the list of subjects commonly studied in grade 7 and randomly allocated by the researcher (as for MCI).

Some of the language in the version of the QTI used proved problematic, not because of the level of understanding, but rather because of ambiguities arising from common colloquial or local usage of key terms within some items. One misinterpretation was made by the researcher, and several automatically by a majority of students. Although the researcher's misinterpretation was clarified during the pilot study, the extent of the students' misinterpretation was not realised in these pilot trials because the colloquial language creating the greatest misinterpretation was not in fashion at that time (one year earlier), at least not within the trial school.

The misinterpretation problems became clear as soon as administration in the main study began through discussions with the first groups of students who completed the questionnaire. From this point on, the problem was countered by clearly explaining the intended interpretation of the relevant items during administration. In spite of this, some of these items were still comparatively "weak" in terms of their correlations with their scale scores (see Section 3.5). Discussions with a Dutch member of Wubbels' research team helped to clarify the cause of many of the more subtle problems.

The two scales containing items with the greatest problems were *Strict* and *Student Responsibility/Freedom*. Item by item, the questionnaire was reinterpreted from the Dutch with particular attention given to the problematic items. Although the QTI had already been used extensively and validated within Australia and the USA, some previously undocumented language discrepancies became apparent. In the Dutch language, the term *Student Responsibility/Freedom* was interpreted broadly as students who *took the initiative away from the teacher* (ie. teacher submission to the desires of the students). In the local context, this association was the interpretation of neither

the researcher nor the students. Rather, within the Tasmanian context, teachers often consciously *work towards* developing *Student Responsibility/Freedom* as part of their development of independent learning and/or positive behaviour management strategies. It is certainly not necessarily interpreted as teacher submission as the instrument attempted to be measuring. Often it was the reverse, that is, a form of student empowerment through a conscious style of teacher leadership. Individual items allowed for this misinterpretation, and one consequence of this was an overall weakness of the scale. The translation in the questionnaire was a valid one in straight language terms, but did not take into account local usage/interpretation.

The second weak scale also proved to contain items for which the Dutch/English translation, in an Australian context at least, could be somewhat ambiguous. One key term in these items was "*fool*" as in "*to act the fool*". Responses suggested that interpretation of the word in the Tasmanian context was different from that of American students (the major English language validation trials having been completed in the USA). The Tasmanian interpretation was a lot less negative. For example, to *act the fool with the teacher* is not necessarily the same as to *misbehave on the teacher*, as the American (and Dutch) students apparently interpret it. Within Australia, at least within this Tasmanian sample, it was interpreted as "*having some condoned and positive fun with the teacher*" (perhaps as a reward and therefore an educationally positive event). The ambiguity associated with this word considerably weakened the *Strict* scale as a whole, in the version used, as it appeared in three of the six items of the scale.

Another item resulting in misinterpretation was, "*This teacher is interested in me*". The intended meaning is that the teacher has a caring attitude towards the student. Contemporary usage of "*interested in me*" for students within this

study sample had definite and strong sexual undertones (particularly when in grade 7). The students' first reaction to the item was to laugh. This item presented no major problem for the study, however, as the misinterpretation was so obvious, even to the students, that it was readily cleared up.

Since this study was undertaken, considerable effort has been made to clarify the language of the QTI within the Australian context, particularly with locally devised variations and cross-cultural studies (Goh & Fraser, 1996; Fisher & Rickards, 1997; Fisher, Rickards, Goh & Wong, 1997). In this study, however, if the researcher had not been present during the administration of all questionnaires, and aware of the potential problems, the inevitable misinterpretations could have undermined the value of the data.

The QTI data are open to the same methodological scepticism as the MCI data as they also were used pre/post across the transition, with the resultant changes in class groupings and teacher exposures. Again data collection provided the best option possible and qualitative data were gathered to provide support.

3.10 Data Organisation

The responses to the open-question section of the questionnaire were transferred to spreadsheets. Some form of quantification was unavoidable because of the sheer bulk of information. However, to maximise the benefits of qualitative data input, the overall "flavour" of the data was preserved as much as possible. Responses to each question were transferred to large spreadsheets in a summary form. This summary was undertaken in such a way as to preserve as much of the initial statement as possible by, for example, using key words and phrases as descriptors. Once responses to each question were listed in this way, they were grouped according to the basic focus of a

given set of responses. This was not as difficult as it could have been, because the majority of student responses clearly fell into categories, often even using the same language. A typical pattern was for 80-90% of the responses to fit into an easily defined category arising from the wording of the responses themselves, with the remaining 10-20% providing considerable diversity. Where the key message was similar, but the description or language used was not, responses were also grouped together with representative phrases or responses retained as a “descriptor” of the grouping. Where truly unique responses to questions were found, these were listed individually.

Responses that could be categorised were then quantified to a degree. For example, in response to the question “Use one word that could describe this school”, one response category was “descriptions of size/space”. This included responses such as roomy, spacious, etc. Altogether there were 13 responses that fitted into this category, representing 1.3% of the total response to this question. These entries were “tallied” with one column per school and colour coded for male/female. This allowed a much more detailed interpretation. Using the “word for school” question as an example again, a given response category (such as description of size/space) came from 7 out of 47 primary schools, with almost twice as many girls as boys giving the particular response. Using this format and colour coding, school and gender-based patterns could easily be determined. (An abbreviated example of the format of these spreadsheets is included in Appendix E.)

The grade 6 and 7 responses were recorded separately, but consistency of categories was retained where appropriate to allow for cross-grade comparisons. For example, from the “word for school” question in grade 7, 13% of responses were in the “descriptions of size/space” group (compared to the 1.3% in grade 6). Descriptions again included “big”, “bigger”, “space”, etc., which also clearly fitted the earlier defined category. Answers in this

category represented students from all but 9 of the feeder primary schools. Overall, 34% more girls than boys provided responses within this category. Using this methodology, a clear interpretation arising from these data was that, when the students encountered secondary schools, many noticed an increase in size and space, and this was a perception of girls more than of boys. This spreadsheet format allowed for the identification of many such patterns within students' perceptions and priorities during the transition from primary school to secondary school.

All responses to open questions were collated in a similar way. When using this information during the analysis stage, every effort was made to represent not just the quantity of responses, but also their range and overall "flavour". To this end, the language of the students themselves was used wherever possible in descriptions and naming of categories and it was retained in summaries presented in Chapter 4 of this thesis.

The data gained from the questions such as "Do you like school?" and "Are you good at schoolwork?", in the section of the questionnaire which involved students rating each subject, as well as MCI and QTI data, were transferred onto a computer database which included coding for student, school (primary and secondary), student sex, teacher sex (in relevant sections), and subjects (in relevant sections). For an example of this coding see Appendix F (which contains the data entry for the two students). Missing data were coded 9. This data base was placed on an Microsoft spreadsheet and later transferred to a statistical analysis program (SPSS).

The next section outlines the validation procedures used for the MCI and the QTI within the context of the current study.

3.11 Validation of the *My Class Inventory (MCI)* and *Questionnaire on Teacher Interaction (QTI)*

Before data derived from either the My Class Inventory (MCI) or the Questionnaire on Teacher Interaction (QTI) were used in analyses aimed at testing research questions, validation procedures needed to be carried out. These procedures provide support for the validity and reliability of the instruments within this particular research context. This section describes the validation procedures that were used along with results of tests undertaken for this purpose. Section 3.11.1 discusses the selection of the appropriate unit of analysis, a complication within this study because of the changes to class and school membership across transition. Section 3.11.2 then details and discusses the validation procedures undertaken as well as providing the results from those procedures.

3.11.1 Units of Analysis

Individual students' scores as well as school means were used as the units for statistical analyses (that is, for instrument validation tests). The school mean rather than the class mean was chosen as the unit of analysis because, for most of the primary schools, there was only one grade 6 class and the school and class groups therefore were synonymous. In some cases, particularly in the smaller schools, the grade 6 students were spread over several composite classes including other grade levels, and so a class grouping would have been inappropriate. Within the secondary schools, class groupings were more regular, but students from any given primary feeder school were spread across all grade 7 classes (although they did all transfer to the same secondary school).

Both the actual and preferred responses for the MCI and QTI were used in validation tests and grade 6 and grade 7 data were analysed separately. If any items did not meet validation criteria, they were omitted from any later analyses.

3.11.2 Validation Procedures

The data obtained by the MCI and the QTI were subjected to similar validation tests as those used in their original development (see Sections 2.4.4 and 2.5.3). Comparisons were made with these previous validation data to determine scale validity within the context of this current study. Validation tests were completed separately for all four data sets obtained using the MCI and the QTI in the current study (grade 6 actual, grade 6 preferred, grade 7 science, grade 7 other subject).

Firstly, the correlation coefficient for each item with the other items in the same scale was calculated to determine the consistency of individual items with others within the same scale. Two items exhibited a very low correlation with others within the same scale and therefore were omitted before mean files, used for later analyses, were produced. These two items were:

- Item 28 from the *Difficulty* scale of the MCI: “Many pupils in the class would say that school is easy”.
- Item 16 from the *Strict* scale of the QTI: “This teacher lets us fool around”.

During the administration phase, students commented on both of these items and suggested that there was some ambiguity associated with them. Participants suggested that the MCI item 28 was difficult

because few found all of their schoolwork easy, but many found some aspects of it easy. This problem of differentiation was particularly evident in the grade 6 feedback. The QTI Item 16 caused interpretation difficulties in relation to the phrase “fool around”, this interpretation problem was discussed fully in Section 3.9.

Secondly, using retained items, Cronbach’s (1949) alpha coefficient was applied to both the individual and school mean files to assess each scale’s internal consistency (see Tables 3.1 & 3.2). This test compares variance in the item scores for each scale with the variance in the sum of those item scores to determine the internal consistency of items within a scale. For comparison with Fisher and Fraser’s (1981) validation information for the MCI, see Table 2.2. For comparison with previous validation data for the QTI (Wubbels & Levy, 1991), see Table 2.4.

Next, an intercorrelation matrix of all scales within the MCI was produced using the same two units of analysis (the individual and the school mean). The intercorrelation matrix provides an index of the discriminant validity of each scale (ie., the extent to which each scale measures a unique construct). The mean correlation of a scale with the other scales was used as a convenient index of discriminant validity as it was in the original validation of the MCI (Fraser 1986a, p. 31). Table 3.3 contains the data used to assess discriminant validity for each of the “actual” administrations within this study, as well as similar data from the original MCI validation (for this short version) which used the individual as the unit of analysis.

Table 3.1 Alpha Reliability for each MCI Scale for the Individual and School as the Units of Analysis

Sample	Unit of Analysis	Alpha Reliability				
		Satisf.	FRICT.	Diffic.	Cohes.	Compet.
Preferred (Grade 6)	Student	.83	.87	.63	.84	.78
	School	.84	.93	.49	.88	.80
Actual (Grade 6)	Student	.84	.69	.59	.74	.67
	School	.94	.81	.47	.86	.69
Science (Grade 7)	Student	.83	.76	.67	.76	.75
	School	.97	.95	.74	.93	.89
Others. (Grade 7)	Student	.86	.75	.74	.79	.76
	School	.81	.91	.81	.86	.91

Scales are, Satisfaction, Friction, Difficulty, Cohesiveness and Competitiveness. N=1040 Individuals; N= 47 Schools (grade 6) & 16 Schools (grade 7)

Table 3.2 Alpha Reliability for each QTI Scale for the Individual and School as the Units of Analysis

Sample	Unit of Analysis	Alpha Reliabilities							
		Lead. Strict	Help/F.	Under.	Res/F.	Uncert.	Dissat.	Admon.	
Best Teacher (Grade 6)	Student	.69	.73	.77	.66	.58	.67	.72	.66
	School	.72	.82	.85	.76	.57	.67	.71	.75
Actual Teacher (Grade 6)	Student	.73	.81	.80	.61	.60	.75	.79	.60
	School	.84	.85	.86	.68	.69	.78	.83	.66
Science Teacher (Grade 7)	Student	.76	.82	.81	.56	.65	.76	.80	.65
	School	.87	.87	.87	.62	.79	.82	.90	.71
Other Teacher (Grade 7)	Student	.80	.85	.86	.66	.71	.76	.80	.68
	School	.86	.74	.81	.72	.71	.82	.81	.45

Scales are Leadership, Helpful/Friendly, Understanding, Student Responsibility/Freedom, Uncertain, Dissatisfaction, Admonishment and Strict. N=1040 Individuals; N= 47 (grade 6 schools) & 16 (grade 7 schools)

Table 3.3 Discriminant Validity (Mean Correlation with other Scales) for each MCI Scale with Student and School as Units of Analysis

Scale	Unit of Analysis	Mean Correlation with other Scales			
		Current study			Fisher/Fraser validation
		Grade 6	7 Science	7 Other	
Satisfaction -	student	.36	.48	.47	.23
	school	.31	.46	.45	
Friction -	student	.37	.53	.51	.26
	school	.35	.55	.45	
Competitiveness -	student	.28	.44	.46	.10
	school	.27	.43	.44	
Difficulty -	student	.24	.34	.30	.14
	school	.22	.29	.24	
Cohesiveness -	student	.33	.38	.40	.20
	school	.31	.39	.39	

N= 1 040 for the individual student file, N = 47 for the school file (based upon primary school groupings). The Fisher/Fraser validation results are based upon an individual file of 2 305 students.

Although acceptable, the discriminant validity for the scales within the context of the current research is not as strong as in the Fisher and Fraser (1981) validation, particularly for *Friction*, *Satisfaction* and *Competitiveness* for which mean correlations with other scales were calculated to average 0.19, 0.21 and 0.25 higher when compared with each of the versions from this study (that is, the scales in this study exhibited reduced discriminant validity). Also, over all scales, discriminant validity of the grade 7 administrations is weaker than for the grade 6 administration by an average of 0.13. These high mean correlations would suggest that there is some overlap of interpretation of scales by the students within this study compared with earlier data (even though the instrument was identical to the one in the Fisher and Fraser validation). Complete scale correlations for the school mean

file data are included in Appendix G. When considered individually, scale intercorrelations for the MCI were stronger than would be anticipated (based on the earlier data), but correlation patterns were consistent with expectations based upon the underpinning concepts (e.g. *Cohesion* correlated negatively with *Friction*).

Discriminant validity is not relevant in the same way for the QTI, as scales are not expected to be totally independent when compared to adjacent ones within the two dimensional model (see Section 2.5). The QTI model suggests that each scale within it should exhibit a high positive correlation with those scales adjacent, a low positive with those not adjacent but in the same sector of the model and highly negative with those in opposite sectors. (For these complete scale intercorrelations, see Appendix G.) The correlations using the data from this study are as the model would predict, with scales correlating most strongly (and positively) with others in the same quadrant within the model and correlating negatively with scales within the opposite quadrant. The only scales not producing correlations in line with the model were *Strict* and, to a lesser extent *Student Responsibility/Freedom*. Although the correlations with adjacent scales are consistent with the model, they are weak in some cases. Each has a strong, positive correlation with one adjacent scale but not the other. It is not surprising that these two scales are the weakest, because they also proved to be the most problematic during the administration that is, a majority of queries from students about interpretation were directed at items from these scales. The inconsistent correlations suggests that some item interpretations were possibly different from what the model would assume. This variation in interpretation was noted during the administration phase and has

been discussed fully in Section 3.7. The relative weakness of these two scales, particularly *Student Responsibility/Freedom*, was in part due to problems with language and context.

The next section will deal with methods of data analysis employed for each of the research questions.

3.12 Statistical Analysis Methods

3.12.1 Research Question 1

How do male and female students perceive and describe the broad changes from primary to secondary school, including changing reactions to the subjects offered within the curriculum?

This question was answered using interpretive methods. To ensure low-inference summaries, students' language and response style were preserved to as great a degree as possible (see Sections 3.5 and 3.8).

To gain some insight into students' responses to the changes in curriculum across transition, the subject rating data (see Section 3.6) were used. Students were asked the question "How would you rate subject 'x'?" The initial student responses were placed on a scale ranging from "I hate it!" to "I like it!" (for an example see Appendix D). This analysis firstly involved quantifying individual responses from the scale (the particular subject) and transferring to a database. A response of "I hate it!" was given a score of 1, "fairly bad" a score of 2, "It is OK!" a score of 3, "fairly good" a score of 4 and "I love it!" a score of 5. Responses that fell between these were allocated a 1, 2, 3, 4 or 5 dependent upon where they fell. Using the set of student

scores for each subject, mean responses and standard deviations were calculated to enable comparisons across the range of subjects and between grades 6 and 7. Throughout the analyses of all data, the qualitative and quantitative data were synthesised whenever possible and appropriate, to provide a degree of triangulation. Tables of results relevant to this research question are included in Section 4.2.1.

As analyses for Research Questions 2, 3 and 4 are based upon the same general data sets (ie. the various administrations of the MCI and the QTI), and because later analysis stages for all three questions were dependent upon a preliminary MANOVA test, all three research questions are considered together in the next section.

3.12.2 Research Questions 2, 3 and 4

Research Question 2

Do students perceive changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 3

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition vary for student sex for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 4

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and 8 scales of the QTI) across transition vary for transition pathway (defined by school size) for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Using the MCI and QTI data set (with selected items omitted), a 3-way MANOVA with repeated measures on one factor was undertaken using the individual as the unit of analysis. The set of 13 learning environment dimensions (MCI and QTI) comprised the dependent variables, the transition trial (grade 6 versus grade 7 students' perceptions of these dimensions) was the repeated measures factor, and the two other factors were student sex and transition pathway as defined by school size.

This analysis yielded three main effects (transition trial, sex and school size pathway) and four interaction effects (trial x sex, trial x pathway, trial x sex by pathway and trial x sex x pathway). Of these seven effects, three effects are of central relevance to this study because they correspond to Research Questions 2, 3 and 4. The transition trial effect relates to Research Question 2 regarding changes in learning environments across transition. The trial x sex interaction is relevant to Research Question 3 regarding whether changes in environment across transition vary with student sex. The trial x pathway interaction provides information about whether changes in environment across transition depend upon the school size pathway (ie. Research Question 3). In addition, the three-way interaction is of

interest because the interpretation of the two-way interactions would not be meaningful in the presence of a significant three-way interaction.

The MANOVA was completed separately for the grade 6 actual with the grade 7 general subject actual, and then repeated for the grade 6 actual and grade 7 science actual as the repeated measures factor. Results for this MANOVA are reported in table 5.1. Although normally it would be misleading to consider the trial effect (changes in students' perceptions across transition) separately in the presence of significant trial x sex interactions and trial x pathway interactions, the trial effect was still considered separately in this instance because changes across transition for the entire sample was such an important question in the context of the present study. The interactions are discussed in detail in Chapter 5.

Next, as the multivariate test yielded statistically significant results (when Wilks' lambda criterion was used) for trial (change in perception over transition), the trial x student sex interaction, or the trial x school size (transition pathway) interaction, the corresponding three-way ANOVA was examined for each of the 13 learning environment dimensions (MCI & QTI) individually for the three effects of interest. Again this was done separately for the grade 6 actual to the grade 7 general subject actual data and for the grade 6 actual to grade 7 science actual data using the individual student score as the unit of analysis.

Finally a series of post hoc comparison procedures was used to help to interpret the pattern of results for the interactions. These final

procedures were selected to test further the findings relevant to Research Questions 3 and 4.

To increase confidence in interpretations of all statistical results, qualitative data were also used (see Section 3.6).

3.13 Chapter Summary

This chapter outlined the methodologies employed at each stage of the study. In particular, the chapter established procedures for collection, organisation and analysis of the qualitative and quantitative data that form the basis of the study. Initially a pilot study was conducted to establish the best questions and procedures to gain meaningful qualitative data from a large cohort of transition students utilising a questionnaire. A pilot was necessary to clarify procedures because of complexities arising from the number of students included in the main study and the nature of the longitudinal pre-transition to post-transition structure of the study. The main study sample included 1 500 grade 6 students from a representative cross section of Tasmanian schools and tracked them across the transition into secondary school. Data were gathered just prior to the transition and again after an initial “settling in” period (about 10 weeks) in secondary school.

Questionnaires were used at both data gathering stages, but all were administered on the respective school sites by the researcher. The questionnaires used for the pre and post transition stages were very similar with only minor changes to allow for the different context in which they were delivered. The questionnaires contained four main sections. Section one contained open questions designed to gain qualitative insights into students’ perceptions of school, teachers, the curriculum and the transitional process.

The second section contained a variation of a five-point scale which was designed to allow students to rank each of the subjects encountered in grade 6 and early grade 7 in terms of their enjoyment. The remaining two sections were designed to collect quantitative data relevant to the study, specifically data related to students' learning environment perceptions. The first of these sections used two versions of the *My Class Inventory (MCI)*, an instrument designed to measure students' perceptions of five specific learning environment dimensions, specifically *Satisfaction, Cohesiveness, Friction, Competition and Difficulty*. The two versions used were for the students' grade 6 actual teacher and their grade 6 preferred teacher for the grade 6 administration, and grade 7 general subject classes (actual) and grade 7 science classes (actual) for the grade 7 administration.

The final section of the questionnaire used two versions of the *Questionnaire on Teacher Interaction (QTI)*, an instrument designed to measure the students' perceptions of their teacher's interpersonal style. Again, the grade 6 administration used an actual and a preferred (or "best teacher") version and the grade 7 administration a general actual teacher version (My --- Teacher) and an actual science teacher version (My Science Teacher).

The remaining sections of Chapter 3 detail procedures used to organise and analyse the data collected using the questionnaires. Qualitative data were categorised and transferred to large spreadsheets while the quantitative data were transferred to an IBM format database. Once on the database, preliminary validation and reliability tests were undertaken and ambiguous or inconsistent instrument items selected out. This final database was then used for all further analyses.

A preliminary three-way multivariate analysis (MANOVA) was conducted with the MCI and QTI data with the students' perceptions of the 13 learning environment dimensions scored as a repeated measures factor. Student sex and transition pathway (defined by school size) were the other factors. This preliminary analysis was followed by a combination of three-way ANOVA (for the same three effects) and *t*-test analyses for the interactions identified by the MANOVA as statistically significant. The *t*-test were used to help in the interpretation of the patterns within the results as were the qualitative findings.

Chapter 4 contains the results of the study relevant to Research Question 1, that is, students' general experiences, perceptions and changes in curriculum preferences during the primary to secondary school transition.

CHAPTER 4

RESULTS AND DISCUSSION 1: STUDENTS' GENERAL PERCEPTIONS AND EXPERIENCES ACROSS PRIMARY TO SECONDARY TRANSITION

4.1 Introduction

This chapter contains a report and discussion on the findings of this study concerning students' general perceptions and experiences prior to, during and after, the transition from primary to secondary school. These results are linked to Research Question 1, as explicitly as possible, to provide the chapter with an overall structure. The main sections within the chapter are based upon identified aspects during three key stages of the transition, that is, the "anticipatory" stage, the "transition" itself and the "ost-incorporation" stage or a stage where students are able to reflect back over the transition and "settling-in" periods. (see Section 2.2 for discussion on stages of transition). With the exception of curriculum preference comparisons, these aspects have an out-of-classroom focus and include students' perceptions of both the physical and non-physical school environment. Each of these aspects is considered in relation to the primary school (or pre-transition phase), and the secondary school (or post-transition phase) as well as including cross-school or transitional change comparisons.

Given the difficulty of presenting large and diverse amounts of qualitative data in raw format, findings that are included have been selected for relevance and are summarised as true to the flavour of the students' responses as possible. These data have been selected to provide insight into the experiences, perceptions and priorities of this cohort of students during the transition from primary to secondary school. The amount and variety of qualitative data, with relevance to Research Question 1, was extremely large and equated to around

20 spreadsheet summaries. The responses documented establish that influential student sex-based differences in perceptions exist, as well as the sexes having different overall priorities relating to interests and concerns during this critical phase of schooling.

Research Question 1 was as follows:

How do male and female students perceive and describe the broad changes from primary to secondary school, including changing reactions to the subjects offered within the curriculum?

Section 4.2 includes a detailed summary and discussion of findings arising from open questions asked of grade 6 students to determine their general perceptions of primary school. Issues considered include students' attitudes to school and their perceptions of the physical, social and cultural elements of primary school, including their own roles and priorities.

All of the results upon which the discussion was based represent the students' perceptions only. These were not compared with any other perceptions (e.g. teachers', researchers') within the context of this particular study. Students proved to be a very reliable data source and their comments were insightful and internally consistent. Transition and the move to secondary school proved to be of great importance for them and, as a consequence, they considered the questions asked of them seriously and demonstrated great interest in the study's outcomes.

Throughout the descriptions, words or phrases written in quotation marks indicate an actual term or quote in the words of the students themselves extracted from their responses. The language of the respondents has been

incorporated as much as possible. Verbatim quotes are used, so that errors in language usage or spelling were not corrected as long as meaning was not inhibited. Again this was done to retain as much of the essence of students' comments as possible. Students were not asked specifically to consider their particular sex when giving responses to questions, but sex differences do appear throughout the data. As these differences have relevance to later research questions, they are highlighted if appropriate.

Where responses are referred to as 'major', this indicates that more than 10% of the cohort gave some answer that could be grouped within that general category. If represented by a quotation from a student, the particular answer quoted was considered by the researcher to describe best what the respondents within the group were indicating. When a group response is written in the form "66% male", this indicates that 66% of the total sample that gave a similar response were male (and therefore only 34% female). If a group of responses is described as "mostly/majority girls" or "mostly/majority boys", this indicates that, within the response group, a sex difference existed in frequency of response of at least 25% of the total of such answers given (e.g. 25% more girls than boys).

Subsections 4.2.1, 4.2.2 and 4.2.3 all focus upon different aspects of students' primary school perceptions, specifically their attitude towards primary school, descriptions of their primary school and finally students' comments on perceptions of relevant social and cultural aspects of primary school.

Section 4.3 includes a report and discussion on students' responses to the same aspects of secondary school. Section 4.4 discusses students' comparisons of the two school systems in terms of their physical environments (Section 4.4.1),

their non-physical environments (Section 4.4.2) and organisational differences (Section 4.4.3).

Section 4.5 focuses upon students' perceptions of the transitional experience itself, specifically at the pre-transition stage (Section 4.5.1) and the post-transitional stage (Section 4.5.2). Section 4.5.3 reports on and discusses students' attitudes towards, and perceptions and descriptions of, primary school once they had 'settled in to secondary school. Finally, Section 4.5.4 identifies and categorises sex-based differences in students' responses to issues discussed in Sections 4.3, 4.4 and 4.5.

Section 4.6 in this chapter reports and discusses students' comments on, and ratings of, the various subject areas of the curriculum in primary school (Section 4.6.1), including their anticipation of secondary school curriculum (Section 4.6.2), and the secondary school curriculum once it had been experienced (4.6.3). Section 4.6.4 discusses these curriculum issues and perceptions within the overall context of transition-related change.

The final section in the chapter (Section 4.7) provides a summary of key points raised.

4.2 Students' Perceptions of Primary School Environments Prior to Transition: Physical, Social and Cultural Dimensions

This section (4.2) considers students' self-perceived 'liking' of primary school (4.2.1), descriptions of their particular primary school, both physically (4.2.2) and non-physically (4.2.3), as well as their view of some of the social dynamics within their school (4.2.4). Results from section two of the grade 6 and grade 7 questionnaires are also discussed later in Section 4.2.5. This part

of the questionnaire asked students to rate their liking of each subject which they studied on a five-point scale (see Section 3.6).

Grade 6 questionnaire items with direct relevance to general primary school issues considered included:

- Do you like school?
- What do you like about this school?
- Can you think of one word or statement that could describe this school best?
- Think of the students in grade 6 who are most popular with the other students. Why do you think they are so popular?
- What sort of things do you commonly get into trouble for at this school?
- What sort of thing do you commonly get praise for at this school?
- Think back over primary school. Name the two things that you did at school that you enjoyed most. (Not necessarily studies)

4.2.1 Liking of Primary School

Students generally had a positive attitude to school at the end of their primary years. When asked “Do you like school?” only 9% answered in the negative, while 40% gave a positive response. However, there was a difference between male and female responses, with the girls being more positive than the boys (see Table 4.1).

Table 4.1 Liking of School: Grade 6 and Grade 7

Group	% Response					
	Grade 6			Grade 7		
	Negative	Neutral	Positive	Negative	Neutral	Positive
Boys	13	57	30	6	22	72
Girls	4	47	49	3	25	72
Total	9	51	40	4	24	72

[N= 1040]

This discrepancy between boys' and girls' attitudes to primary school was consistent throughout the data, with the boys feeling that the primary school environment catered more to the interests and needs of girls than their own. There was also a similar criticism by boys about curriculum priorities and delivery within the primary school. As one boy put it, "Our teachers are all intelligent females, so what they like to do is what the intelligent girls in the class like to do. We (*the boys*) miss out." One difference in the sample of this study compared with that of Cotterell (1979, 1982) was the predominance of female teachers in the grade 6 group in the present study. In Cotterell's study, the majority of primary teachers were older males. The sample here (76% of the grade 6 teachers being female) is more typical of the sex distribution of teachers within Australian primary schools generally.

When asked "What do You Like about (this) Primary School?" students offered a wide range of responses to the question, with social and extra-curricular aspects clearly in the majority. There were 121 distinctly different responses given. In terms of the breadth of responses, girls claimed a wider range of positives (103) than did boys (88). The only responses dominated by the boys

were “lunch and recess” (13.8%, with 62.5% of these being boys) and “sport” (37%, with 67% of these being boys).

The most common responses were “friends” (42%), “teachers” (39%, with 91.5% of these being girls) and “sport” (37%). In general, the boys were more appreciative of events and facilities than the girls (e.g. “trips and excursions”, “athletic carnivals”, “sports equipment” and “classroom computers”). The girls were more inclined to the climate and interpersonal aspects such as “the general (safe) atmosphere” (11%, with 66% being girls), “high educational standards” (3%, again 66% being girls) and, as mentioned earlier, “teachers”. The only instances in which girls showed a greater appreciation for a facility than the boys were the “library” (4%, with 68% being girls) and the “swimming pool” (5%, with 64% being girls).

Many students mentioned specific aspects of the curriculum (which will be discussed in greater detail later). Also nominated were a great number of special events within the school calendar (e.g. “Book Week”, “end of term parties” and the “school fair”), special facilities or opportunities which the school offered (e.g. “the tuck shop”, “the school farm”, “doing marine science”, “the CSIRO group” and “the school band”), a specific role or honour which the student had experienced (e.g. “being an Aussie Sport leader”, “being the eldest in the school” and “doing the bell”), or some particular aspect of learning or of an extra-curricular group (e.g. “the choir”, “group work”, “contract work” and “research”).

Two of the participant schools had for the previous year undertaken a whole-school project to enhance the physical school environment. Students within these schools demonstrated an appreciation of this, with over 50% of the 39 who responded “school buildings or gardens” coming from one of these two

schools. As an example, one of these students indicated “planting trees in our schoolground” as something which they had greatly enjoyed at school.

Students generally demonstrated an appreciation and understanding of the more subtle and hidden aspects of school and its culture through comments such as “the school’s values”, “the school community”, “it has fair rules/is democratic” and “the history and tradition of the school”.

The remaining responses were idiosyncratic, with many having little relevance to anyone other than the respondent, and included things such as, “where I sit in class” and “my bus driver”.

Clearly aspects and events of primary school life which are important for the students are many and varied, and things that are influential in terms of individual students’ attitudes to school are often not those that an outside observer might presume.

4.2.2 Students’ Descriptions of Primary School

To gain further insight into how students perceive their primary school, particularly in general cultural terms, they were asked to describe their school using a word or a short phrase “as if writing to a pen friend who knows nothing of primary schools in Tasmania” (instruction given during administration). Again students demonstrated a positive attitude towards their primary school in general, with descriptions that could be categorised as positive being 44% of the total, ‘neutral’ as 28% and ‘negative’ as only 15%. Many simply described it as “OK”, “good” or “alright” or in contemporary adolescent colloquial terms such as “unreal”, “radical”, “ace” and “cool”. Such answers said little about how they felt about the school and why.

Others used pragmatic physical descriptions like “cream coloured”, “red brick” or “two storeys”. Those who described schools in these more purely physical terms suggested that their primary schools were “roomy” and “spacious” or “tall”, “large” or “big” (10%) or the converse of “little” or “small” (7%). Others used physical descriptions, but in doing so indicated to some degree an influence upon themselves. These students described it to be “like a home”, “clean and tidy” sometimes with “old” or sometimes with “new” buildings, “nice gardens” and “play areas” and “equipment”.

Those who offered more truly personal responses painted a picture of a happy and involving place. Those focussing more upon the climate elements described their primary school as “secure and safe”, “friendly”, “peaceful”, “involving”, “educational”, “kind” and “pleasant” with a “good atmosphere” and “nice people”, including “good teachers”. They are places that offer “variety”, “interesting activities” and “opportunities” and where students are “important”, “cooperative” and “well mannered”. One quoted the school motto while others used terms obviously borrowed from some official school documentation or teachers’ messages and language, such as “we have a supportive school environment” and “in our school we are faithful to God”.

Where responses were negative, students usually said little other than a general negative remark such as “it sucks”, or it is “weird”, “dumb”, “boring”, “dull” or “stupid”. Others identified the source of the negatives more descriptively, such as having too much “vandalism”, or being a place that is “unsafe”, “ugly”, “a concrete palace”, “crowded”, “too big” or “of non-learning”. The boys were more negative than the girls in their descriptions and more inclined to use general, non-committal terms such as “OK” or “alright”. Where boys did offer descriptive responses, they focused on facilities and events rather than on the more climatic aspects that were predominant overall in the responses from the

girls. This was a recurring pattern throughout all data suggesting a different set of priorities for boys and girls.

Students were also asked for their best memories from primary school overall. The importance of very personal experiences was evident here with a great diversity of responses. Special events such as camps and sporting carnivals were the most common responses followed by sport (particularly for boys) and friends (particularly for girls). Even if girls nominated an event, *who* they were with was usually as important, if not more important, than *what* they were doing. This was in contrast to boys who viewed company as a bonus or a means of making an event possible (such as a team sport), with the event itself being the important/enjoyable factor.

The main conclusion to be drawn from these responses is that, although there are common and valued major events in primary school life, it is essentially a very personal experience and many of the most significant events for individual students would not have long-term importance for others. Many of these personal, cherished memories are developmental landmarks in a particular child's life (e.g. "starting school", "my first kiss", "when I learnt to tie my own shoelaces" and "learning to count").

4.2.3 Social and Cultural Aspects of Primary School

Student Popularity

To gain some insight into the social dynamics within grade 6, students were asked, "What makes students popular (with other students) in this school?". The most common responses were to be "funny/have a sense of humour" (18%) and to be "friendly/a good friend" (17%).

Other common responses tended to exhibit sex-based patterns, with the girls nominating “to be kind/caring” and to be “nice” and, perhaps most interestingly, “to be pretty/good looking”. Of the 125 students who suggested that looks were important, 107 were girls. Boys were more likely to nominate achievement-oriented things such as “good at sport” and “good at everything” as important.

More individual responses also suggested marked sex differences with girls highlighting the importance of good interpersonal skills (e.g. “good at listening”, “supportive”, “mixes well with everyone”), while boys were more conscious of image (e.g. “expensive shoes”, “Nikes” and “cool clothes”) and their masculinity (e.g. “act tough/rough”, “show off” and “act cool with the cool girls”).

Very few responses related at all to schoolwork apart from simply to “be smart”. Specific academic achievements or status positions within the school were rarely mentioned (the total of all such responses being only 4%, with these being almost all girls). This is countered by an equal number (mainly boys) nominating negative achievements as a means of gaining popularity. Popular students “get into trouble”, “fight” and are “naughty”. One student suggested that the popular students are always “either really kind or really nasty and naughty”.

Many of the minor responses suggest a sense of being more grown up than average with status and popularity linked to maturity. A popular student was described as “big, tall and strong”, “has a bra”, “is mature” or “is the oldest”. In total, these responses represented a minority of about 3%. The remaining responses were very eclectic and include things as diverse as “they get on with

little kids”, they are polite”, “an only child”, “don’t smoke”, and are “creative”, “fit” and “skinny”.

Punishments and rewards

When asked, “What do you get into trouble for?” or /”What do you get praise for at this school?”, students nominated 71 different reasons for getting into trouble and 62 for gaining praise. The girls provided a greater range of responses for praise, but the boys equalled them in responses for trouble which was clearly an important issue for many boys.

Trouble was seen most frequently to involve “fighting, hitting and rough play” (43%, mainly boys), “talking at an inappropriate time” (30%, mainly girls), “backchatting and being rude to the teacher” (26%, mainly girls), “swearing” (15%, mainly boys) and “running in inappropriate places” (8%).

Other, less common but frequent, responses could be grouped as work-related (e.g. “not listening”, “not doing your homework”, etc.) social-interaction-related (e.g. “bullying”, “arguing”, “having bad manners”, etc.) and vandalistic (e.g. “graffiti”, “swing on the chairs”, etc.). Very few concerned sexual issues, and these involved ‘minor’ offences such as “playing handies”, “having rude magazines”, “kissing” and “pushing boys into the girls loo”.

There was not a huge sex difference in these grade 6 responses regarding reasons for trouble, the exception being that those involving more physical behaviour were predominantly offered by boys.

Reasons for praise were usually work-related, with “producing good work/getting your work right/high marks” (61%) being the most common

response. The second most common was “trying/working hard” (18.5%), and the third most common was “being well behaved” (13%).

Less common responses reflected some sex differences, with girls more inclined towards displaying and developing aspects of character (“showing improvement”, “being kind and caring”, etc.), whereas the boys were concerned more with meeting imposed expectations with perhaps an element of competition (e.g. “good at sport/sportsmanship”, “working fast”, etc.). Although “fighting” and “rough play” were easily the most common causes of trouble, only 1% suggested “not fighting” as a reason for praise, and a further 1% suggested “for stopping fights”.

The next section documents the same students’ perceptions of secondary school, in response to similar questions, after the transition from primary to secondary school.

4.3 Students’ Perceptions of Secondary School Environments After Transition: Physical, Social and Cultural Dimensions

This section contains results relevant to students’ liking of secondary school (4.3.1), the way in which they thought about and described it (4.3.2), and their view of some aspects of the social dynamics of their school (4.3.3). Grade 7 questionnaire items relevant to this section include:

- Do you like high school?
- What do you like about high school?
- Can you think of one word or statement that could describe high school best?
- Think of the students in grade 7 who are most popular with the other students. Why do you think they are so popular?

- What sort of things do you commonly get into trouble for at this school?
- What sort of thing do you commonly get praise for at this school?

4.3.1 Liking of Secondary School

To allow comparison to be made between student perceptions of primary and secondary school, similar questions to those asked in grade 6 were asked about secondary school (to the same students). When asked 'Do you like (secondary) school?', the students were again very positive (see Table 4.1). Comparisons with the grade 6 answers to the same question suggest that the transition had little impact on students' overall attitude to school in this respect.

When asked "What do you like about this (secondary) school?", 75 distinct groups of responses resulted, with girls offering a slightly greater range (+9%) when compared with responses of the boys. Clearly the variety of new learning experiences was the most positive aspect perceived, with "new" or "variety of subjects" being nominated by 66% of students (57% of whom were boys). This is one of the few times when boys outnumbered girls with a positive education-related response. Probably this links back to the disenchantment which many boys felt towards the primary curriculum. "New teachers" or the "variety of teachers" was the second most popular response (37.5% of total, with 65% being girls). The perceived value of a range of teachers was described by one boy as follows: "You are not stuck with the same teacher, so you don't get sick of each other". Another suggested that "You have variety, like in primary school. If your teacher liked maths, he or she would do heaps of that and not much else."

There were also comments such as "the teachers are friendly" and "they don't growl as much", but at the same time they were "stricter than at primary

school". This apparent contradiction is explored in a later section when discussing findings in relation to those derived from the *Strict* scale of the *Questionnaire on Teacher Interaction (QTI)* (see Section 5.3).

Exposure to new people and the making of "new friends" was the third most common reason for liking secondary school (20% of total). As elsewhere in the study, such social considerations were usually mentioned more often by the girls (68% of such responses). An equal number of boys and girls answered "having boyfriends/girlfriends" of the 7% of students who did so.

High on the list of secondary school positives were the new organisational aspects such as "changing classrooms" and that "you move around between lessons". One boy explained, "You get to experience a new environment every 50 or 100 minutes". Another boy liked "the certainty of the timetable", and another responded that, with regular change, "the day seems to pass more quickly" and "you have more chance of learning something new". Responses of this kind were predominantly made by boys.

"Facilities" or "equipment" was nominated by 8% of the total (again mainly boys), and for many other students (9%) the "canteen" and its greater variety of food was important. For one boy, the best thing about secondary school was that "You can get hot chips in the canteen". However, one facility that was important to the girls in particular (70% of the 60 students who gave such an answer) was that you "get to have a locker". Linked with the nostalgic reflections by girls in regard to primary school and the greater priority on climate and environment aspects generally, the importance of lockers raises a question. The data suggests that the girls feel a greater need for a more private, personal space at this age than the boys.

Again, when explaining what they liked about secondary school, the girls dominated climate-related responses with examples like “the atmosphere” and “there are lots more people” who are “more our age”. When they did comment upon the environment, boys focussed more on the physical aspects and were pleased about having “bigger grounds” and “more space”.

Reinforcement of the feeling of growing older was also important for many students. This was usually disclosed through comments such as “the teachers trust you more”, “you are treated more like adults”, “we aren’t treated like babies”, “you can eat around the school”, “ we aren’t told where to play at lunch”, “you get more responsibility” and “to rely on yourself more”. There were other, more subtle responses within this category, such as “I am allowed to stay up later” and “you can muck around with the boys and the teachers just let you”.

The remaining responses focused mainly upon a variety of extra-curricular experiences such as “sports carnivals” and “outdoor education”. For some students it was just “more fun”, “better” or “cool”. For 8% of students, it was “everything” about secondary school that they liked.

4.3.2 Students’ Descriptions of Secondary School

When asked to describe their secondary school with a word or short phrase, students were generally positive, although surprisingly not as positive as for responses to “Do you like school?” Their descriptions were classified as 36% positive, 31% neutral and 11% negative. Again the majority (particularly the boys) chose a general comment such as “good”, “OK” or “excellent”, which offered little insight into what their positive feeling was based upon, while 13% of students described secondary school as “fun”, another 13% as “big” or

“spacious”, and 9% resorted to a colloquial description such as “groovy”, “cool”, “radical” and “wicked” (mostly boys).

The remainder of the responses were quite individualistic and covered a wide range. Secondary schools were described as “exciting”, “having variety”, “adventurous” and being “more adult”, as well as having “lots more people”. Some students focussed upon events and facilities such as “the gymnasium”, “athletics” and “lots of equipment”. Others who referred directly to classwork aspects included the terms or phrases “educational”, “you learn more”, “it is very organised” and “efficient”, “interesting subjects” and “lots of homework”. Descriptions which focussed upon social aspects included “responsibility”, “safe”, “discipline”, “strict”, “fair” and “sensible”.

Negative responses relayed a general discontent, but gave little insight into whether causes were classroom-based or school-based. These responses included “crowded”, “hopeless”, “boring”, “confusing”, “complicated”, “awful”, “strange”, “it sux” and “too difficult”. Some implied that it was the social interaction with other students that kept them positive, with comments such as “it is boring, but fun because you get to muck around” and “when you go down a corridor after a class has finished, all you say is hello, hello”. There were others who were impressed by the “cute boys” and the “good looking girls”. A growing awareness of sexual roles was evident in comments such as “it is boring, but fun because of the boys” (from a girl).

4.3.3 Social and Cultural Aspects of Secondary School

Student Popularity

When asked “What makes students popular with other students in this (secondary) school?”, as with the equivalent primary school question, student

sex-based differences were pronounced. Students' responses also clearly reflected the changing social culture as they moved into adolescence compared to their primary school responses. None of the majority responses were without some sex differences. The most frequent responses were to "be caring/kind/sharing/nice" (20% of the total, with 75% being girls), "be friendly" (or) a "good friend" (15.5%, with 64% being girls), "have a sense of humour/can tell jokes/funny" (13.5%, with a slight majority of boys), "be good looking/pretty"(13%, with 76% being girls), "act cool/flirt" (9%, mainly boys), "be rich/have good clothes/trendy hairstyle" (6%, with the majority being boys), be "intelligent/smart" (6%, a majority girls), "act tough/be strong" (5%, all boys), "show off" (4%, a majority boys) and "be good at sport" (4%, with 68% being boys).

There was also an indication of subtle peer pressure, perhaps assumed rather than imposed, with comments such as "to copy others", "don't be too individual" and "always follow what the others do". However, in contrast to these, others suggested that popularity resulted from "being an individual", "standing up for themselves" and being "daring", "gutsy" and "courageous".

There was some evidence of growing subcultures. Traits such as "to smoke" (interestingly almost all girls), "do drugs", "bash up others" and "stir the teachers" were offered by some students. Two students suggested that it was important "not to be too clever" if you wanted to be popular. By contrast, others suggested that to be "hard working", "cooperative and considerate", "sensible", and even to be "popular with the teachers" or "in a position of status in the school" and "well behaved" made students popular. Interestingly, although there were only 10 responses stating "honest and trustworthy", nine of them were given by girls.

Some students claimed that it takes an almost contradictory personality mix to be popular, such as being “pretty, naughty and kind”, “daring, but kind and likeable”, or “cool and not good all of the time like most students”.

Punishments and Rewards

In secondary school, students proposed 59 reasons for getting into trouble, and 45 that could result in gaining praise. The range of responses for girls and boys was similar, but their nature differed to a degree. As with primary school, the most common reason for trouble was “fighting (or) rough play” (37%, nominated mostly by boys). Other common suggestions were also related to behaviour or social interactions (e.g. “talking at an inappropriate time”, “backchatting the teacher”, “swearing” and “smoking”).

Less common reasons included some common to grade 6, such as “running”, “not working”, “disturbing others”, “littering”, etc., but also many new ones reflected an expectation of more responsibility (e.g. “forgetting gear”, “being late” and “wagging school”). Boys included many more that were related to aggression (e.g. “bullying” and “chalking people”) and others that suggested a testing of the boundaries (e.g. “being out of bounds”, “wandering the corridors” and “having untidy dress”). Sex differences were not greatly pronounced, but as elsewhere the boys’ focused more upon boisterous activity than did the girls.

Praise was most commonly linked to producing “good work” and “getting good marks/work correct” (70% of students). Similar common responses included “trying” and “making an effort” (18%), “having good behaviour” (15%), “meeting deadlines and completing work” (12%), and “producing neat/well presented work” (11%).

Remaining, less common responses were related to behaviour (e.g. “being polite”, “quiet”, “helping others” and “being friendly”) and demonstrating responsibility (e.g. “picking up litter”, “getting awards and certificates” and “being a participant”). Of the 2.5% of students who responded “I don’t know”, 100% were boys.

The next sections contain a summary and discussion of students’ comparisons of the primary and secondary school sectors, particularly those aspects that are not directly classroom environment related.

4.4 Students’ Primary/Secondary School Comparisons

This section summarises and discusses students’ comparisons of primary and secondary school with a particular focus upon the whole-school environment, including physical (4.4.1) and non-physical (4.4.2) elements as well as organisational differences and similarities (4.4.3). The data used in discussions within this section were drawn from students’ descriptions of the two school sectors as well as responses to questions inviting direct comparisons (e.g. ‘How is being at High School different from primary school?’).

4.4.1 The Physical Environments of the Primary and Secondary Schools

Many students were anxious about the size of secondary schools compared to the generally smaller primary schools, but this anxiety was often mixed with a degree of expectation and excitement. The boys were positive about the increased space available within the school grounds in particular.

Many students clearly identified with the physical aspects of the school, and, where schools had focussed upon improving the general environment, this became important for many of the students who were directly involved. Special facilities within the school, such as a farm or pool, also provided a positive focus for students, especially when linked to some activity which they enjoyed (for example, sport). Again, a greater diversity of such facilities in the secondary school was viewed positively by students, in particular, the sporting facilities and the canteen.

A feeling of ownership of some space was important for many students, particularly the girls, and their 'own' classroom was missed by many once they were in secondary school. Most students reacted positively if allocated a 'home room' as a base in grade 7. However, although they disliked sharing this room with other classes, students did not wish to remain there for the entire school day (this was especially true for the boys). Students wanted a 'controlled' integration into the school as a whole with a secure 'private' space to retreat to when it became threatening for them. Lockers were important in providing this feeling of private and owned personal space, particularly for the girls.

The disappearance of the obvious physical symbols of childhood around the school also made an impression upon students (e.g. the playground equipment) and left them feeling something of a loss as there was no clear adolescent replacement for such things (and therefore no focus for recess and lunchtime activity beyond social interaction).

4.4.2 The Non-Physical Environments of the Primary and Secondary Schools

The non-physical elements of the school proved to be far more important for the girls than for the boys, both in terms of the general school climate and specific social interactions. The atmosphere of the school and interpersonal relationships within it were central to the girls' feelings about school. The boys were more inclined to relate to physical aspects, activities and events. Friends were important to the boys, but usually because of the activities which they could do together rather than the relationships themselves (e.g. games, sport). All students demonstrated a high degree of excitement at the prospect of meeting many new people and potential friends in secondary school. However, the girls at least, felt that, although these new relationships did develop and extend their circle of friends, the new friendships were not as close nor as stable as earlier ones which they retained (or lost) from primary school.

The presence of younger people in the primary school and of older ones in the secondary school was clearly important for students, and greatly affected how they felt that they should behave and what image they should project. The issue of social image became very influential in the anticipation and realisation of becoming a secondary school student. Appearance was important to all, but boys were more inclined towards physical symbols such as clothes and hairstyle, rather than aspects beyond personal control such as inherent looks. Girls, by contrast, were more concerned about appearance issues that were harder (or impossible) to alter (e.g. general looks, weight, hair colour and type, etc.).

Students' perceptions of reasons for student popularity with peers within secondary contexts reflected a growing adolescent self-image along with a degree of uncertainty. In these contexts, sex stereotypic responses were greatest, as if students, not wanting to be seen as outsiders, took refuge in safe 'norms'. Alternatively, it may be that the 'sex inclusive/awareness' revolution had not yet reached this private social domain of students (with impact limited to classroom interactions). Student social groups became more diverse once in secondary school and some took on new social identifiers such as smoking. Some secondary school groupings were described as 'cool' or image enhancing and others the reverse, and this resulted in students being confronted with new, and somewhat stressful, social decision-making situations.

In terms of the more 'formal' school climate, that is, the elements of the overall system-based culture of the school, students demonstrated an awareness and acceptance of policy, particularly in the primary school. The primary school was perceived as much more supportive and personal, in a general sense, by the students. This aspect was particularly missed by the girls once in high school. There existed a strong recognition by students that, central to the 'supportiveness' of the school, was the role and attitude of the teachers, and the nature of the relationship between student and teacher. The relationships with primary teachers were described differently to those with secondary teachers, the latter being much more work focussed. Primary schools were seen as usually happy and secure places, while the secondary schools were considerably less so. Such aspects were lost within the greater diversity and opportunity which secondary schools offered, with security being replaced by uncertainty.

Although all schools' documentation professed a strong 'supportive school environment policy' and profile (e.g. Brooks Transition Cluster, 1990; Lauderdale Primary School, 1992; Exeter High School, 1993) , students were clearly more aware of issues leading to punishment than those resulting in praise. Such responses did not really reflect the intended supportive approach (the supportive policy being based upon an ethos of positive reinforcement). Punishments were strongly linked to conformity issues and praise was related to work-attitude and production. This was the case in both primary and secondary schools, with differences between the two consisting of the detail of what constituted 'satisfactory' work production, what conformity was expected, etc.. The most obvious cross-transitional differences in praise/punishment issues related to increased work expectations (quantity rather than difficulty) and the changed student culture (e.g. smoking). This suggested a perceived change in teacher expectations, increased peer pressure and resultant tension for students.

4.4.3 Students' Perceptions of Organisational Differences and Similarities Between Primary and Secondary Schools

Many students, the boys in particular, were quite critical of many organisational aspects of the primary school, especially within the classroom. The dominance of the secondary school timetable, although often criticised by teachers, was seen as a positive by many boys because of the certainty of curriculum access and diversity that it imposed. All students were overwhelmingly positive about the greater curriculum variety allowed to students within the secondary school structure.

Students' feelings were mixed about the organisation of space within the two structures. Some found the variations within the secondary learning environment stimulating, while others wished for a greater feeling of ownership and identity with a particular space. Although continual change of classrooms meant that much of the secondary school day was lost to movement, students felt that within the actual lesson times, secondary teachers were better organised than their primary counterparts and that this resulted in a greater intensity of learning during work sessions.

The next section (4.5) considers the students' perceptions of the primary-to-secondary school transition event itself, particularly as it impacted upon them personally in terms of concerns and problems or positive experiences and outcomes.

4.5 Students' General Perceptions of the Primary-to-Secondary School Transition Experience

This section deals with students' responses describing the nature of the primary to secondary school transition event along with their comparisons of the two stages of schooling. Firstly, pre-transition expectations of students are considered (4.5.1) and secondly, post-transition reflections (4.5.2). Section 4.5.3 contains a discussion of students' responses when asked to reflect back on primary school after the early, incorporation stage of secondary school. Finally, section 4.5.4 reviews students' responses to all transition and school perception questions highlighting patterns in responses that were student-sex dependent.

To identify and describe students' perceptions of transition, the items from the grade 6 questionnaire of relevance included:

- What are you frightened of or concerned about most at the thought of going to high school?
- What are you excited about most?
- How do you think being at high school will be different from primary school? (Write as many things as you can think of.)

Relevant items from the grade 7 questionnaire are:

- What has frightened or concerned you most about being at high school so far?
- What have been the exciting things?
- What do you miss about primary school?

4.5.1 Students' Pre-Transition Expectations

When asked to suggest what differences were anticipated between primary and secondary school before transition occurred, almost one third (31%) of students responded that they expected “harder work”. Other common expectations were having “more” or “different teachers” (30%, with a majority being girls), “a bigger range of subjects” (26%), and “more people” including “lots of strangers” (21%, a majority being girls). Students expected secondary schools to be “bigger”, with “more space” and “more classrooms” (16%), and that they themselves would become “the smallest in the school” (12%; a majority being girls). Boys described themselves not in terms of being the smallest, but rather as “being with older/bigger people” (12%). Students also thought that secondary school would involve doing “more homework” (11%).

Students also anticipated “more bullying” and “teasing”, access to “better equipment and facilities” and a “longer school day”. Girls demonstrated a greater concern or interest than boys about “exams and tests”, “being more grown up”, “having more responsibility and independence” and “getting lockers”. Boys showed greater concern or interest about having “more work to do” and “more rules”, but they also expected “more fun” with “new friends” and “no Friday sport”.

More individual responses included anticipation of both positive and negative aspects of change. They looked forward to “new horizons” where there are “greater freedoms”, “more choice” and “new routines” with “no little kids about” and “less teachers on duty”. But also they thought that it would be “scarier” and “rougher” with “more smoking and drugs”. They expected that the “day will be longer” involving “waking up earlier” and having “further to travel”, all resulting in being “more tired”.

The students certainly anticipated that secondary school would be a more adult world where they could “tackle in footy” and “get marks for your work instead of stickers”, and that they wouldn’t “play with toys anymore”. They also expected that there would be “no playground equipment” so that they wouldn’t “play like we do in primary school”. They also saw the work as more important because “it can help you get a job”.

Students were also asked to comment on predicted positive and negative aspects of the transition event itself. Chief concerns involved their perceived vulnerability in new situations. Strongest concerns were about expected “bullying” and “older kids fighting”. These were major

concerns for almost half of the cohort (42%, with a majority being boys). Other students (11%, almost all girls) were concerned about the similar, but less violent, “teasing”. Graphic colourful terms were used to describe both ‘initiation’ events (e.g. “the royal flush”, being “binned” or “egged”), and the areas of the school where such activity is supposedly concentrated. One school had an infamous “death corridor”, which coincidentally was on the main route to the grade 7 locker area. Many students were worried that they would be singled out for “treatment”, often for interesting reasons such as “people won’t like my new haircut”, “people are mean to you if you are not attractive”, “the big grade 9s will say look at those silly little grade 7s”, “people have told me the grade 10s bash the living daylight out of grade 7s for the slightest thing” or because “everyone will think you are a nerd”.

Such comments suggest a strong pressure, perhaps assumed rather than imposed, to conform to a particular social image even before students arrive at secondary school. Many accept that these fears were partly irrational, but this helped little. Students explained that “I know the rumours aren’t true, but sometimes I get worried” and, as another girl commented, “just thinking about it gives me nervous nerves”. The real fear was often simply the unknown reinforced by the pressure resulting from a strong desire not to be an outsider.

Many other concerns related to the size and complexity of high school, especially worries about “getting lost” (25%, a majority being female). For students coming from a small school, this was a particular concern, with seemingly trivial aspects such as “it has stairs” creating apprehension. Another compounding aspect of these anticipated concerns was the fear of “not having a permanent base” (classroom).

The remaining common concerns resulted from an anticipated increase in the difficulty of schoolwork. Specifically, students worried about “harder work” and “higher expectations” (17%, a majority being female). Their chief concern was not the work itself, but a strong fear of failure and exposed inadequacy. This was revealed through comments such as, “I will be too dumb” and “I know I will cry in maths when I can’t do the work”. Typically such responses included reference to embarrassment at the thought of adopting a ‘childish’ response (e.g. “crying” or “wanting my old teacher”) in this new, non-childish environment. Concern at not coping with the “harder work” was very much directed towards mathematics and spelling.

The only other response of concern to more than 10% of students was the “unknown” and “crabby”, “mean” or “strict” teachers (11%, a majority being girls). They worried that teachers would expect rigid adherence to “unknown rules”. Again, fear of the teachers was largely due to the unknown factor, and was sometimes linked to the “harder work” concern reflected in comments such as “they will expect too much of us” and “the teachers won’t respect us”.

Remaining responses could possibly fit under the broad categories above but offered more personal or specific examples, such as “being confused by the timetable”, “making a fool of myself”, “not knowing where to go if I do something wrong”, “pressure to get into smoking and drugs” and “hard tests”. Such concerns were expressed more by girls than by boys, the latter being more concerned with “initiation rites”, the “threat of fights”, “kids swearing”, and “getting into trouble” with “a strict principal”. One boy even expressed concern at the thought of “getting stabbed” by older students. Many were concerned

at the thought of “too much homework”. There were 9% of students who suggested that they anticipated no concerns at all about starting high school.

There were also many positive aspects of transition and starting secondary school that students anticipated with excitement. Students particularly looked forward to the expected increase in variety offered by the secondary schools. This variety included “more” or “new” friends” (19%, a majority being girls), “subjects” (14%) and “teachers” (10%, with 78% of these being girls). Greater variety within the school day itself was also anticipated with excitement, including aspects such as regularly “changing teachers” and “classrooms”.

Girls outnumbered boys in positive anticipation of aspects of maturity (e.g. “being older”, “being a high school student”, “doing new things” and encountering “more challenging work”). There was also an interesting set of responses regarding relations with brothers and sisters. Both boys and girls suggested that “being away from younger kids” was a positive aspect, but girls in particular looked forward to “getting away from my little brother/sister” or “being with my older brother/sister”. Again there was a desire to be associated with older people and to disassociate with younger ones.

The recurring preference for boys for activities and facilities-related aspects emerged here (e.g. “sport”, “the sports carnivals”, “trips” and “camps”, “lunch and recess times”, “the canteen”). There were also some responses from boys that were related to growing older, but these did not directly relate to school experiences (e.g. “hot girls”, “getting away from my primary teachers” and “being closer to leaving school”,

with one boy suggesting that the most exciting aspect of starting secondary school was “getting closer to being old enough to get a driver’s license”).

Comparisons of the boys’ and girls’ responses revealed a consistent and different pattern of responses. Many of the boys saw the greatest positive aspect in the change as getting away from something, or closer to actually leaving school and becoming an adult when the real benefits of growing up were perceived to be (e.g. driving, work). By contrast, girls were preoccupied with the progressive steps to maturity, and therefore the more immediate. This was revealed through comments such as “taking another step in life” and “being a teenager”. When describing secondary school, girls liked “the grown up feel of the place” (of the 6 students who commented upon the older “atmosphere” of high school, all were girls), and “growing up and having boyfriends and parties”. When girls did look beyond school, it was still in a more developmental way, such as “planning for a career”. There were some students (9%), almost all boys, who suggested that they were looking forward to “nothing” at high school.

The next section describes what actually occurred during the primary-secondary transition from the personal perspectives and experiences of the students.

4.5.2 Students’ Post-Transition Reflections about the Primary to Secondary Transition

Earlier sections (4.3, 4.4.1) contained descriptions of the students’ general perceptions of the two school systems (primary and secondary) and their anticipation of the changes involved in transiting between

them. This section contains an outline of what the transition was actually like for students from their personal experiences.

When asked to detail the concerns felt and experienced during the transition period, after the event, the majority of students responded “nothing” (22% of the total, with a majority being boys). This suggested that most of the fears expressed prior to transition proved to be unfounded, perhaps especially so for the boys. A follow-up in one of the larger schools in the sample revealed that 40% of students’ concerns about entering secondary school actually eventuated, but that less than 5% were subjected to any of the anticipated acts of violence (bullying, initiations etc.). By contrast, 95% of the aspects anticipated as positive were realised.

Once settled into secondary school, 21% of students (mainly boys) still expressed “bullying” and other violent acts as concerns, even though they had not actually occurred for most. This fear was sustained largely by the presence of much bigger students and a general increase in the level of perceived ‘violence’, often in the form of ‘rough play’. Therefore, the violence was a perceived general threat, rather than an actual first-hand experience. Beyond the “bullying” and similar aggression-related concerns, a further 11% of students expressed concern about the general, dominant presence of “bigger kids”. Another 10% of students related other concerns resulting from the presence of older students (e.g. “teasing”, “threats”, “you see people smoking and they tell you not to tell or you will get it”, “the older boys, if they are where you want to go at lunch”, “older kids say things which embarrass you” and “big kids accuse you of doing something you didn’t do and then want to fight you”).

Many of these comments suggest a pecking-order motivation on the part of older students. This conclusion was supported by one student who suggested that for him the worst offenders were in grade 8. He suggested that the worst were “the grade 8s because they think they are so tough. The 9s and 10s have gone up a grade and don’t seem to do it”.

Being “teased” and verbally “picked on” by older students was the second most common problem actually experienced, with just under 20% of the student sample being subjected to it to some degree during the first few weeks. Violence did exist for a few, with some being recipients of more than just threats. These students explained that “the big kids push you around a lot, especially in week one”, one student told of “getting punched to keep my mouth shut”, and another “got flushed in the dunny (*toilet*)”. Such specific initiations were experienced (either first hand or observed) by 69 students in the main study’s sample (7% of the cohort) and most involved some form of humiliation or embarrassment.

Other comments about negative experiences included: “I got really upset on the first day, when a big boy put a condom on me” and “My bike got smashed up in the bike shed”. Other students had “things stolen” and one received “lots of racist comments because I am black”.

Second to the bullying and teasing was the concern about “getting lost”. This was a particular worry for the girls (13% of the total expressed this concern, with 64% of these being girls). Students described many personally harrowing situations where this did actually occur (e.g. “I felt really nervous. I went back to my home room and there was

another class there. So I ended up late to English”). Going to the wrong class and being confused by teachers’ instructions were common complaints. Getting lost or confused about what to do, were in fact, the problems most commonly experienced by students (20% of the students described at least one instance of these particular problems).

Other concerns common across the sample included “strict teachers” and “getting into trouble” (for girls in particular) and “having no friends”. Also, “worry about failure”, “timetable confusion”, and the resultant “being late for class”, “problems on the bus” and “the first day”. Things which were of particular concern to boys included “being the smallest again” and “the amount of homework”.

Teacher-related concerns were not widespread, but students commented that “sometimes I think the teachers are going to hit someone” and that “I don’t like the teachers’ loud yell”. Some were afraid of “going to the office” and the “unknown rules and routines”. Others reported that they experienced or feared “harsh punishments” and “detentions”. Other non-teaching authorities also caused apprehension. For example, one girl reported being very upset because “the bus driver was very nasty to my brother” and another being “scared of the principal in assembly”.

Many of the remaining responses could be grouped with one student’s plea of “wanting people to like me” as a need to belong. This was often associated with fears about having the right look or image (e.g. “I was worried about my hair cut, and how you are supposed to do and say things”).

Over one third (34%) of respondents reported that the subjects which they encountered were the most exciting thing about being at secondary school. For some, it was “the range of subjects” and for others it was specific subjects, particularly ones seen as “new” or offering new and different facilities (e.g. science). Certain aspects of specific subjects were also mentioned, such as “doing guitar” in music, or “pracs” and “using bunsen burners” in science. For one student, it was just the excitement of “doing the first lesson of every subject”. Others said that it was “having more time” in particular subjects which they liked.

The next most common responses were the people-oriented ones, including “meeting old friends” and “making new friends” or simply being amongst so many “new people” (29%; with a majority being female). Part of this excitement was due to “being with older kids” or being amongst “cute boys” and “girls” (often referred to as “chicks”). For others, the best aspect was “meeting old friends from elsewhere” or from “older grades in primary school”. One factor which greatly influenced “losing friends” was the prevalence of composite grade classes in primary school. This meant that friends from the same class moved up to secondary school a year apart. This was particularly common for students coming from smaller primary schools.

Teachers were the next most common positive influence (17% of the total responses), and this aspect was especially important for the girls (75% of such responses). References were made to specific teachers who had made an impact, or to the “range” and “variety” of teachers. Others referred to the changing perception of the basic nature of teacher-student interaction through comments such as “you can stir the teachers in secondary school”.

Remaining responses nominated specific activities or social events, often extra-curricular in nature (e.g. “Book Club”, “the Rock Eisteddfod”, “the walkathon”, “socials” or “disco”) as well as facilities (e.g. “canteen”, “lockers” and “sport facilities”) or events or indicators of their growing maturity (e.g. “feeling older”, “being relied upon to be in certain classes”, “being treated like an adult” and “being allowed to express yourself more”). Although this last category was particularly important for the girls, boys also mentioned such aspects, but often with an increased sense of power (e.g. “bossing grade sixes around”, “getting the older kids back”). Also related to growing up were other, somewhat negative, aspects such as “smoking”, “getting into trouble”, “watching others get bashed up” and, from one girl, “checking out the cute boys and wagging” (‘wagging’ refers to unofficially missing classes).

As with other answers to other questions, the girls were more influenced by aspects related to the curriculum than were the boys. These included “interesting class work”, “the experiences”, “changing from class to class”, “school trips and excursions” and “getting our books”. On the other hand, the boys’ focus was often external to the classroom (e.g. “lunch and recess”, “sport” and the “canteen”). A few students (9%, with a majority being boys) answered that “nothing” was exciting about being at secondary school.

To provide a further view of the impact that secondary school had upon students, they were also asked to reflect back on their primary school after they had been away from it and in this new environment. The next

section contains a report and discussion of students' responses to that request.

4.5.3 Reflections on Primary School Once Students Were Settled into Secondary School

Once settled into secondary school, students were asked to reflect upon their primary school experiences, particularly those of grade 6, and to state what they "Missed about primary school now they were no longer there". The most common response to this question was "nothing" (29% of the total, with 84% being boys). The girls were much more nostalgic about the primary school than the boys, with girls missing "the/my teacher(s)" (24%, with 60% of these girls) and "the younger kids being around" (23.5%, with 62% being girls). Many students missed "being the oldest/the top grade" and the "camps and excursions", but sex-based differences were distinct in most other responses. The girls missed "having our own room/class", "the atmosphere", "the playground" and "the smallness of the school". The boys missed the "longer lunch and recess", "sport", "the easier schoolwork" and "not getting into trouble". Again, the 'climate' and related aspects within the primary school were closer to the girls' interests and priorities than to those of the boys whose focus was more on facilities and events.

Many students missed the flexibility and lack of formality of the primary school once in secondary school. This was reflected in statements such as "being able to do PE if the weather was good", "not having to be so organised", being able to "work on something as long as you liked", and "wandering around the classroom or leaving without asking". There was also a sense of a lost childhood in responses such

as missing “running around the yard”, “playing marbles” and “playtime”. One girl claimed that “there is nothing to do in high school, nowhere to play”. They missed the “monkeybars” and other playground equipment, but one honestly offered that “even if they were here (in high school), we probably wouldn’t use them because it wouldn’t be cool”. Growing up has its down side.

Throughout these responses, there was a sense of a void left by the loss of children’s ‘play’ in their school life and of an uncertainty about their current role. One girl claimed that “friends seemed to be closer in primary school”, and another said that she “really missed it when my younger sister comes home and tells me what they do like ‘kiss and catch’“. Another girl stated that in primary school the “little kids looked up to you”, whereas in secondary school “you are just one of the crowd”. Boys tended to be far more pragmatic in their answers, perhaps best illustrated by one who said that “I liked primary school but I don’t miss it; that was then and this is now”.

General findings about student concerns and difficulties during transition in this study were very similar to those described by earlier researchers (Cotterell, 1979, 1982; Ahola-Sidaway, 1986), including worries about bullying, teasing, and so on. However, in this current study, most of the concerns about violence and initiations were never realised for the vast majority of students. In fact, the most common problem actually experienced was getting lost in the secondary school, a problem that could be largely rectified by a suitable transition program. The greatest concern was general uncertainty in the face of the unknown, combined with a strong desire to be accepted within a new, and somewhat strange, environment.

Although not specifically addressed by the research question, grade coordinators were asked if the school had any transition programs in place. Many did have programs, but most consisted of a one-day pre-transition visit to the secondary school. During these visits, the students met the grade 7 coordinator for the following year (if he/she was currently on staff), some of the teachers and older students and had a tour of the facilities. Such school programs designed to ease transition did have a minor impact, particularly in terms of understanding structural issues (curriculum, timetables, etc.) and initial introductions to key teachers (if available).

By far the greatest source of information (or misinformation) about secondary school, for students prior to transition, was older students, particularly older siblings. Unfortunately, much of this information was related in a way that contributed to concern rather than easing it and often became a variation of stress-inducing teasing. It was also evident that, where transition programs were successful in reducing concern for students they also proportionally reduced the positive excitement. The unknown proved not only to be the major source of worry, but also of most of the aspects giving rise to positive anticipation.

Overall, in spite of some fears, the majority of students commenced secondary school with a renewed enthusiasm for school and a very positive sense of anticipation. Central to this was a great expectation of expanded curriculum access and diversity of learning experiences. Teachers played a central role in this anticipation, particularly in regard to the increased range of teachers who expected and the resulting diversity of experiences that they would provide.

Boys and girls experienced the transition differently, not so much because they experienced different things, but rather because their anticipations and priorities were focussed differently. They also brought with them different feelings about their primary school experiences (see Figure 4.1). These categories indicate self-perceived influences, within the whole-school context, upon the students at (or up until) the time data were collected. To produce Figure 4.1, students responses to questions that gave an indication of their priorities (e.g. “What do you like about primary/secondary school?”) were reviewed and responses categorised. All of the major response categories are included in Figure 4.1. These were: Relationships, both peer and adult; Facilities and Resources; Organisational aspects; Extra-Curricular aspects; Curriculum aspects; and Maturity and Independence aspects.

Figure 4.1 indicates that adults (teachers) became a reduced influence after transition, peers remained equally important, facilities and resources less important, organisational aspects (timetables etc.) more important, curriculum aspects equally important, and aspects related to maturity and independence became more important. The two categories with substantially different responses from boys and girls were the influence of the teachers (very important for the girls pre-transition) and the influence of resources and facilities for the boys (also pre-transition). Qualitative data suggest that these priority differences did exist post-transition, but no longer were identified as key influences determining why students liked school. Differences across transition were due largely to reduced exposure within the secondary context (e.g. limited extracurricular activities in the early stage of grade 7), combined

with a belief that reality did not match expectations (particularly in regard to access to facilities).

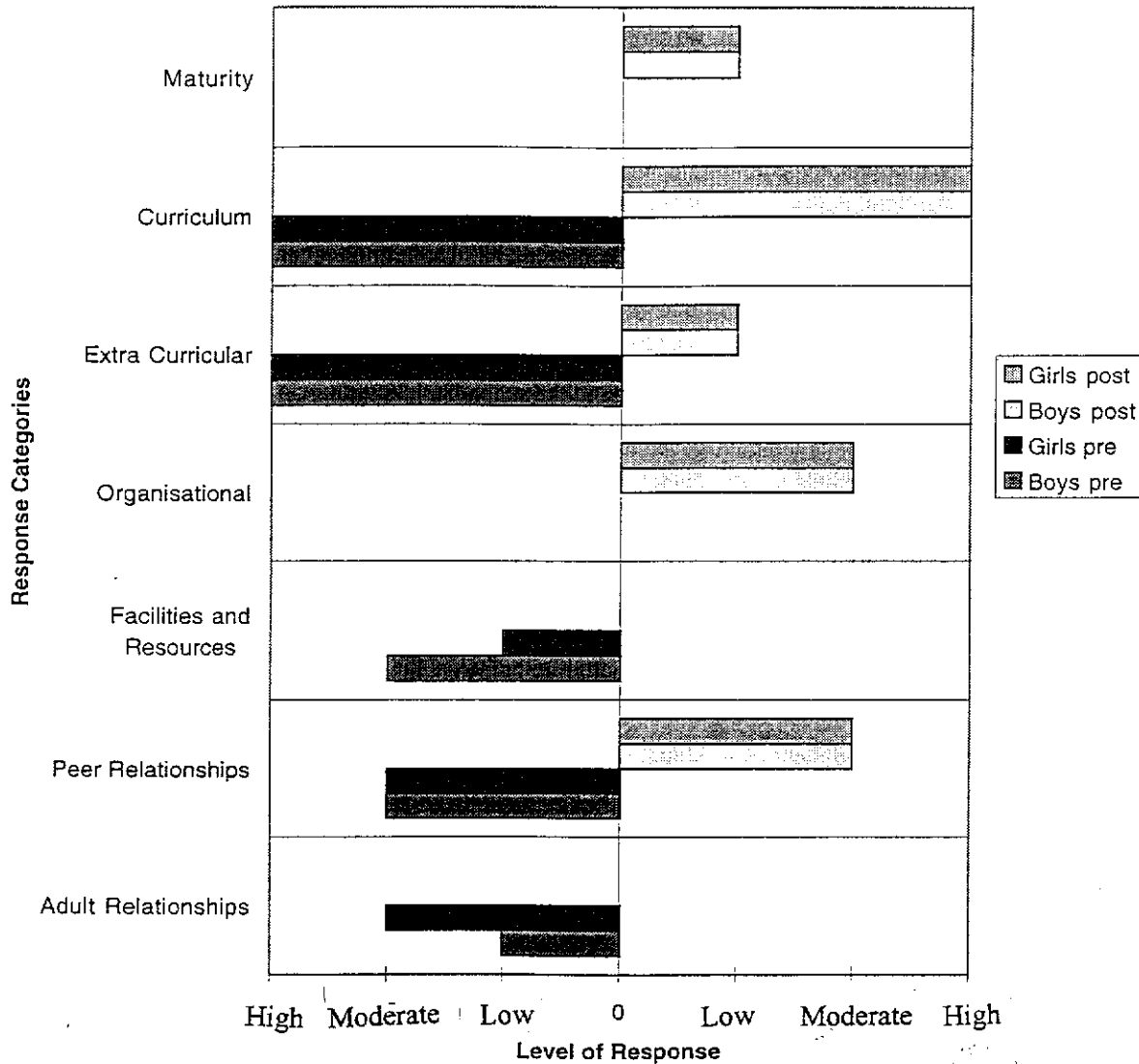
Post-transition, many girls carried nostalgic yearnings for the closer relationships and closeted atmosphere of the primary school that they largely enjoyed. They missed the close relationships with their teacher, in particular. Many boys, by contrast, were pleased that primary school had been left behind, even if it was perceived as providing some good experiences. For them, secondary school was anticipated as a distinct improvement, but at the time of data collection, this still remained more of an expectation than a reality. This was partially because the things that made them like school were still largely denied them.

4.5.4 Sex Differences in Students' School-Based Priorities During Transition

Throughout much of the qualitative data focussing upon school generally and transition interests, perceptions and experiences exhibited distinct student sex-based differences. To summarise those differences, responses to the various questions (grade 6 or grade 7) that focussed upon what aspects of school students liked were summarised into seven categories. These were derived from the data and constituted the major "response categories" that arose from the spreadsheet summaries (see Section 3.8). Variations in response categories across transition were evident, as were some sex differences. These patterns are represented diagrammatically in Figure 4.1.

The next section contains a summary and discussion of the data derived from the second section of each questionnaire (see Section 3.5) involving students' ratings in terms of attitude towards the various

subjects which they studied in both primary and secondary contexts. The section also includes qualitative data that provides further insight into the students' attitudes towards the curriculum.



High response = at least 66.6% of the sample
 Moderate response = between 33.3% & 66.6%
 Low response = between 10% & 33.3%
 Response groups with less than 10% response are not included

Figure 4.1 Categories of Aspects of School Liked by Students Pre (Grade 6) and Post (Grade 7) Transition with Sex Differences Highlighted (N = 1040)

4.6 The Curriculum

This section includes detail of students' attitudes and priorities concerning the curriculum experienced pre- and post-transition.

In the questionnaire items, students were asked in grade 6 and in grade 7: "Do you think you are good at the schoolwork you do here?". This question provided some insight into students' perceptions of the level of difficulty of, and their interest in, the curriculum. In addition, while still in grade 6, students were asked, "Which subjects are you most looking forward to in high school, and why are you looking forward to them?"

Students were also asked to rate each subject to represent their "liking" of it on a five-point scale, in grade 6 and again in grade 7 (see Sections 3.6 and 3.8 for the methodology used). The results gained from each of these questions are reported and discussed in this section. Section 4.6.1 includes discussion of students' ratings of the areas of the primary school curriculum. Section 4.6.2 reports on how students' anticipated they would enjoy the subjects within the secondary curriculum, and section 4.6.3 how they rated these subjects after experiencing them in secondary school. Finally, general curriculum issues and pre- and post-transition comparisons of the curriculum are discussed (4.6.4).

4.6.1 The Primary Curriculum

Responses to 'Are you good at your schoolwork?' in grade 6 and grade 7 are shown in Table 4.2.

Table 4.2 **Student Self-Perception of Aptitude:
Primary and Secondary School**

Type of Response	% Response					
	Grade 6			Grade 7		
	Males	Females	Total	Males	Females	Total
Negative	08	07	07	05	07	06
Neutral	61	63	62	39	42	40
Positive	31	30	31	56	51	54

[N= 1040]

Few students considered the general level of work too difficult for them. Most answers were neutral (e.g. "I am alright" and "I can do some things") and approximately one third of students were very positive about their ability to do their work well. Sex differences were negligible, unlike the greater positive response by girls to the "Like of School" question at the same stage. This variation suggests that perceptions of ability and work difficulty were not key factors in determining boys' comparative dislike of primary school.

One recurring complaint by grade 6 students, especially the boys, was that the teachers choose the curriculum content and did not select things in which the boys were most interested (seen as a consequence of most teachers being female). Although specific data on what was taught and in what quantity were not collected, some indication was gained from the 'missing' category of responses in the subject rating question. Students were asked to omit any subject that they believed they had not done at all during grade 6. Some subjects were randomly missed by students but, as it was known that all students did study

English language and mathematics, this random error could be determined and was found to be just under 1%. Assuming this random error was consistent across all subjects, 1% was subtracted from each 'missing' group. From this calculation, the results reported in Table 4.4 were produced.

These data refer to students' perceptions of what they have experienced, not what was actually planned for and delivered by the teacher. It should also be noted that the question of degree of exposure was not considered; only whether students had experienced the subject at some time during grade 6 was considered.

Table 4.3 Percentage of Students Who Believed they had Studied a Subject During Grade 6

Subject	% of students perceiving some exposure
Mathematics	100
Art	100
English	100
Music	100
Physical Education	99
Sport	99
Science	97
Library	96
Social Science	91
Health	81
Computing	81
Drama	80
Technology	66
Lang. other than Eng. (LOTE)	36

[N=1040]

It was not feasible to treat secondary data similarly for comparison, because the grade 7 curriculum was modularised in many schools, with students changing subjects each term. (The secondary data were collected at the end of term one.)

Table 4.4 shows the mean score and standard deviation on a five-point scale for student 'liking' for each subject at the end of grade 6 and again after the first few weeks of grade 7. A response of "I hated it" equated to 1 and "I loved it" to 5.

Table 4.4 Students' Rating (Mean & Standard Deviation) of 'Liking' of Subjects Studied in Grade 6 & Grade 7

Subject	Grade 6				Grade 7			
	Mean Score			S. D	Mean Score			S.D
	Males	Females	Total	Total	Males	Females	Total	Total
Art	3.9	3.9	3.9	1.0	3.8	3.6	3.7	1.0
Computing	3.9	3.6	3.8	1.1	3.3	3.2	3.2	1.2
Drama	3.4	3.8	3.6	1.3	3.6	4.0	3.8	1.1
LOTE	2.4	2.7	2.6	1.4	2.8	3.0	3.9	1.2
Health	2.8	2.9	3.0	1.1	2.6	2.7	2.7	1.1
English	2.8	3.4	3.1	1.3	2.7	3.2	2.9	1.2
Library	3.2	3.2	3.2	1.3	3.0	2.8	2.9	1.2
Maths	3.1	3.0	3.0	1.5	2.9	2.8	2.8	1.3
Music	3.2	3.6	3.4	1.4	3.6	3.5	3.5	1.3
Physical Education	4.5	3.6	4.3	1.1	4.4	3.8	4.0	1.2
Science	3.6	3.0	3.3	1.4	3.7	3.1	3.3	1.3
Social Science	3.2	3.1	3.1	1.4	2.9	2.9	2.9	1.4
Sport	4.7	4.4	4.5	1.0	4.6	4.3	4.4	1.0
Technology /Craft	4.0	4.1	4.0	1.2	4.2	3.9	4.1	1.8

N= 1040 maximum. All expressed as mean response based upon a five-point scale

Table 4.4 also includes the mean score ratings for ‘liking of subjects’ which students gave to each subject studied in grade 7. As this study has a specific focus on science as a secondary school subject with a different teaching environment, more detailed results for this are presented in Table 4.5

Table 4.5 Percentage Frequency of Responses to a Student ‘Liking’ of Science Scale, Split by Sex

Response	% of the Group Response					
	Pre-Transition			Post-Transition		
	Male	Female	Total	Male	Female	Total
I hated it!	8	15	12	9	16	13
I didn’t like it much	11	19	21	12	15	13
Average	18	24	21	23	32	28
Good	28	21	24	25	22	24
I loved it!	35	21	28	31	15	22
	100	100	100	100	100	100

[N=1040]

Comparing the rating of science to other curriculum areas, it held a “midfield” position overall (mean score = 3.0). The more detailed data show little change in attitudes to science across the timeframe of the study. Student sex differences are evident, especially at the extremes, with a much greater number of girls declaring that they ‘hate it!’ and boys that they ‘like it’. These student sex-based differences are also retained across the transition.

The next section reports data that provide insight into how students expected the secondary curriculum to be before they made the transition from primary to secondary school.

4.6.2 Anticipation of the Secondary Curriculum

Responses to the question “Which subjects are you looking forward to in high school?” are presented in Table 4.6.

Table 4.6 **Percentage of Students Looking Forward to Secondary Subjects, Split by Sex**

Subject	% of Students Looking Forward		
	Total	Girls	Boys
Art	36.5	22.5	14.0
Sport/Phys.Ed.	32.0	12.0	20.0
Home economics	29.0	21.0	8.0
Materials design & tech.	27.5	10.0	19.0
Mathematics	20.0	10.3	9.7
Science	20.0	8.0	12.0
Speech & Drama	17.0	13.0	4.0
Music	13.5	7.5	6.0
English	10.0	6.0	4.0
Computing	10.0	6.0	4.0
LOTE	5.5	3.5	2.0
Social science	3.0	1.6	1.4
Health	0.8	0.5	0.3

[N=1040]

Preferences clearly displayed sex differences along the lines of traditional curriculum expectations, with the exception of mathematics. Although existing research would suggest that mathematics is seen as a subject not liked by girls both in Australia and elsewhere (Department of Employment, Education & Training, 1991; Grevholm

& Hanna, 1995). Mathematics exhibited the least sex differences within this context. One other surprise was speech and drama, which is a secondary school subject apparently with an image that was not at all compatible with the interests and intentions of the grade 6 boys.

The most common reasons given for looking forward to a particular subject in secondary school were enjoyment-related. Reasons given included “I enjoy it now”, “I think I will enjoy it”, “I find it fun” or “I think it will be fun” (52% of total responses, a majority being girls). The second most common reason that students nominated was perceived aptitude. These comments included that “I am good at it” or “it is my best subject” (17%, a majority being boys). The boys demonstrated a greater inclination to success and ability to do well when compared with the girls, who were more inclined to interest factors and the degree and nature of personal involvement.

Other reasons given for anticipating students would like a subject included that “it is hands on”, “the equipment/facilities” or preparation for “future studies” and a “career”. Responses that exhibited sex differences included “you learn things”, “it is about our world”, you make things”, “it is creative” and “you use your imagination”, (which were predominantly from girls) and “you do experiments”, “it is challenging” and “it sounds interesting”, (which were given predominantly by boys).

The next section includes a report on how the students’ perceived the secondary curriculum after the initial transition period was over.

4.6.3 Students' Perceptions of the Secondary Curriculum Post-Transition

Similar questions were asked of students concerning the secondary curriculum as for the primary one. Specifically, they were asked about their self-perceived aptitude (Table 4.2) and attitude (Table 4.4) in relation to the secondary curriculum. To gain insight into students' attitudes to different subjects, they were asked to rate each subject studied on a five-point scale from "I hate it!" to "like it!" as they were with the primary school subjects. These results are included in Table 4.4.

Responses to "Are you good at your schoolwork?" in grade 7 demonstrate that the students felt that the school work which they encountered in the early stages of secondary school was not too difficult for them. In fact, some of the more capable students complained that it was too easy and that it repeated what they did in primary school.

Subjects which proved to be popular in secondary school were, again, physical education and sport and technology (which exhibited considerable sex-based differences, if split into home-economics and materials, design and technology, as it still was in most schools). Languages other than English also proved to be popular with grade 7 students, most of whom now had some contact with the subject (whereas few did in grade 6). Science was still rated "mid-range" and was much more popular with boys than with girls. These sex-based differences in attitudes to science are particularly evident when the responses of students who "Hated it" or "Loved it" were considered (Table 4.5). The extreme negative group was dominated by the girls and the positive group by the boys.

Comparisons of students' perceptions of the curriculum across transition, including discussion of changes in attitudes towards various subjects, are discussed in the next section.

4.6.4 Curriculum Issues and Across-Transition Changes

Students, the boys in particular, were very critical of the degree of access that primary teachers were perceived to allow students to the total cross-section of the curriculum. To a large degree, the boys believed that the teachers' control of curriculum delivery, at least at the primary level, resulted in a feminisation of the curriculum and a consequent alienation of themselves. One clear inference from these comments is that there exists a causal link between the boys' perceived lack of curriculum access within the primary school and their negative attitude towards primary school in general.

Aspects often perceived by teachers as organisational constraints upon the curriculum within the secondary school, such as timetables, were accepted by such students as an improvement because of the guaranteed access to every subject that such constraints ensured. The consequent perceived broadening of curriculum access and increased curriculum variety resulted in students, even those who were quite negative about primary school, initially approaching secondary school with renewed enthusiasm. Subjects with a particularly strong positive influence were those offering something new, whether it be curriculum content or the learning environment in which it was delivered. There were consequent shifts in students' curriculum preferences in relation to the subjects encountered. Figure 4.2 is a graphical summary of student curriculum preferences before and after transition.

Subject preferences as reported in Table 4.4, demonstrated some clear sex differences, but not always as prior research would predict. Most notably, the subject with the least differential between girls and boys was mathematics, both in the grade 6 and grade 7 data. Science and technology were also quite low in sex-based differences in attitudes in primary school, but the gap had widened by the end of term one of secondary school.

Students' attitudes to school generally clearly became more positive when moving from primary to secondary school (Table 4.1), however this is not evident when comparing ratings of specific subjects (Figure 4.2). Most subjects (drama and LOTE being exceptions) showed some decline in student liking when compared before and after transition and some subjects (e.g. computing) in show a substantial decline. One reason given for this apparent contradiction was the increased

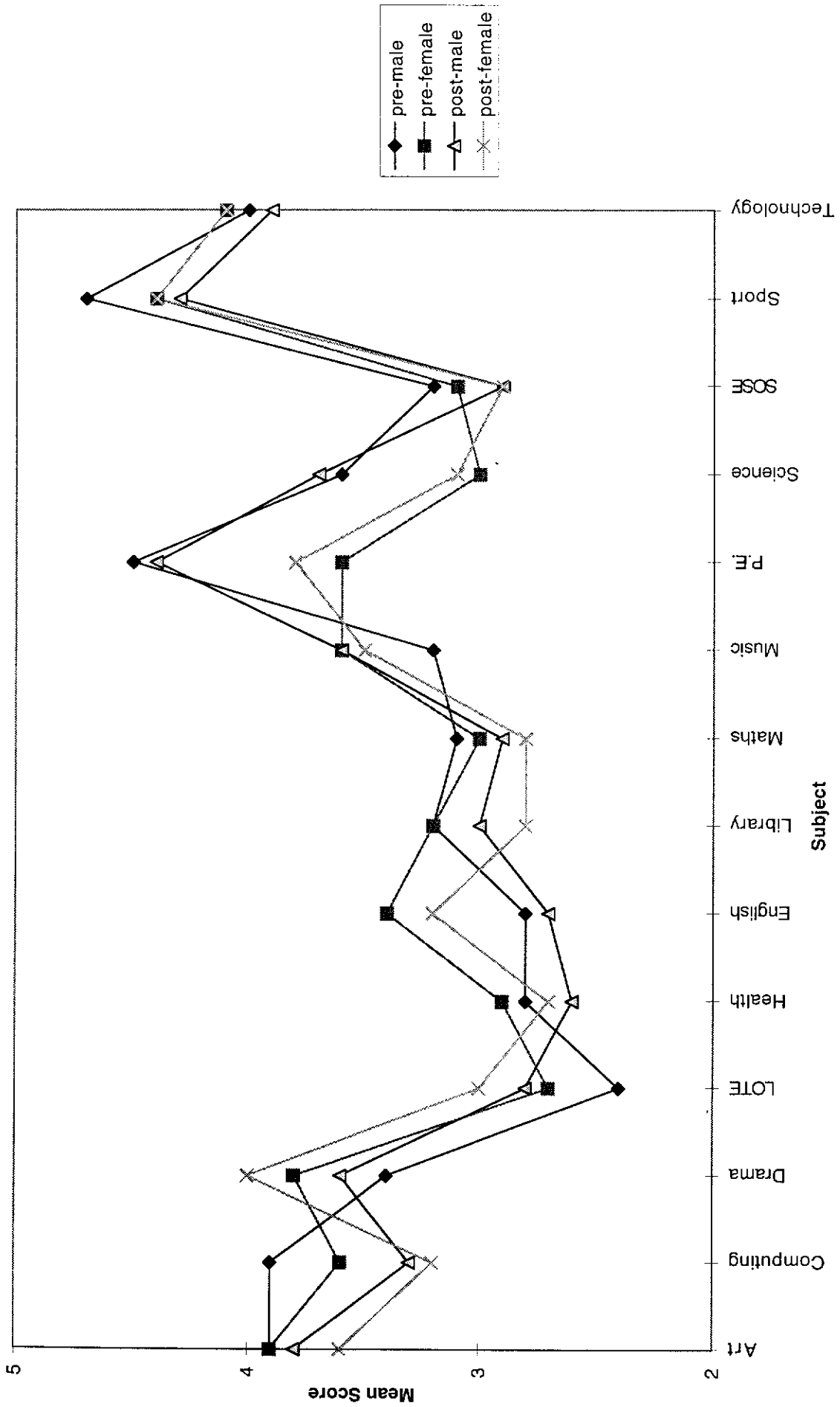


Figure 4.2 Graph of Changes in Students' 'Liking' of Subjects Across Transition [N=1040]

access to a variety of subjects and the provision of resources associated with them. However, on the like-dislike scale rating for individual subjects, more than 50% of the mean responses for specific subjects reduced across transition, while those that increased did so only marginally. This suggests that students' expectations in terms of the curriculum were not being realised and that their liking of secondary school was largely due to anticipation and optimism or extracurricular aspects of the school rather than what individual subjects were offered.

The subjects that best fitted the category of "new" were computing, speech and drama, languages other than English and the various forms of technology. Science can also be included within this group as it was seen to offer a physically different learning environment. Of this group of five subjects, students' attitudes increased on the "like" scale (mean value) for three (LOTE, drama and science), for one subject the rating stayed the same (technology), and for one student's attitudes decreased (computing). This suggests that the novelty factor was important in influencing students' subject preferences in the early stages of secondary school but that it was not the only influence.

One subject within this "new" group underwent a bigger reduction in student preferences than all of the subjects that were measured. This subject was computing, which potentially offers access to considerably greater (and new) resources, and which is anticipated as such by students. However, students claimed that they did not gain the degree of access to these resources that they had anticipated. Whereas their primary classroom usually had only one computer, perhaps shared with another class, it was available to students to use when convenient. In the secondary school, the computers were

usually kept together in a separate room and, according to the grade 7 students, older students clearly had priority access, particug out-of-class times.

The number of students who felt that the level of difficulty of school work was beyond their capabilities was very low in both primary and secondary school. However, double the number considered themselves to be coping well with their school work in secondary school compared to grade 6, suggesting that the level of difficulty of work in grade 7 was generally well within the self-perceived ability levels of students. This conclusion is consistent with data for the *Difficulty scale* of the MCI (see Chapter 5). In regard to work-related difficulty, some students reported that the work in secondary school was “too easy” and “unchallenging”. This was particularly the case for students who had done very well at a particular subject in primary school and were looking forward to a greater challenge in secondary school. Such responses were most common in reference to mathematics. For example, one student commented about grade 7 mathematics that “we could do the stuff we do now way back in grade 5!” For some students, this lack of anticipated challenge adversely influenced their attitude to the subject in general.

In summary, some clear patterns emerged by the end of term one of secondary school. The most positive aspects of school reported by students was in regard to the more mature and diverse social scene, but few students were as positive about in-class experiences. Of the in-class aspects, the diversity of teachers and subjects was seen as the greatest improvement, although individual subjects did not usually

The optimistic anticipation which students brought to the secondary curriculum began to fade and to be replaced by a more resigned attitude and a re-focus of energy into subject areas that were enjoyable or into social/extra-curricular outlets. In these early stages of secondary school, attitudinal losses towards mathematics and computing in particular were experienced, with this shift being most evident amongst those who loved it in primary school or those who particularly looked forward to the subject in secondary school. Science was not so harshly judged, with positive feelings being largely sustained by optimistic anticipation of “what we will do later”, rather than actual experiences thus far encountered.

The final section of this chapter provides a summary of key findings for each of the aspects discussed within the chapter.

4.7 Chapter Summary

Students generally expressed a positive attitude to both primary school and secondary school. However, a large group, particularly boys, had neutral feelings about primary school this group expressed a more positive attitude to secondary school. Two key reasons were given for this negativity to primary school, both perceived to especially disadvantage boys. As most primary teachers were female, it was perceived by male students that curriculum choices and approaches catered better to the interests and needs of the girls. Secondly, primary teachers were perceived to have a more personality-based behaviour management style, which the boys did not like (this is discussed in detail in Section 5.3).

In spite of these misgivings, most students described their primary schools as happy and friendly places, where students were treated well. Secondary schools were less secure and personal but much more exciting with greater variety.

In both school sectors students' social groups and roles were very sex-based. Issues such as student status and popularity and even school-related behavioural issues were described in sex-differentiated ways.

The transition between the two school sectors certainly signalled a parallel transition point in general development. Post-transition, students responded positively to perceived increased acceptance by older people, particularly teachers, of their growing maturity, and there existed a strong awareness of moving into a more adult culture. This brought with it a combination of excitement and concern about appropriate image and behaviour, particularly with older peers and new classmates coming from other primary schools. For many, the solution was to watch carefully and do what others did. This subtle peer pressure, driven by a strong desire to "fit in" and be accepted, often resulted in an increase in already prevalent social sex-based stereotyping. This sex-stereotypic behaviour was further reinforced by a rapidly evolving sexual identity.

The physical environment and facilities available to students were important and represented one of the key differences perceived between primary and secondary school. The boys were more inclined to relate to aspects outside the classroom, but some learning areas that provided a novel physical environment and access to new facilities within the secondary school (when it occurred) greatly impressed them (e.g. science and technology). The girls, by contrast, were more inclined to focus upon the non-physical aspects of the environment,

both within the classroom and around the school as a whole. Of much greater importance to the girls were the inter-personal elements of school. These constituted relationships with both peers and adults, particularly the teachers, (and especially within the primary school context).

The transition itself was described in terms similar to those of earlier studies, students were most concerned about teasing, bullying, getting lost, etc., but for the majority of students, the most extreme concerns (physical violence) never eventuated. However, the mere presence of older students exhibiting rough play and talking about, or participating, in activities such as smoking and drug-taking worried the new students a great deal.

By far the most common problems experienced by new secondary students were getting lost, being confused by the timetable and the number of teachers they had, and so on. The girls, in particular, felt somewhat nostalgic about the loss of personal space and teacher-student relationships that they had experienced in the primary school. Boys only expressed criticisms of the secondary school, if they felt that something was not available to them that they had been led to expect (such as access to computing/sporting facilities).

In terms of the curriculum, the greater variety of subject offerings and learning environments in the secondary school was received very positively by students. However, few individual subjects were rated more highly in the secondary school context, in terms of students' "liking", than they were in the primary context. In fact, most subjects decreased in students' rating on a five point scale (ranging from "I like it!" to an "I hate it!"). The variety and diversity was the basis of the appeal of the secondary school curriculum rather than the individual subjects themselves.

Science classes were rated slightly higher in secondary school than in the primary school, although in both contexts the boys rated it much more favourably than did the girls. The sex-difference was particularly marked at the extremes with a much greater percentage of the “I hate it!” ratings coming from girls, and the “I love it!” ratings coming from boys.

The next chapter reports research findings in relation to students’ perceptions of the learning environment including teacher interpersonal style aspects across transition. Specifically, the chapter is structured around findings relevant to Research Questions 2, 3 and 4.

CHAPTER 5

RESULTS AND DISCUSSION 2: CHANGES IN STUDENTS' LEARNING ENVIRONMENT PERCEPTIONS ACROSS PRIMARY TO SECONDARY TRANSITION

5.1 Introduction

This chapter includes documentation and discussion of the findings of the study related to the students' perceived changes in classroom learning environments during the primary-to-secondary school transition. These results were considered in terms of Research Questions 2, 3 and 4 as stated in Chapter 1. Specifically these questions relate to changes in students' perceptions of the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across the transition from primary to secondary school. Also considered were any variations in students' learning environment perceptions attributable to student sex or school size/ transition pathways factors.

As explained in the chapter on methodology (Section 3.10.2), a three-way multivariate analysis (MANOVA) with repeated measures on one factor was conducted with the set of 13 MCI and QTI dimensions comprising the dependent variables. The grade 6 versus grade 7 students' perceptions of these dimensions was the repeated measures factor ('trial') and the other two factors were student sex and transition size pathway. As they are relevant to, and analytically precede, consideration of Research Questions 2, 3 and 4, these MANOVA results are included within the first section (5.2) of this chapter.

The remaining sections address, in turn, subsequent analyses, results and discussion for each of the Research Questions 2, 3 and 4. Section 5.3 reports and discusses findings relevant to Research Question 2. As this research question draws on both qualitative and quantitative information, these are

considered in separate sections, with Section 5.3.1 reporting and discussing the qualitative findings, and Section 5.3.2 including analyses, results and discussion based upon the MCI and QTI scales. Section 5.3.3 includes and discusses graphical teacher profiles generated using the QTI model.

Section 5.4 reports and discusses the influence of student sex on learning environment perception changes, and Section 5.5 reports and discusses the influence of school size transition pathways on changes in environment perceptions.

The final section of this chapter (5.6) provides a summary highlighting key findings and issues relevant to Research Questions 2, 3 and 4.

5.2 Preliminary MANOVA

Analyses for Research Questions 2, 3 and 4 were based largely upon quantitative data derived from the MCI and QTI. These research questions focussed upon changes in learning environments, including teacher interpersonal style, during transition (Research Question 2), as well as sex differences (Research Question 3) and school size pathway differences (Research Question 4) in the changes in learning environment across transition. Analyses were performed separately for general subjects and for science within the secondary school context. (General subjects analyses were based upon data derived from a cross-section of all subjects commonly experienced by students in the first term of secondary school.) A three-way MANOVA was used to establish any significant change in the 13 MCI and QTI variables across transition, along with the significance of interactions between transition and student sex and between transition and school size pathway.

The 13 dependent variables measured were classroom *Satisfaction*, *Friction*, *Difficulty*, *Cohesiveness* and *Competitiveness* from the MCI and Teacher *Leadership*, *Helpfulness/Friendliness*, *Understanding*, allowance of *Student Responsibility/Freedom*, and Teacher *Uncertainty*, *Dissatisfaction*, *Admonishment*, and *Strictness* behaviour from the QTI. The individual was used as the unit of analysis because the sample size did not allow for a meaningful three-way MANOVA with the school mean as the unit of analysis as the total number of schools was only 48 primary schools and 16 secondary schools.

The results of the three-way MANOVA are shown in Table 5.1 separately for environment scores for general subjects and for science. The seven effects involved in Table 5.1 are:

1. The transition trial main effect (i.e.. changes in environment between grade 6 and grade 7), which corresponds to Research Question 2 and is of central importance to the study.
2. The student sex main effect, which is not important in terms of this study's research questions.
3. The school size pathway main effect, which is not of central importance to this study.
4. The transition trial x sex interaction effect, which corresponds to Research Question 3 (concerning differential changes across transition for boys and girls) and is of central importance to this study.
5. The transition trial x school size pathway interaction effect, which corresponds to Research Question 4 (concerning differential changes across transition for different school size pathways) and is of central relevance to this study.

6. The sex x school size pathway interaction effect, which is not relevant to the present study's research questions.
7. The three-way transition trial x sex x school size pathway interaction effect, which is relevant to the interpretation of the important two-way trial x sex and trial x pathway interactions.

Table 5.1 Three-Way MANOVA with Repeated Measures on One Factor for the Set of 13 Learning Environment Scales for Trial (Transition), Sex and School Size Pathway Performed Separately for general subjects and Science

Effect	F	
	General Subjects	Science
Trial (Transition) ^a	27.14**	10.78**
Sex	4.35**	2.72**
School Size Pathway	2.75**	2.18**
Trial x Sex ^a	2.68**	2.07**
Trial x Size ^a	1.87**	1.62**
Size x Sex	1.02	1.25
Trial x Sex x Size	1.08	1.17

(**p<.01; N=1040)

^a These three effects are of central importance and correspond to Research Questions 2, 3 and 4.

The MANOVA yielded identical results for general subjects and science (Table 5.1). There existed statistically significant results for the trial effect (changes in students' perceptions across transition) (Research Question 2). Because the three-way interaction was not significant, it was meaningful to interpret the two-way interactions. Although both sex and school size pathway main effects were significant, they are not of major relevance to this study's research

questions. Both the trial x sex interaction and the trial x pathway interaction were statistically significant and are of central importance to this study.

The results of the three-way MANOVA suggest a significant transition effect in relation to the set of 13 variables measured, but also that interpretations of this effect should be treated separately for boys and girls and separately for different school size transition pathways.

To reduce the Type 1 error rate, the three-way MANOVA for the whole set of 13 scales was performed first, and then an the individual three-way ANOVA for each of 13 environment scales was interpreted only after the MANOVA produced significant results. The results of the three-way ANOVAs were used to answer Research Questions 2, 3 and 4, and these results are listed and discussed in Sections 5.3, 5.4 and 5.5, respectively.

5.3 Research Question 2: Changes in Learning Environment Perceptions Across Transition

This section provides and includes discussion of the results relevant to Research Question 2 as stated in Chapter 1:

Do students perceive changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 2 is answered by both qualitative and quantitative information. The qualitative data describe students' general perceptions of their primary and secondary learning environments, including students perceptions'

of the role and style of the teachers within the two school sectors. The qualitative data relevant to this question are reported in the Section 5.3.1 and are followed in Section 5.3.2 by data derived from the MCI and QTI, along with further analyses and discussion.

5.3.1 Changes in Students' Perceptions of Classroom Learning Environments and Teachers Across Transition: Qualitative Data

As Research Question 2 relates to changes in students' perceptions of the learning environment across transition, some of the qualitative data was relevant to this question. Specifically, in grade 6 and 7, students were asked "What do you like about your teacher(s)?" and, in grade 7, they were asked "How do high school teachers differ from grade 6 teachers?" Although not directly relevant to the research question as stated, because some of the students' responses were outside of the parameters defined by the MCI and QTI, these qualitative findings were often helpful in interpreting the quantitative results; consequently are reported in some detail here.

The Primary Teachers

Students were asked to list as many traits as possible that they "liked about their grade 6 teacher". Most important was having "a sense of humour" or being "funny" (22% of total responses). Other characteristics were "nice", "kind", "smart", "helpful" and "understanding". More individualistic responses described teachers who were "strict", but not "crabby", and who treated students fairly (e.g. they "only get angry when necessary" and are "easy to get along with" and "not bossy").

Liked teachers were also described as “sympathetic” and “fair” in that they “include everyone” and are “interested in us”, “let us have a say” and “allow us to choose some work”. Students also responded favourably to those teachers whom they felt catered to their interests and needs. This was described as “having interesting/fun work” and “variety”, and these teachers could “even make the hard work fun”. The popular primary teacher “controls the class” and “makes you work hard” but, at the same time, was “supportive”, “cares for everyone”, was “hardworking” and “good at things themselves”, and had a “happy” and “enthusiastic” manner. There were some “nothing” responses, but these comprised only 1.3% of the total and all were from boys. (Students were asked to nominate only things that they liked about the teacher and to focus upon positive traits.)

Students were also asked “What makes students popular with the teachers in this school” (particularly the grade 6 teachers)? The most common response (29%) was related to work success (e.g. “be smart”, “get good marks”, “get your work right”), and the majority of these responses were made by boys. The next most frequent response group (21%) related to behavioural aspects (e.g. “be well behaved”, “do the right thing”) or involved negative expressions (e.g. being a “suckhole”, “teacher’s pet” or “goody goody”[14%]). Again the majority of these responses came from boys. The final major response category was work-attitude related (13%) and included to “work hard” and “do your best”.

Other responses included to “be polite”, “do jobs for the teacher”, “help others”, “be friendly” and “have a sense of humour”, and all of these responses more commonly were made by girls than boys. Responses

made mainly by boys were to “do neat work”, “never complain”, “be quiet” and “be a girl”.

The boys’ responses suggested some resentment based upon a perceived sex difference in students’ ability to be successful in gaining positive attention from primary school teachers. Some individual responses to the question of “What makes students popular with the teacher?” that reinforced that message included “like the same things as the teacher” (elsewhere boys suggested that in the main they do not, whereas the girls do) and “be the same sex as the teacher” (a response mainly from girls suggesting that not only boys feel that there exists some sex-based prejudice). Similar comments to the same question were “girls because they are always so well behaved” and “they are all girls, I don’t know why, but they never get into trouble, and when they do they don’t get punished”. It was also implied by some students that this perceived situation existed because the girls were beneficiaries of current school policy (e.g. “they are all girls, because of sex equity”). Interestingly, if boys do gain the teacher’s attention, it was sometimes seen by others as weak or manipulative (e.g. “He is a sook. He always cries to get his own way” or “If he doesn’t get what he wants, he gets upset”).

The remaining students suggested getting attention from the teacher depended upon specific personality traits (e.g. “smile a lot”, “be co-operative”), special talents (e.g. “be able to sing”, “ask clever questions”) or appearance (e.g. “be good looking/pretty”, “dress well” and “wear your uniform right”).

The Secondary Teachers

Once in secondary school, the range of teachers was the most important aspect for students, particularly for boys. Three times as many boys as girls nominated “having a range of teachers” as the key positive aspect about starting secondary school. They also mentioned in a positive way the more even proportion of male and female teachers.

When asked “What makes students popular with the (grade 7) teachers?”, the boys’ responses were a little less resentful than their grade 6 responses, but considerable sex differences were still noted. To be “smart”, “get good marks” or “get your work right” were reflected in 37% of responses in grade 7, compared to only 29% in the primary school context, but this time the majority of such responses were from girls. The negative descriptions of the teacher’s favourites, such as “suckholes”, “goody goodies” and “pets” was the second most common response (17%), still with a male majority. An equally large group (this time mainly girls) gave less resentful, but ‘good behaviour’ descriptions, such as to “be well behaved” and “do the right thing”. To “work hard” or to “do your best” was the next most common response (15%, with a majority being girls). One grade 7 response that didn’t appear in the grade 6 data was to “work quickly” or to “get your work finished on time” (11%). This implied that pace of work was a more important issue for students within the secondary school compared with the primary school.

In the remaining responses, as with the grade 6 data, boys often described the characteristics which the girls exhibited to gain positive teacher attention, but still felt that they couldn’t, or didn’t want to, emulate them. These boys suggested that students who were popular

with the grade 7 teachers were girls because “they are more caring”, “they are girls and don’t get into trouble” or “because the boys always play up”. Still others noted a sex difference, but were more judgemental (e.g. “the girls, because the teachers are sexist”).

Many saw student popularity with secondary teachers as a question of a choice between two extremes of behaviour or personality, namely, being “really nice”, “smart” and “real good” or “mucking around” and being “naughty”.

Students suggested there existed a third group of students who gained teachers’ attention because they are somehow outsiders. This group included students “who need a lot of extra help” because “they can’t spell or read”, “don’t have many friends” or because “the teacher feels sorry for them”.

Remaining responses described special capabilities (e.g. “do neat work”, “be good at everything”, “be good at sport”), appearance (e.g. be “good looking/pretty”, “well dressed” and “speak well”) or behavioural characteristics (e.g. “having a good attitude”, being “helpful”, “sensible”, “not arguing” and “respecting others”).

There were other responses offered in grade 7 which did not appear in the grade 6 data, these including “flirting with teachers”, “teachers knowing their older brother/sister”, “having a lot of self discipline”, being “physically mature” and having “girlfriends” or “boyfriends”. This indicates a shift in the nature of the relationship between teachers and students (as perceived by some students), when compared with the

grade 6 context. This shift was due, in part at least, to the social and physical development of the students.

Primary/Secondary Teacher Comparisons

After approximately three months of secondary school, students were asked to comment upon their teachers in comparison to those whom they had experienced in primary grades, specifically grade 6. The specific question which they were asked was “What is the difference between primary and high school teachers?”

The most common response to this question was an interesting one. Contrary to what anecdotal evidence, based upon views held by many teachers, would suggest, 25% of students said that the difference amounted to “nothing” or that “all teachers are different and there are just more of them in secondary school and therefore more variety” (14.5%). These answers suggested that a considerable number of students perceived little or no real difference between the primary and secondary teachers as distinct groups.

The only difference between the two groups of teachers agreed by greater than 10% of students was that “they are more strict in high school” (24%), a perception shared equally by boys and girls. However there was disagreement within the total group about whether more strict meant greater control. Students described their primary teachers as having positive leadership and, generally, good class control. By comparison, the secondary teachers are “more strict” but “less bossy” and “focus more on naughty kids”. They “yell more” and are “more violent” but “have less control” than primary teachers.

Other responses suggested that secondary school teachers are comparatively “meaner” and personally “more casual”, but at the same time “more business like”. The term ‘casual’ referred to the teachers’ personality, clothes and language aspects, in particular, whereas the term “business like” referred to their general organisation and approach to teaching/learning. Students perceived that “high school teachers are more professional because they have to stick to the time” and they “get straight to the point”, whereas primary teachers “fiddle around a lot”.

Other comments suggested that secondary teachers are “specialised and therefore know more about what they teach” and that they consequently “explained things better” and “understand work-related problems much better”, but that they “understand personal problems less well”. They have “greater expectations”, “give much more homework” and are “less protective” and “less cheerful”.

On balance, although secondary school teachers were perceived by students to have faults, there was a strong feeling that the individual inadequacies of teachers were outweighed by the benefits of having a range of teachers. Students commented that “if you get into trouble, you don’t have to put up with them (teachers) being angry with you all day”, “high school teachers don’t say you are hopeless at everything, because there might be something you are good at that they don’t teach and so don’t know about” and “we like the change of teachers, and we think they like the change of pupils”. Students linked the variety of teachers to greater work variety “because there are different teachers to think of more work than the primary teachers who have to think of it all”.

There was general agreement amongst students about the reduced pastoral care aspect in secondary school, with some exceptions. Typical comments included “high school teachers just tell you what to do and put it in front of you”, they don’t “become attached to one class and so they are less nice to you”, they “care less about you when you are having a bad day”, “don’t concentrate on people as individuals”, “don’t have time to go through my work with me like in grade 6” and “only care about the subject they are teaching”. The exceptions often came from boys and related to the presence of more male teachers (e.g. “we have some male teachers and you can talk to them like a friend”). Some boys felt this was better than having more pastoral care time with a (female) teacher with whom they found it difficult to relate. Students also suggested that one consequence of the greater subject specialisation of teachers was a reduced need for some (learning-related) pastoral care (e.g. “they (the teachers) understand straight away what you don’t understand because they teach the same thing to lots of different kids our age”).

Students’ comments suggest an acceptance by secondary teachers of the students’ increased maturity. Students found that secondary teachers “treat you as an intelligent person, and not as a child”, “continually remind you that you are growing up”, “don’t crowd you as much”, “trust you more and give more responsibilities”, “treat you as more important because you are older” and even “let you argue with them” and don’t do “childish” and “sissy” things. The primary teachers by contrast were accused of “treating us like we are still in grade 4” or even “like two year olds”, although one girl suggested that “in primary school, they treat you as the age you are, (whereas) high school teachers treat you as if you are some kind of celebrity”. Teacher

responses to increased student maturity manifested in other ways, such as secondary school teachers “giving more information to us”, “having different ways of wording instructions” and generally “using different words” and even “sometimes swearing”.

Many of the remaining responses were somewhat contradictory. Probably comparisons made by each student rested very much on the nature of the one specific grade 6 teacher whom they had experienced, against an assortment of grade 7 teachers, resulting in a ‘concentration’ of characteristics attributed to the primary teacher (i.e. this teacher was seen as a ‘typical’ primary teacher). The suggestion that secondary teachers “talk less” and “talk more” was one example of such contradiction. There was general agreement that, although an occasional primary teacher was violent (e.g. “our teacher last year threw desks”) and that they tended to be “crabby”, “bossy” and “nag”, secondary school teachers were generally described as being “more serious”, “louder”, “less patient”, “yelling more” and “having more rules”.

Summary of Teacher Descriptions and Comparisons

Teachers liked by students the most were those whom they felt created an environment conducive to learning (students wanted to feel that they were progressing) and had a co-operative and understanding nature combined with a sense of fun or humour. Conversely, less popular teachers were perceived to be admonishing and to base their classroom control on personality factors (e.g. “bossiness”). The boys felt that they were often the victims in these classes, and many felt that the only way to avoid perceived unreasonable treatment from such teachers was to be, or behave like, a girl. This was something which they felt that

they could not (or did not want to) do, for sex-stereotypic reasons and partly because they felt that they simply didn't know how to behave like a girl. The boys implied that there existed subtleties within the relationships between the girls and the predominantly female teachers that were beyond their understanding or, at the very least, that they would always remain outside of regardless of their efforts. This resulted in considerable sex-based resentment towards primary teachers.

In many ways, secondary teachers were perceived to be worse than primary teachers, more aggressive, less understanding and generally more strict than their primary counterparts. However, this strictness related more to work outcomes and "obvious" misbehaviour and therefore was perceived to be less personality-based than primary school teacher strictness. The boys in particular saw this as preferable, but both boys and girls suggested that secondary teachers' greater need to use aggressive strategies (e.g. yelling, threatening) meant that they had less class control.

These differences aside, students felt that "teachers were teachers" regardless of whether they were primary or secondary, and that the greatest perceived difference between the two groups was simply due to exposure to a greater number of secondary teachers and therefore less concentrated time to have to put up with their faults. Students' perceptions of the individual inadequacies of secondary teachers were to a large degree outweighed by the impact of the greater range of teachers to whom the students were exposed. Therefore, it could be hypothesised that, by reducing the number of teachers to whom students were exposed in early secondary school (a common trait of

middle school programs), teacher interaction strengths and weaknesses would become much more influential.

Students felt that secondary teachers had increased work expectations of students when compared with primary teachers, but that this was related to quantity of work and meeting deadlines rather than to quality. Secondary teachers were also described as more subject-competent and focussed, but much less focussed upon, and competent, when dealing with relationship and personal issues. Secondary teachers were described as having a management style that was much more impersonal and 'business like'.

One positive perception of the interpersonal style of secondary teachers was that students were treated much more maturely. A criticism of primary teachers was their propensity to treat the students as if they were much younger than they were. Secondary teachers, by contrast, treated students as young adults to some extent. This appealed very much to all students.

Students clearly accepted that the role of the teacher was extremely important in terms of their enjoyment and satisfaction within a particular class or subject. Qualitative data also suggest that the students believed that elements of teacher interpersonal style were key factors contributing to the learning environment generally. Eight specific aspects of teachers' interpersonal behaviour were also researched within this study using the *Questionnaire on Teacher Interaction (QTI)*. The next section reports on the results derived using the MCI and the QTI to investigate changes in students' perceptions of their learning environments, including teachers interpersonal style, across transition.

5.3.2 Changes in Students' Perceptions of Learning Environments, Across Transition, as Measured by the MCI and QTI: Quantitative Data

Central to the study was the measurement of changes in students' perceptions of specific dimensions of the classroom learning environment. These dimensions are those defined by the scales of the *My Class Inventory (MCI)* and the *Questionnaire on Teacher Interaction (QTI)*. As discussed previously in Section 5.2 and reported in Table 5.1, the analysis of the MCI and the QTI data commenced with a three-way MANOVA with repeated measures on one factor. The trial (grade 6 versus grade 7 environments) was the repeated measure factor (along with student sex and school size pathway as the other factors). The analysis was performed separately for 'general (secondary) subjects' and science.

Although the MANOVA results in Table 5.1 suggest that changes in students' perceptions over transition should be considered in conjunction with student sex and school size pathways, general changes in perceptions are of such central importance to this study that they also are considered separately. These general changes are reported and discussed in this section and correspond to Research Question 2.

Because significant effects were found in the three-way MANOVA (Table 5.1), a three-way ANOVA with repeated measures on one factor was undertaken separately for each of 13 MCI and QTI variables with transition trial as the repeated measures factor and with student sex and school size pathway as the other factors, and with the individual as the unit of analysis. Separate ANOVAs were completed with the grade 6 actual and grade 7 general subjects perceptions and with the grade 6 actual and grade 7 science perceptions. Results for these ANOVAs are

reported in Tables 5.2 and 5.3 only for the three effects that are directly related to the present study's research questions: the transition trial effect (Research Question 2); the trial x sex interaction effect (Research Question 3); and the trial x school size pathway interaction effect (Research Question 4).

Tables 5.2 and 5.3 show that the transition trial effect was statistically significant ($p < .01$) for each of the 13 environment scales for both general subjects and science. This means that students' perceptions changed across transition for all 13 environment variables when comparing grade 6 classrooms with either grade 7 classrooms generally, or with grade 7 science ones in particular.

In order to interpret the ANOVA results in Table 5.2, the means and standard deviations for each MCI scale are shown in Table 5.4 for grade 6 actual perceptions, grade 7 science perceptions and grade 7 general subjects perceptions for two units of analysis (the individual and the school). In addition, to further help with interpretation, means and standard deviations are included for grade 6 students' preferred learning environment in grade 6. Furthermore, changes in scale mean scores in Table 5.4 are shown graphically in Figure 5.1. Similar information on scale means and standard deviations is shown in Table 5.5 for the eight QTI scales. Also figure 5.1 provides a graphical depiction of changes for QTI scale means across transition.

Table 5.2 Results of Three-way ANOVA with Repeated Measures on One Factor for each of 13 MCI and QTI Scales for Trial (Transition), Trial x Sex and Trial x School Size for general subjects

Scale	F Value for		
	<u>Trial</u>	<u>Trial x sex</u>	<u>Trial x</u> <u>Size</u>
MCI			
Satisfaction	31.22**	4.11*	1.27
Friction	106.63**	4.06*	2.37*
Difficulty	34.92**	10.06**	1.02
Cohesiveness	129.64**	5.13*	2.32*
Competitiveness	94.69**	0.23	1.79
QTI			
Leadership	53.56**	22.01**	0.25
Helpful/Friend.	65.87**	9.69**	1.97
Understanding	107.23**	9.44**	0.69
Student Respons/ Freedom	19.45**	0.13	3.10*
Uncertainty	83.47**	37.00**	0.82
Dissatisfaction	101.54**	20.63**	1.40
Admonishment	66.93**	7.83**	0.54
Strict	40.19**	9.78**	1.44

N=1 040

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

Comparisons of scale means across transition (Figure 5.1) are reasonably consistent for science and general subjects with the changes in students' perceptions across transition being favourable for some dimensions and unfavourable for others. For both science and general subjects, students perceived improvements in their classroom environment across transition in terms of less *Friction*, less *Difficulty*, less *Competitiveness*, and less *Strict* teacher behaviour. A deterioration in both science and general subjects

environments were perceived in terms of less *Cohesiveness* and *Leadership*, *Helpfulness/Friendliness*, *Understanding* and *Student Responsibility/Freedom* behaviour.

Table 5.3 **Results for Three-way ANOVA with Repeated Measures on One Factor for each of 13 MCI and QTI Scales for Trial (Transition), Trial x Sex and Trial x School Size for Science**

Scale	F		
	Trial	Trial x sex	Trial x
MCI			
Satisfaction	99.63**	1.36	0.42
Friction	117.40**	5.52**	1.83
Difficulty	80.54**	16.00**	1.74
Cohesiveness	153.13**	4.33*	3.61**
Competitiveness	163.4**	1.30	2.68*
QTI			
Leadership	64.27**	2.59	0.25
Helpful/Friend.	42.43**	1.16	0.95
Understanding	83.78**	3.86*	0.98
Student Respons/ Freedom	33.04**	0.01	1.12
Uncertainty	83.04**	10.70*	1.87
Dissatisfaction	71.66**	11.05**	1.06
Admonishment	67.17**	10.09**	0.73
Strict	66.56**	0.91	0.51

N=1 040

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

The two dimensions on which changes between grade 6 and grade 7 were greatest for both science and general subjects were *Friction* and

Competitiveness (around 2.5 raw score points or approximately two-thirds of a standard deviation). For QTI scales, the changes across transition generally were larger for science than for general subjects (Figure 5.1).

Table 5.4 **Mean Score and Standard Deviation for MCI Scales for Grade 6 Actual, Grade 6 Preferred, Grade 7 Science and Grade 7 General Teachers/Classrooms for Two Units of Analysis (Individual & School Mean)**

MCI Scale	Form	No. of Items	Student		School	
			Mean	S D	Mean	SD
Satisfaction	6 actual	9	19.6	5.2	19.3	3.0
	6 preferred	9	23.9	4.1	24.0	1.4
	7 science	9	19.4	5.0	19.2	2.2
	7 general	9	19.8	5.3	19.5	2.1
Friction	6 actual	8	18.6	3.7	19.0	2.0
	6 preferred	8	12.4	4.9	12.1	1.9
	7 science	8	16.8	4.1	17.0	1.9
	7 general	8	16.0	4.0	16.2	1.7
Difficulty	6 actual	7	10.1	2.7	10.2	1.0
	6 preferred	7	9.6	2.8	9.6	0.9
	7 science	7	9.6	2.7	9.6	0.8
	7 general	7	9.7	3.0	9.6	0.8
Cohesiveness	6 actual	5	11.3	3.4	11.3	1.5
	6 preferred	5	15.1	3.6	15.2	1.3
	7 science	5	11.0	3.4	10.9	1.3
	7 general	5	11.1	3.6	10.9	1.2
Competitiveness	6 actual	7	16.6	3.4	16.9	1.2
	6 preferred	7	12.1	4.2	11.9	1.5
	7 science	7	14.8	4.0	14.9	1.5
	7 general	7	14.1	4.1	14.3	1.3

N=1040 Individual Students: N=47 (Grade 6 Schools) & 16 (Grade 7 Schools)

Table 5.5 Mean Score and Standard Deviation for QTI Scales for Grade 6 Actual, Grade 6 Preferred, Grade 7 Science and Grade 7 General Teachers/Classrooms for Two Units of Analysis (Individual & School Mean)

MCI Scale	Form	No. of Items	Student		School	
			Mean	S D	Mean	SD
Leadership	6 actual	6	14.4	2.2	14.1	1.0
	6 preferred	6	16.1	1.9	16.1	0.7
	7 science	6	13.4	2.5	13.4	1.0
	7 general	6	13.9	2.8	13.8	0.8
Help/Friendly	6 actual	6	13.7	2.6	13.7	1.1
	6 preferred	6	16.0	2.0	16.0	0.8
	7 science	6	12.4	2.8	12.3	1.3
	7 general	6	13.0	3.1	12.9	1.0
Understanding	6 actual	6	13.9	2.7	13.7	1.1
	6 preferred	6	15.9	2.1	16.0	0.7
	7 science	6	12.7	2.8	12.6	1.2
	7 general	6	13.1	3.0	13.0	1.0
St. Resp./Free.	6 actual	6	10.9	1.9	8.0	0.6
	6 preferred	6	10.9	2.1	9.2	0.6
	7 science	6	9.9	2.0	7.1	0.7
	7 general	6	10.4	2.3	7.5	0.6
Uncertainty	6 actual	6	8.2	1.8	8.4	0.8
	6 preferred	6	7.7	1.7	7.7	0.5
	7 science	6	8.5	2.1	8.5	0.8
	7 general	6	8.5	2.2	8.5	0.8
Dissatisfaction	6 actual	6	9.2	2.4	9.2	0.9
	6 preferred	6	7.7	1.8	7.7	0.6
	7 science	6	9.6	2.5	9.6	1.1
	7 general	6	9.3	2.5	9.4	0.7
Admonishment	6 actual	6	10.7	2.8	10.7	1.4
	6 preferred	6	8.4	2.2	8.4	0.8
	7 science	6	10.8	2.9	10.8	1.3
	7 general	6	10.1	2.9	10.2	0.9
Strict	6 actual	5	12.2	1.8	14.4	0.8
	6 preferred	5	11.6	1.9	11.6	0.9
	7 science	5	11.8	2.0	14.4	0.8
	7 general	5	11.7	2.1	14.2	0.7

N=1040 Individual Students; N=47 (Grade 6 Schools) & 16 (Grade 7 Schools)

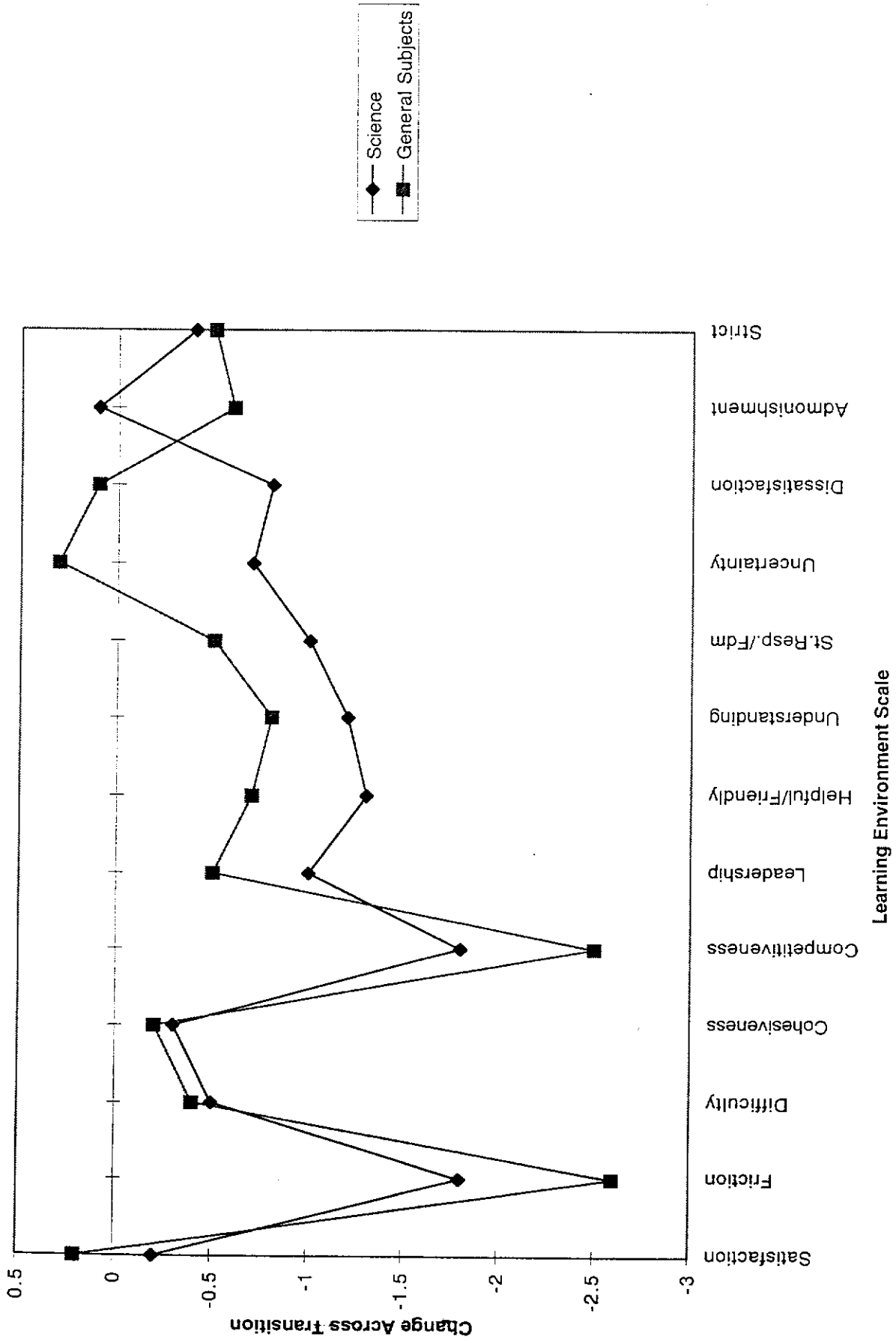


Figure 5.1 Change Across Transition for each MCI and QTI Scale for Science and 'General Subjects' (N=1040 Individuals)

The changes across transition varied in size and direction for science and general subjects for four scales. Whereas students perceived their science classes as having less *Satisfaction*, less *Uncertainty*, less *Dissatisfaction* and more *Admonishment* after transition, students saw the opposite for general subjects (i.e. greater *Satisfaction*, More *Uncertainty*, more *Dissatisfaction* and less *Admonishment* after transition).

Other research (Speering, 1996) tracked a small number of students beyond this beginning phase of secondary school (the boundary of this study) and found increasing student dissatisfaction with secondary classes (specifically science) as the students moved through the first years of secondary school. When students in the current study were questioned about their general level of liking of secondary classes, they were inclined to optimism and explained that these classes “were not good yet” but were soon “going to get better”. The research by Speering found similar initial optimism which later proved to be unfounded and therefore dissipated.

In the current study, students’ perceptions of class *Satisfaction* between late primary and the initial stages of secondary school did not greatly differ. However, there was a small significant decline in *Satisfaction* with science across transition. To some extent, this small variation is deceptive as there also was a significant transition trial x student sex interaction (as discussed in Section 5.4).

Comparing pre- and post-transition perceptions of the MCI scales with students’ preferences (see Table 5.5), it can be seen that *Friction* and *Competitiveness* decreased considerably, a positive move closer

to students' preferences, whilst *Cohesiveness* showed a slight decrease (a negative shift away from student preferences). Students' perceptions were that the level of *Difficulty* decreased slightly across transition to more or less coincide with their preferences. The most likely explanation of these trends is that, as class members were less familiar with each other in their new secondary situation, the degree of *Friction* and *Competitiveness* decreased, but so did the degree of class *Cohesiveness*. This is to be expected when comparing students who know each other well in a familiar environment with less familiar groupings in a new environment.

When comparing all other data sets (grade 6 actual classes, grade 7 general classes or grade 7 science classes) with student preferences, there is little coincidence for any scales (Table 5.5). With the possible exceptions of *Difficulty*, *Student Responsibility/Freedom*, teacher *Uncertainty* and *Strictness*, the mean scores are less favourable than the students would ideally like. This would suggest that, overall, teachers do not exhibit the degree of Dominant-Cooperative behaviour (as defined by the QTI model discussed in Section 2.5) that students would like at this age and stage of development. Grade 6 teachers were perceived to be better in terms of these dimensions when compared with their grade 7 counterparts, but still were short of what the students would ideally prefer.

Students' perceptions of changes in the teacher interaction dimension were evident from the QTI scores. The Dominance-Cooperation dimensions of teacher *Leadership*, *Helpfulness/Friendliness* and *Understanding* all showed a major move, across transition, away from student preferences (i.e. a negative shift). The Submission-

Opposition dimensions of teacher *Uncertainty*, *Dissatisfaction* and *Admonishment* changed slightly, with increases in perceived teacher *Dissatisfaction* and *Uncertainty*, but a reduction in *Admonishment*. Teacher *Admonishment* was particularly an issue for many boys who had described their grade 6 teachers as very “bossy” and particularly unfair to boys (see Section 5.3.1). However, secondary teachers were perceived more favourably, having a more rules-related *Strictness*. This, perhaps along with other factors, resulted in a reduction of perceived *Admonishment* across transition. *Student Responsibility/Freedom*, as measured by the QTI, decreased slightly across transition. This was in contrast to students’ comments that they were allowed greater freedom and choice in secondary school (see Section 5.3.1). This seeming contradiction is explained when it is realised that the increase in freedom described by students related to out-of-classroom choices rather than to classroom learning.

Using data from the QTI scales, student-perceived teacher profiles were generated using the octagon-style graphical representation described by the theoretical model outlined in Section 2.5. A separate profile was generated for the grade 6 actual teacher, the grade 6 ideal or best (preferred) teacher, the grade 7 actual general teacher and the grade 7 actual science teacher. These composite teacher profiles are included and discussed in the next section (5.3.3).

5.3.3 Teacher Profiles for the QTI

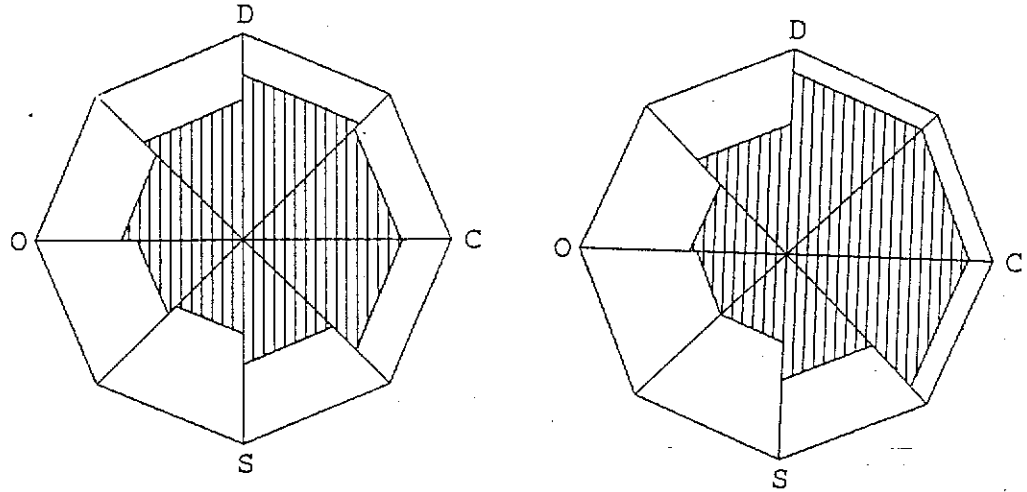
Mean results for the QTI data were used to generate teacher profiles as described by the theoretical model (see Section 2.5). Figure 5.2 contains composite teacher profiles for student ideal (best) teacher,

grade 6 actual teacher, grade 7 actual general subject teacher and grade 7 actual science teacher.

When compared to the profiles based upon the large-scale international research of Wubbels and associates (Section 2.5), it can be seen that the 'best teacher' or student "preferred" profile is consistent with other studies. Typically the 'best' teacher profile scores are very high on the Dominance-Cooperation dimensions, and very low on the Submission-Opposition dimensions. This ideal teacher type was described as "authoritative-tolerant" by Brekelmans, Levy and Rodriguez (1993, p. 48). The profile that most closely matched this ideal within the study was the grade 6 actual teacher profile. The grade 7 general teacher profile shows reduced authority-tolerance and increased opposition (i.e. a move away from the students' view of an ideal teacher) and the grade 7 science teacher profile represents an even greater move away from the "authoritative-tolerant" ideal. Compared with the 'general' grade 7 teacher, the science teacher profile has a reduction in students' perceptions of *Leadership*, *Helpfulness/Friendliness* and *Understanding* and an increase in *Admonishment* and *Dissatisfaction*. This represents a further move towards the Wubbels "uncertain-aggressive" teacher type, which is little liked by students.

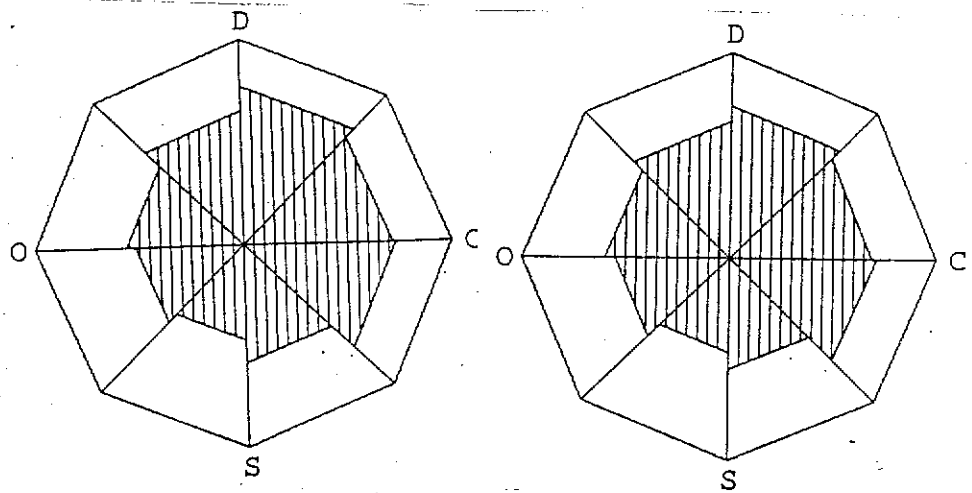
These profiles, then, place science teachers as a worst case example of junior secondary teachers when compared to student preferences and secondary teachers of other subjects. Profile comparisons between grade 6 actual teacher and grade 7 'general' teacher do exhibit the same negative shift (when compared with the 'best' teacher) as for

comparisons with the science teacher, but these changes are less in degree.



Profile 1: Actual Grade 6 Teacher

Profile 2: Preferred Grade 6 Teacher



Profile 3: Actual Grade 7 'General' Science Teacher

Profile 4: Actual Grade 7 Teacher

Figure 5.2: Four Teacher Profiles from the QTI

Overall, it can be concluded that, during this phase of early adolescence, student learning environment ideals are not being met, but the subtle shifts and changes over transition need further clarification. This is due in part to the presence of transition trial x sex interactions and the trial x school size interactions found to be as significant ($p < .01$) in the MANOVA analysis reported in Table 5.2. Combining the data for boys and girls, and for different school size transition pathways, has the effect of hiding some transitional changes within groups. Analysis and discussion of scales of the MCI and QTI for which a trial x sex interaction occurred are documented in the next section (5.4), whereas discussion of the trial x pathway interaction takes place in Section 5.5.

5.4 Research Question 3: Student Sex Differences in Changes in Learning Environment Perceptions Across Transition

The MANOVA reported in Table 5.1 showed that the two-way trial x sex interaction was significant ($p < .01$) but that the three-way trial x sex x pathway interaction was not significant. Therefore it is meaningful to consider the changes in students' perceptions of the MCI and the QTI scales split by sex, while ignoring school size pathway. The ANOVA results reported in Tables 5.2 and 5.3 show that the trial x sex interaction was significant for 11 environment scales for general subjects and for seven environment scales for science. These significant interactions form the focus for this section. In Chapter 1, Research Question 3 was stated as follows:

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition vary for student sex for:

i) grade 6 and grade 7 classes and teachers generally

ii) grade 6 and grade 7 science classes and teachers specifically?

Tables 5.6 and 5.7 provide boys' means and girls' means pre- and post-transition for the 11 MCI and QTI scales for which the ANOVA revealed a significant ($p < .05$) trial x sex interaction effect (see Table 5.2 for general subjects and Table 5.3 for science). Figures 5.3 and 5.4 graphically represent changes in environment scores across transition for boys and girls. These graphs show the change in students' perceptions, (i.e. the pre-transition mean score minus the post-transition mean score). Separate graphs depict changes in boys' and girls' mean scores.

Table 5.6 **Mean Scores for Boys and Girls Pre- and Post-Transition for Scales Demonstrating a Significant ($p < .05$) Trial x Sex Interaction for General Subjects**

Scale	Girls		Boys	
	Pre	Post	Pre	Post
MCI				
Satisfaction	20.6	20.3	18.6	19.3
Friction	18.5	15.7	18.8	16.3
Difficulty	9.8	9.4	10.6	10.1
Cohesiveness	11.8	11.5	10.8	10.7
QTI				
Leadership	14.8	14.3	14.0	13.3
Helpful/Fr.	14.4	14.3	13.0	12.5
Understanding	14.5	13.5	13.2	12.6
Uncertainty	7.9	8.1	8.6	9.1
Dissatisfaction	8.6	8.9	9.9	10.0
Admonishment	9.9	9.8	11.5	10.6
Strict	12.1	11.8	12.4	11.4

N=1040

Table 5.7 Mean Scores for Boys and Girls Pre- and Post-Transition for Scales Demonstrating a Significant ($p < .05$) Trial x Sex Interaction for Science

Scale	Girls		Boys	
	Pre	Post	Pre	Post
MCI				
Friction	18.5	17.6	18.7	17.6
Difficulty	9.8	9.2	10.6	10.1
Cohesiveness	11.8	11.3	10.8	10.6
QTI				
Understanding	14.5	13.0	13.2	12.3
Uncertainty	7.5	8.2	8.0	8.9
Dissatisfaction	8.6	9.2	9.9	10.1
Admonishment	9.9	10.4	11.5	11.3

N=1040

With the exception of *Competitiveness* (MCI) and *Student Responsibility/Freedom* (QTI), all scales had a significant trial x sex interaction for the grade 6 actual and grade 7 general samples (Table 5.2). For science, trial x sex interaction occurred for *Friction*, *Difficulty* and *Cohesiveness*, and for teacher *Understanding*, *Uncertainty*, *Dissatisfaction* and *Admonishment* (Table 5.3).

For the five MCI scales, Figure 5.3 shows that boys experienced more favourable changes during transition in terms of an increase in *Satisfaction* (compared with a decrease for girls), a larger decrease in *Difficulty* than girls, and a smaller decrease in *Cohesiveness*. On the other hand, girls experienced a more favourable change in terms of a larger reduction in *Friction* compared with boys.

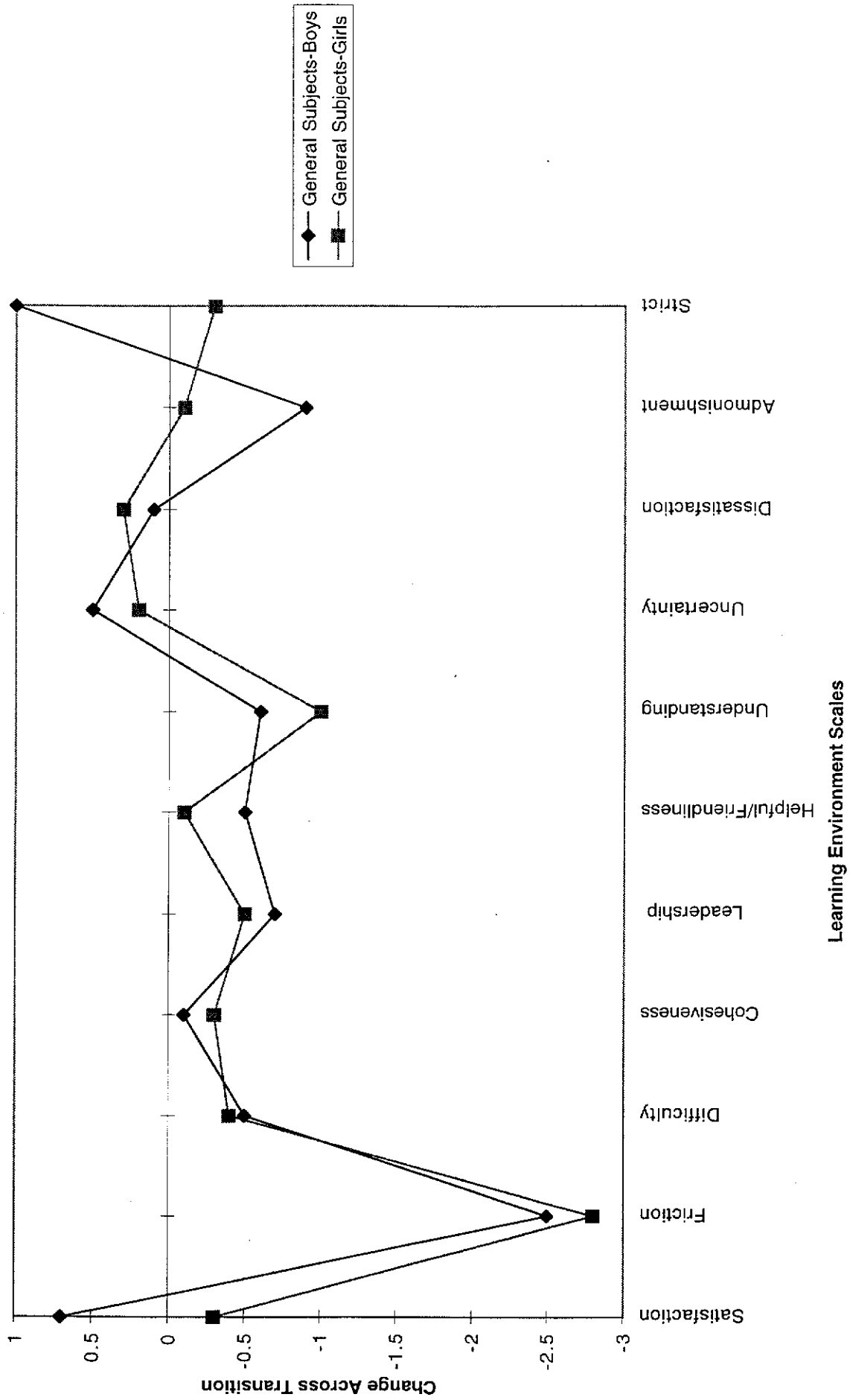


Figure 5.3: Change in Learning Environment Perceptions Across Transition for Boys and Girls for 'General Subjects' [N=1 040 Individuals]

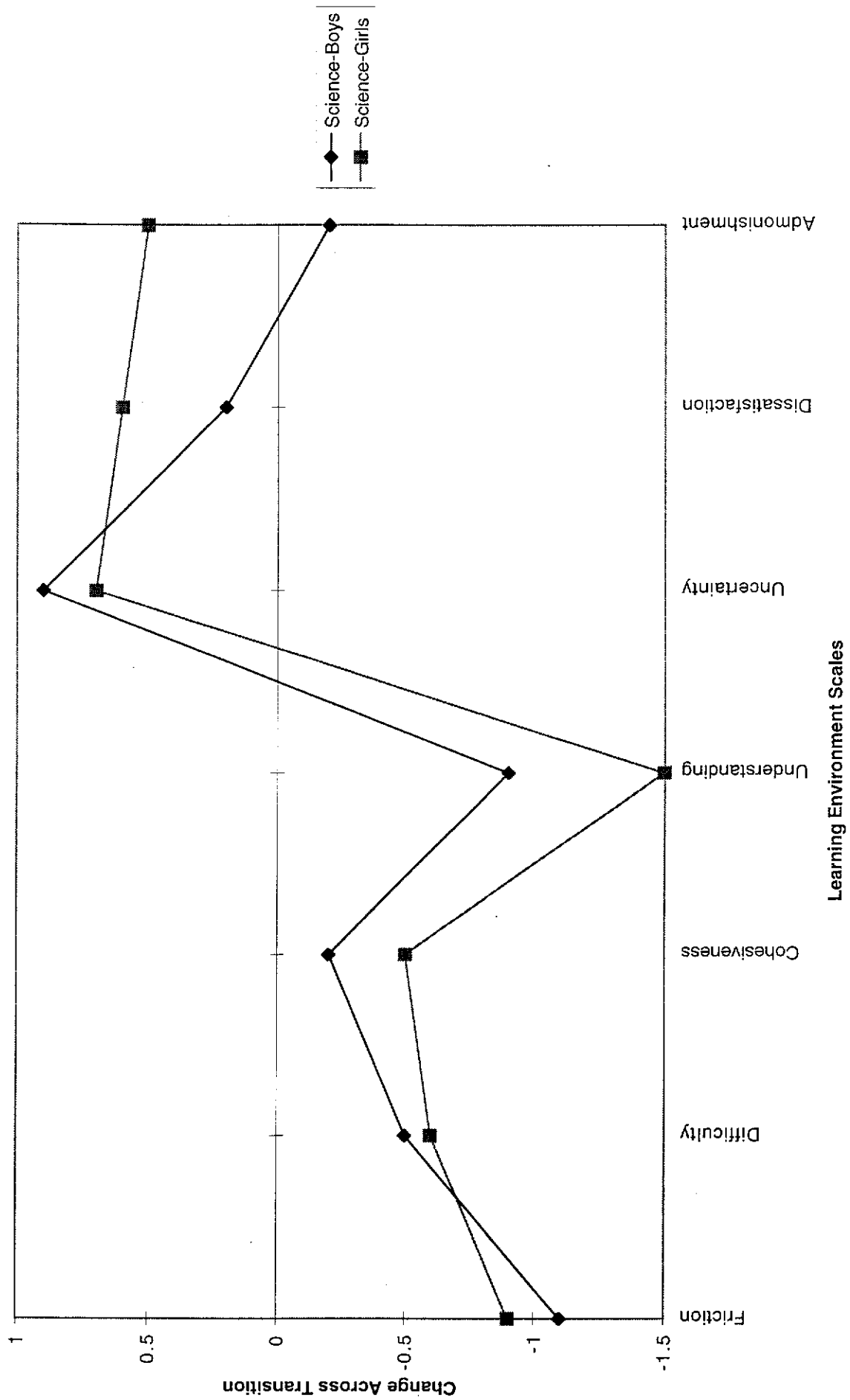


Figure 5.4 Change in Environment Perceptions Across Transition for Boys and Girls for Science
[N= 1 040 Individuals]

Overall, changes in *Satisfaction* across transition were small for the whole sample, this is because girls became slightly less satisfied and boys became more satisfied across transition (Figure 5.3). The qualitative data supported these patterns and suggested that the reasons were two-fold, one related to learning environment and the other related to curriculum. As mentioned earlier, boys found primary teachers to be “bossy” and thought that they constantly “picked on them” (whereas girls did not).

Secondly, as previously mentioned, the boys expressed a strong dissatisfaction based upon curriculum access. They claimed that the predominantly female primary teachers chose a curriculum focus more to the liking of girls than themselves, and that primary teachers generally chose to spend most time on things that interested them (i.e. the teachers). As a result of this perceived curriculum bias, the less academic boys in particular felt poorly catered for. This perception contributed to an overall feeling of dissatisfaction within primary classes.

For the teacher-student interaction variables assessed by the QTI scales, boys generally perceived more negative changes across transition than girls for general subjects (Figure 5.3). Figure 5.3 shows that girls experienced more positive changes than boys in teacher-student interaction across transition for most scales in terms of a smaller decrease in *Leadership* and *Helpful/Friendly* behaviours and a smaller increase in *Uncertainty* and *Strict* behaviours. On the other hand, boys experienced more positive changes than girls in terms of a smaller decrease in *Understanding* behaviour and a smaller increase in *Dissatisfied* behaviour and a smaller decrease in *Admonishing* behaviour.

However, the overall negative shift on the Dominance-Cooperation dimensions was less for boys than girls. Boys remained the most negative

throughout and, in fact, boys started with a more negative perception than the one with which girls finished in most instances (Table 5.6). For this reason, studies that focus purely on the degree of attitudinal or perception change in boys and girls and conclude that girls suffer more may be misleading. Girls did exhibit a negative shift in classroom perceptions across transition, as did the boys, but as the boys' perceptions were already very negative, the shift was less obvious. (However, in science, most of the changes are more favourable for the boys.) This is certainly the case with these environment data and may be true of other learning-related perceptions as well.

Consideration of both qualitative and quantitative data suggested that the key factor influencing girls' perception changes was the reduction in teacher *Understanding*. This was due to a combination of the changing relationship between teacher and student, the greater subject focus by secondary teachers and a reduction in personal contact with specific teachers. Teacher *Understanding* was a key issue for girls throughout and appeared often in the qualitative data. This interpretation is reflected clearly in the QTI data where shifts in this dimension are pronounced (Figure 5.3). The teacher *Understanding* scale was also of importance for students in regard to their perceptions of the secondary science learning environment.

Patterns of change in students' perceptions between grade 6 classrooms and grade 7 science classrooms (Figure 5.4) were fairly similar to changes between grade 6 classes and general grade 7 classes (Figure 5.3) Relative to girls, boys reported more favourable changes across transition in terms of a larger decrease in *Friction*, a smaller decrease in *Cohesiveness* and *Understanding*, a smaller increase in *Dissatisfaction* and a decrease in *Admonishment* (compared with an increase for girls). However, girls experienced a more favourable change in

terms of a larger decrease in *Difficulty* and a smaller increase in *Uncertainty* than boys.

When comparing science teachers with other secondary teachers, the greatest differences were in the teacher Dominance-Cooperation sector of the profile model (see Section 5.3.3). This is of interest because teacher *Understanding* lies within this sector and this is the teacher interpersonal style trait which is perhaps of greatest importance to girls. The perceived decrease in teacher *Understanding* was larger for the girls than for the boys (Figure 5.4).

It was the teacher interpersonal style dimension of the science class environment that was perceived the most negatively by students when comparing the actual class environments with ideals. This is of note given the important role that relationships played in girls' attitudes to school at this age.

Both girls and boys perceived mostly negative changes for science classes and teachers with the negative shift for girls being particularly pronounced for teacher *Understanding*. Given the importance of this aspects of the class for girls (see Section 5.3.1), this may be relevant when considering girls' attitudes to science classes (Table 4.5).

The final factor to be considered as an influence on changes in students' perceptions of learning environment across transition was transition pathway as defined by school size, this is considered in the Section 5.5.

5.5 Research Question 4: School Size Pathway Differences in Changes in Learning Environment Perceptions Across Transition

Transition pathways from primary to secondary school were divided into five categories based on the relative populations of their primary and secondary

school transition cohort: small to medium; small to large; medium to medium; medium to large; and within the same school. The fifth category constituted a group of schools encompassing kindergarten to grade 10 (K-10) where the primary and secondary sectors were on the same campus and under the same administration. Transition within these schools involved moving to another section of the same school. In terms of actual school populations, the K-10 schools all fell into the medium-to-medium school size category. This section reports results arising from comparisons of students' changes in perceptions of environment across transition for students following different transition pathways.

The MANOVA reported in Table 5.1 showed that the trial x pathway interaction was significant, and the corresponding ANOVAs showed that the trial x pathway interaction was significant for the three environment scales of *Friction*, *Cohesiveness* and *Student Responsibility/Freedom* behaviour for general subjects (Table 5.2), and for the two environment scales of *Cohesiveness* and *Competitiveness* for science (Table 5.3). Results for the trial x pathway interaction answer Research Question 4, which is:

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and 8 scales of the QTI) across transition vary for transition pathway (defined by school size) for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Table 5.8 reports the mean scores for scales demonstrating a significant trial x school size transition pathway interaction in the ANOVAs for 'general' subjects and Table 5.9 reports similar findings for science. These means are graphed in Figures 5.5 and 5.6. For all school size analyses, the sample size reduced

from 1,040 to only 1,008 because one transition group did not follow a clear transition pathway moving to a non-linked secondary school away from their original school area. To achieve a more valid transition pathway comparison, it was decided that this group would be excluded.

Table 5.8 Mean Scores, Pre- and Post-Transition for Scales Demonstrating a Significant ($p < .05$) Trial x School Size Pathway Interaction for General Subjects

Scale	Transition Pathway Defined by School Size									
	1		2		3		4		5	
	pre	post	pre	post	pre	post	pre	post	pre	post
MCI										
Friction	20.4	17.8	18.9	16.0	20.5	18.2	18.3	15.8	19.5	15.7
Cohesiveness	11.9	10.7	11.4	10.3	11.7	11.5	11.1	11.0	11.0	11.9
QTI										
Student Resp/ Freedom	11.2	10.0	11.4	10.1	11.5	10.8	11.0	10.4	10.8	11.1

Pathway 1=small-medium; 2=small-large, 3=medium-medium, 4=medium-large, 5='within-school'. N=1 008

Table 5.9 Mean Scores, Pre- and Post-Transition for Scales Demonstrating a Significant ($p < .05$) Trial x School Size Pathway Interaction for Science

Scale	Transition Pathway Defined by School Size									
	1		2		3		4		5	
	pre	post	pre	post	pre	post	pre	post	pre	post
MCI										
Cohesiveness	11.9	11.2	11.3	10.5	11.4	11.1	11.7	11.2	11.0	12.1
Competitiveness	17.0	16.3	17.1	15.4	17.3	16.1	16.5	14.2	17.0	14.3

Pathway 1=small-medium; 2=small-large, 3=medium-medium, 4=medium-large, 5='within-school'. N=1 008

For the graph of general subjects in Figure 5.5, the interpretation of the trial x pathway interaction is quite consistent and clear. The most favourable changes, in terms of a larger decrease in *Friction* and an increase in both

Cohesiveness and *Student Responsibility/Freedom* (compared with a decrease in *Cohesiveness* and *Student Responsibility/Freedom* for all other pathways) occurred for the within-school pathway. Changes for both the medium-medium and medium-large pathways clearly were more favourable than for both the small-medium and small-large pathways in terms of a smaller decrease in *Cohesiveness* and *Student Responsibility/Freedom*. However, an exception to this pattern occurred for *Friction* in that the most favourable (i.e. in terms of the greater decrease in *Friction*) occurred for the small-large pathway. Apparently, *Friction* was highest in smaller primary schools and this reduced most when students moved to large secondary schools.

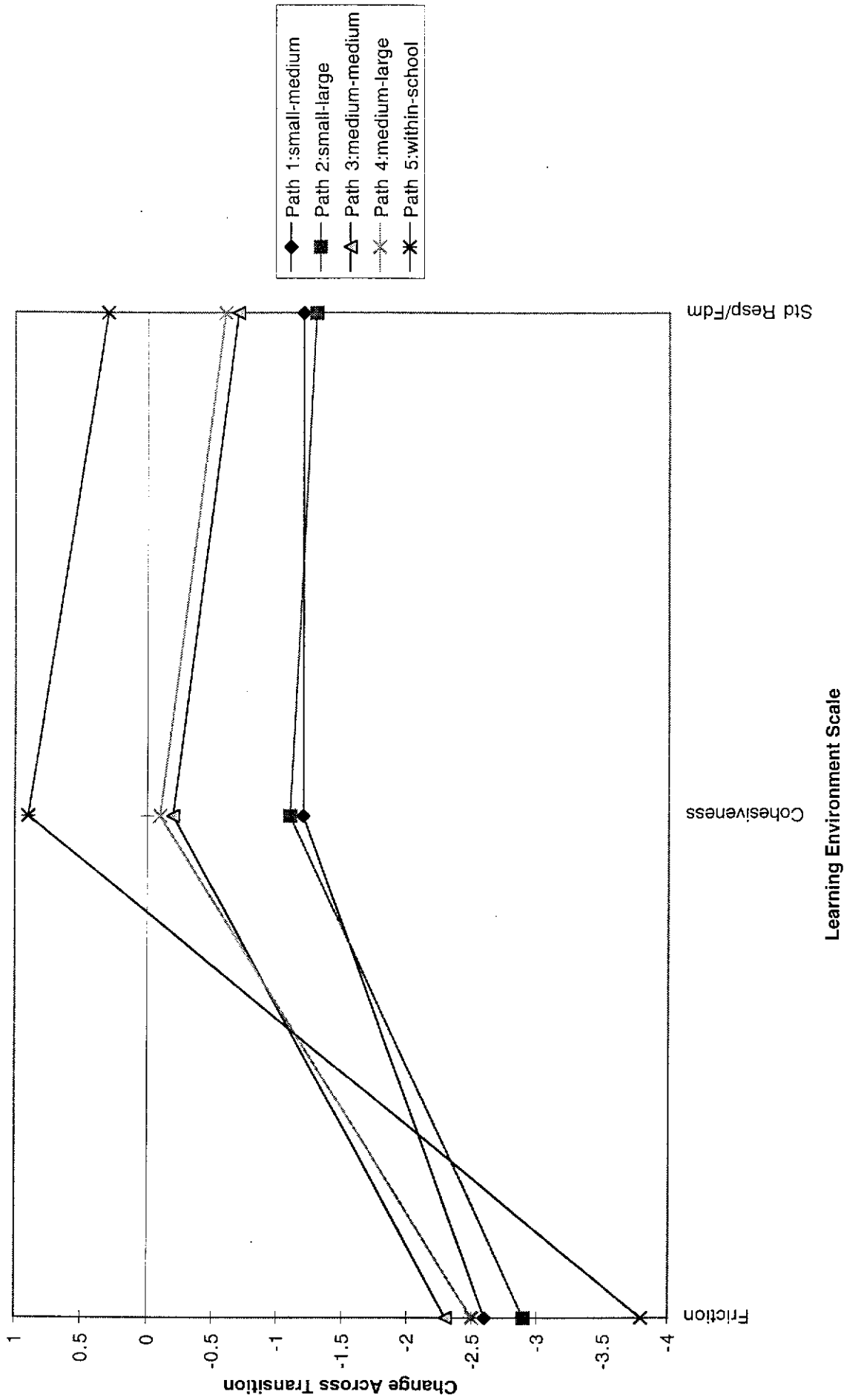


Figure 5.5: Changes in Learning Environment Perceptions Across Transition for Different School Size Pathways for 'General Subjects' [N= 1 008 Individuals]

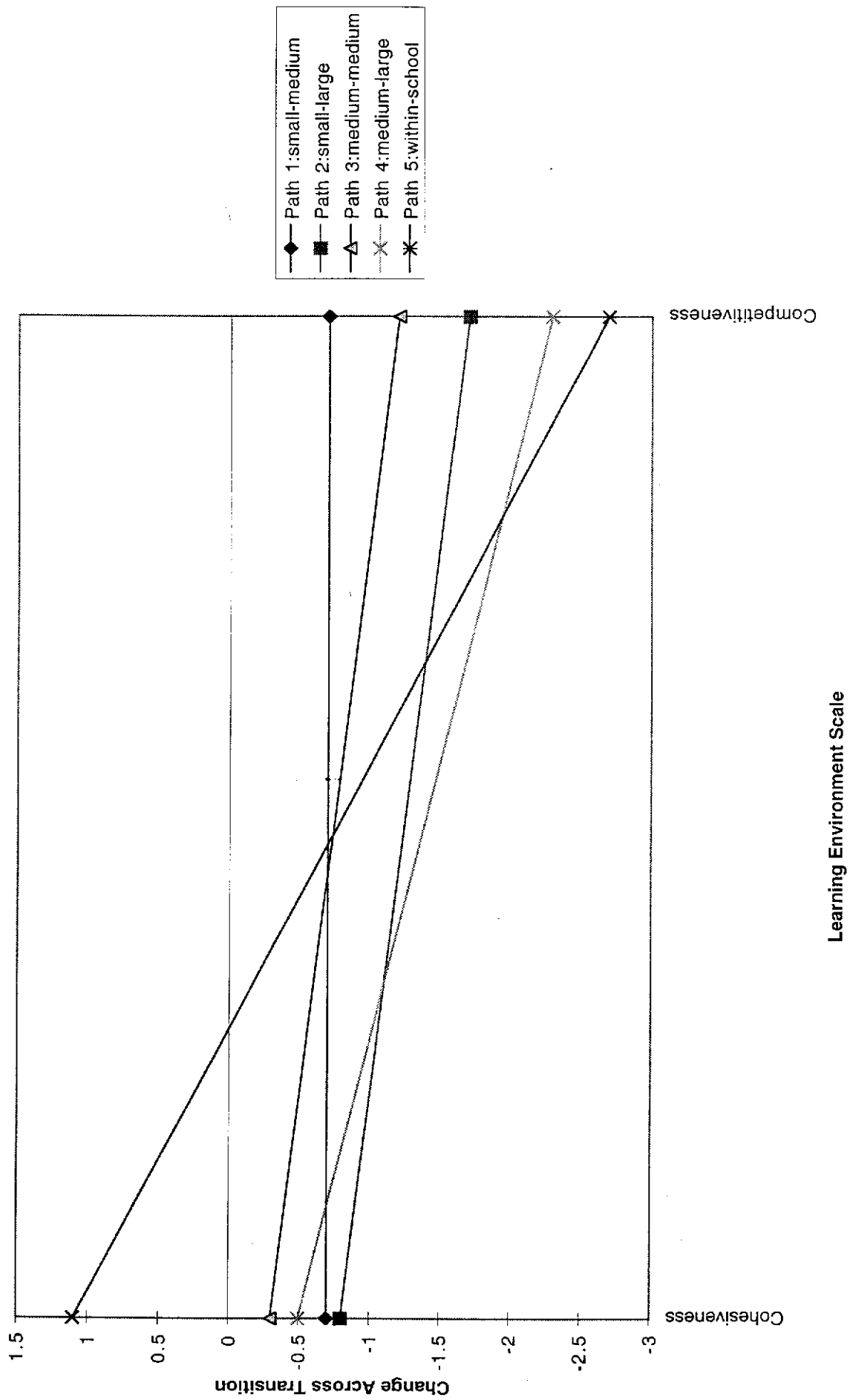


Figure 5.6 Changes in Environment Perceptions Across Transition for Different School Size Pathways for Science [N= 1 008 Individuals]

The changes in students' perceptions of *Student Responsibility/Freedom* for the within-school group is also of interest. One probable influencing factor here was that the teachers within the secondary sector of the school already knew the students and their general capabilities when they entered this part of the school. A second factor was that, within the K-10 structure, much of the leadership role that grade 6 students carry in a normal primary school was assumed by the older secondary students. Clearly there were also unidentified factors at play within this K-10 within-school transition situation, thus suggesting that further research focussing upon these schools needs to be done. As the within-school pathways were all medium-medium sized schools, differences between perceptions of students within these two pathways suggests that the internal structure of the school has an influence on students' perception changes across transition.

For the graph of science (Figure 5.6), the pattern, although similar, is not so clear. Again students in the within-school pathway perceived the most favourable changes in environment across transition in terms of both increased *Cohesiveness* and reduced *Competitiveness*. As expected, the largest deterioration in *Cohesiveness* occurred for students in the small-large school size pathway and the smallest deterioration in *Cohesiveness* occurred for students in the medium-medium school size pathway. For *Competitiveness*, the largest reduction (i.e. the most favourable reduction) occurred for the small-medium school size pathway and the smallest reduction in *Competitiveness* occurred for the medium-medium pathway.

The final section (5.6) provides a summary of key findings and issues that have arisen throughout the chapter.

5.6 Discussion and Conclusion

This chapter included all qualitative and quantitative results and discussion relevant to Research Questions 2, 3 and 4. These questions relate to changes in students' perceptions of the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across the transition from primary to secondary school. Also considered was any variation in the magnitude of changes in learning environment across transition attributable to student sex or school size/ transition pathway factors. Section 5.3.1 also included a report and discussion on the qualitative findings of relevance to Research Question 2.

The qualitative data revealed that teacher-student relationships were seen to be an important component of the classroom climate by students, particularly the girls. Of particular importance to the girls were the cooperative aspects of a teacher's interpersonal behaviour (i.e. *Leadership, Understanding, Helpfulness/ Friendliness*). When asked to compare their primary and secondary school teachers, students suggested there was little difference between the two groups but that, within the secondary teacher group, there was more variation than within the primary teacher group. Students did suggest that their primary teachers were better with student-teacher relationship aspects and secondary teachers were organised more and more subject-competent.

Changes in the nature of the relationship between students and teachers across transition were not always seen in negative terms. The boys in particular were critical (and resentful) of what they perceived to be a personality-based classroom management style within the primary school. Boys felt that this disadvantaged (and to a degree isolated) them because the teachers were predominantly female. Although students generally agreed that secondary

teachers were more strict than their primary counterparts, the boys accepted this as an improvement on the perceived primary teachers' bossiness (or *Admonishment*) that they felt was usually directed at them.

The other positive aspect of the secondary student-teacher relationship reported by most students was due to the increased variety of teachers which they encountered. Although this did result in a less intense and personal relationship, such as the one which they had with a single primary teacher, it did mean that, if they had a teacher who they disliked (or they felt disliked them), they only had to deal with them for a relatively short time each week. Students also reported that this variety resulted in better exposure to all aspects of the curriculum, as this was a consequence that was of particular importance to the boys.

In Sections 5.3, 5.4 and 5.5, results were provided from three-way MANOVA and ANOVA analyses with repeated measures on one factor (students' perception changes of the 13 MCI and QTI scales across transition) (Research Question 1), and with student sex and school size transition pathway as the other two main effects.

In particular, the transition trial x sex interaction provided a test of Research Question 2 and the transition x school size transition pathway provided a test of Research Question 3. These analyses were completed separately for the grade 6 actual teacher/classroom versus grade 7 general teacher/classroom, and for grade 6 actual versus grade 7 science teacher/classroom data.

The MANOVAs revealed that the transition trial effect was statistically significant ($p < .01$) for all 13 environment variables for both grade 7 general subjects and grade 7 science. Although the MANOVAs also revealed that the

transition trial x sex and trial x school size pathways interactions were statistically significant ($p < .05$) for some environment variables (and therefore that consideration of transition-related changes should be split by sex and by pathway), transition changes were considered separately because of their central importance to Research Question 2. As the three-way trial x sex x pathway interaction was not significant, it was legitimate to consider sex differences in changes across transition independently of school size changes.

Changes in students' perceptions of the 13 learning environment variables measured were favourable for some variables and unfavourable for others. This was true for both general grade 7 subjects and for science. The secondary environments were perceived to be more favourable in terms of less *Friction*, *Difficulty*, *Competitiveness* and *Strict* teacher behaviour, but also to be less favourable in terms of less *Cohesiveness*, *Leadership*, *Helpfulness/Friendliness*, *Understanding* and *Student Responsibility/Freedom* behaviour (see Figure 5.1). Of interest is that many of these scales in the second group fall within the co-operation sector of the interpersonal model (Section 2.5). These were the dimensions that girls identified within the qualitative data as being of particular importance to them.

However, the patterns of changes across transition were different for science and general classes (Figure 5.1) for *Satisfaction*, *Uncertainty*, *Dissatisfaction*, and *Admonishment*. Science classes experienced less favourable changes than general classes in terms of a decrease in *Satisfaction* (compared with an increase for general subjects) and an increase in *Admonishment* (compared with a decrease for general subjects) and *Uncertainty*. On the other hand, science classes experienced more favourable changes in terms of a decrease in *Dissatisfaction* (compared with an increase in this dimension for general subjects).

These results suggest overall that teachers do not exhibit the degree of Dominance-Co-operation (as defined by the Wubbels model; Section 2.5) as students would ideally like, and that secondary teachers provide less of these behaviours than their primary counterparts. Secondary teachers, however, do not exhibit the degree of *Admonishment* that their primary counterparts do, although this change is less so when comparing with secondary science teachers.

The ANOVA results showed that the trial x sex interaction was significant for eleven of the environment variables for grade 7 general subjects, and was significant for seven environment variables for grade 7 science. The trial x pathway interaction was significant for three environment variables for grade 7 general and for two for grade 7 science.

For the grade 7 general data, all variables with the exception of *Competitiveness* and *Student Responsibility/Freedom* were significant for the trial x student-sex interaction. For grade 7 science, the significant variables were *Friction*, *Difficulty*, *Cohesiveness*, *Understanding*, *Uncertainty*, *Dissatisfaction* and *Admonishment*. Relative to girls, boys changes across transition for general subjects were more favourable in terms of *Satisfaction*, *Difficulty*, *Cohesiveness*, *Understanding*, *Dissatisfaction* and *Admonishment*, but less favourable in terms of *Friction*, *Leadership*, *Helpful/Friendliness*, *Uncertainty* and *Strictness* (Figure 5.4). For science specifically, boys changes across transition were more favourable for boys for *Friction*, *Cohesiveness*, *Understanding*, *Dissatisfaction* and *Admonishment*, but less favourable for *Difficulty*.

The other findings of particular interest are that the girls perceived less favourable changes than boys across transition for the cooperation dimension

(particularly the *Understanding* scale) and the *Admonishment* scale. This is consistent with the qualitative findings which suggest that teacher *Understanding* is of particular importance to the girls, and that the secondary teachers exhibit it less than do the primary teachers. Changes in the *Admonishment* scale are also consistent with the qualitative data, in that the boys described the primary teachers as being very *Admonishing* (and being particularly directed at them).

The school size pathway scales that were significant for grade 7 general subjects were *Friction*, *Cohesiveness* and *Student Responsibility/Freedom*, and for grade 7 science, the significant variables were *Cohesiveness* and *Competitiveness*. Findings for the general subject perceptions were consistent with what other research on school size influences would predict (Section 2.3.4) in that the least favourable changes occurred for the small-medium or small-large school pathways. These students perceived a larger decrease in *Cohesiveness* and *Student Responsibility/Freedom* than other groups. However, the small-large pathway students also perceived the greatest decrease in *Friction*. This suggests that the smaller schools also have a high degree of *Friction* which reduces substantially when the students move to larger secondary schools. Overall, the within-school school pathway was associated with the most positive changes (increased *Cohesiveness* and *Student Responsibility/Freedom*). As the within-school pathways were all medium-medium sized schools, differences between perceptions of students within these two pathways suggests that the internal structure of the school also has an influence on students' perception changes across transition.

The patterns for the science data were less easily interpreted, although again the within-school pathway group perceived the most favourable changes with larger increases in *Cohesiveness* and large reductions in *Competitiveness*.

Again, the largest reduction in perceived *Cohesiveness* was within the small-large pathway group and the largest reduction in *Competitiveness* was for the small-medium pathway group. The least change for both *Cohesiveness* and *Competitiveness* was for the medium-medium pathway group.

The final chapter of this thesis contains general conclusions, highlights and recommendations that can be drawn from this study as well as outlining potential future research questions and issues.

CHAPTER 6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The thesis of this study was that students' perceptions of classroom environment and teacher interpersonal style would change as they move from the primary to the secondary school. In addition, it hypothesised that the transition would be experienced differently by students of different sex, and students in different school size transition pathways, and that students' environment and teacher interpersonal style perceptions would also vary according to sex and pathway. This was tested by four research questions as follows:

Research Question 1

How do male and female students perceive and describe the broad changes from primary to secondary school, including changing reactions to the subjects offered within the curriculum?

Research Question 2

Do students perceive changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 3

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition vary for student sex for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

Research Question 4

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and 8 scales of the QTI) across transition vary for transition pathway (defined by school size) for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

This chapter provides a review of main findings in relation to these research questions along with other key issues and recommendations that arose from the study.

Section 6.2 provides a summary of findings that arose in relation to Research Question 1 and also general issues concerning the transition from primary school to secondary school. Section 6.3 includes a summary of findings relevant to Research Question 2, that is, changes in students' perceptions of learning environment across transition. Section 6.4 provides a summary of findings relevant to Research Question 3, that is, student sex differences in learning environment perception changes across transition. Section 6.5 includes a summary of findings relevant to Research Question 4, that is, school size transition pathway differences in students' perceptions of learning environments across transition.

Section 6.6.1 discusses questions and issues arising from the methodology employed within this study, and 6.6.2 explores potential future research possibilities arising from the study.

6.2 General Transition Issues

Primary/secondary transition provided the broad focus and key context for this study. Specifically, the elements of this stage of schooling providing the focus for the study were: the developmental changes which students encounter as they move through early adolescence and how they are reflected in school-based experiences; perceptions of structural and curriculum-related changes across transition; and perceptions of, and reactions to, changes resulting from the transition from a generalist learning environment and teacher to the subject-based specialised environments and teachers within the secondary school.

The initial research question focussed upon transition as an overall experience and linked this particular study to previous studies that have researched this event. The key aspects relevant to this section of the research were the whole school perceptions of students as they transited from one school to the next. The research question was stated as follows:

Research Question 1

How do male and female students perceive and describe the broad changes from primary to secondary school, including changing reactions to the subjects offered within the curriculum?

To answer this question, 1500 students were surveyed before and after transition within the context of the Tasmanian private and public school systems. As the sample was large, qualitative data were collected by means of open-ended questions (see Section 3.5) targeting specific aspects of school. These included physical and non-physical aspects of both primary and secondary schools. The non-physical aspects focussed particularly on the interactive social dimensions of the school. Students were also asked to score

their liking of subjects studied at the two stages of schooling on a five-point scale. Findings with direct relevance to this research question were reported in Chapter 4 and are discussed below.

Students were generally positive about school both before and after transition. However, as they moved from primary to secondary school, the basis of this positive attitude, for many students, moved away from classroom experiences towards the broader social/cultural aspects of school (e.g. the larger number of students they had contact with between classes) or was sustained by a belief that classroom experiences would improve.

Issues of concern for students in relation to transition were similar to those identified by previous studies (e.g. Nisbet & Entwistle, 1969; Blyth, Simmons & Bush, 1978; Power & Cotterell 1981; Ahola-Sideway, 1986; Midgley, Eccles & Feldlaufer, 1991). The majority of the more violence-related concerns (e.g. initiations, bullying, etc.) existed for students largely as a perceived threat, due to the proximity and behaviour of bigger students within the secondary school, rather than something which they actually experienced.

Some students in the sample attended schools that had transitional programs of the "Orientation Day" type (see Section 4.4.3). These programs had some success in easing student concerns (as they met key teachers before the transition), but this was limited. The transition was still viewed by most students as a "step into the unknown" and this brought with it both apprehension and excitement. Programs that had some success in reducing apprehension for students also invariably resulted in a reduction in excitement for them.

Key aspects of transition were viewed differently by boys and girls. Although most of the actual experiences were similar, boys and girls entered the transition with differing attitudes and priorities. In broad terms, girls were more relationship-focussed throughout and judged the transition in terms of the changing nature of key relationships. The boys were more event- and facility-focussed and perceived the transition more in terms of increased exposure to opportunities related to these aspects. Unfortunately, however, grade 7 students were low on the pecking order in terms of access to these new facilities. In contrast to girls, many boys were pleased to leave the primary school because success or failure was seen to be dependent on a relationship with one teacher, usually female, that they found difficult to, or were reluctant to, establish.

The primary school was perceived to be a more secure environment, with teachers who were more understanding and in control. However, for many boys, this was seen as a very feminine environment with control maintained through a (female) personality-based system. One result of this was a feeling of discrimination and consequent resentment among the boys. Girls, by contrast, were happy with the primary school and missed elements of it once they left, particularly the closer relationships it provided.

The secondary school was perceived as more “on-the-edge”. Secondary school allowed more personal freedom and opportunities for students, but this also created uncertainty and some feelings of isolation. Relationships with teachers became less personality-based and more related to rules and work. This system was perceived to be fairer by boys, but isolating and unfriendly by girls. All students responded positively to the curriculum variety offered by secondary schools, but that this variety came at some cost (e.g. loss of personal space,

more teachers but with less opportunity to develop close student/teacher relationships).

Most subjects were liked by students, but specific subjects that had a large amount of “hands on” or activity-based experiences, were rated the highest in the primary school curriculum (e.g. physical education and art). Students’ subject preferences did exhibit some sex-based differences, usually along traditional lines (see Section 2.3.6), but at this stage of schooling, science, mathematics and technology were not the male-dominated domains that research with older groups would suggest (Ministry of Education of Victoria, 1990; Grevholm & Hanna, 1995). Mathematics, in fact, was found to exhibit the least sex-differentiation in terms of students’ perceived enjoyment.

The secondary curriculum was anticipated in a positive way, with those subject areas thought to be new or offering a new dimension (e.g. the specialised learning spaces such as science laboratories) being the ones which were most looked forward to by students. Other subjects that were anticipated in a positive way were those which students had enjoyed in primary school.

Once in secondary school, students retained a positive attitude towards those subjects which they had anticipated with enthusiasm. Although many subjects had not yet measured up to what was anticipated, students’ positive attitude was often being sustained by an optimism that it would improve after the introductory phase. Science fitted into this category. Students had already expressed considerable disappointment with information technology because of the restricted access that they encountered to computers within secondary school contexts. Students who were the most positive about mathematics in primary school found it disappointing and were beginning to look elsewhere for challenges, complaining that the mathematics encountered was simply

repeating work which they had been able to do in previous years. In general, where students found subjects not to be as fulfilling as they had anticipated, they directed their attention to other areas or to the many extra-curricular and social outlets which secondary school provided.

6.3 Changes in Classroom Learning Environment Perceptions Across Transition

The key focus of this study, within the context of transition, was the identification of the nature of changes in students' perceptions of specific elements of the learning environment during transition. These learning environment factors consisted of 13 variables, 5 as defined by the *My Class Inventory (MCI)* and 8 as defined by the *Questionnaire on Teacher Interaction (QTI)* (see Sections 2.4 & 2.5).

These inventories were administered to the sample of 1500 students as described in Section 6.2 to collect four different sets of responses, two pre-transition and two post-transition. The pre-transition versions included the students' actual grade 6 classroom and teacher and the students' preferred (or ideal) classroom and teacher. The post-transition versions consisted of a cross-sectional sample of grade 7 classrooms and teachers (all subjects included) and grade 7 science classrooms and teachers. These responses to the MCI and the QTI were used in the analyses for Research Questions 2, 3 and 4 which were reported previously in Sections 5.3, 5.4 and 5.5 and are discussed below.

Initially, three-way MANOVA with repeated measures on one factor was conducted (see Sections 3.10.2 & 5.2) to determine if changes in students' perceptions occurred across transition and whether these changes varied with student sex and school size transition pathway. Because the MANOVA yielded significant results, subsequently, a parallel three-way repeated measures

ANOVA was conducted separately for each of the 13 MCI and QTI scales. All analyses were performed separately for grade 6 to grade 7 general classes, and repeated for grade 6 to grade 7 science. For both general subjects and science, changes in perceptions for each of the 13 environment variables were significant at the .01 level. Combined with supportive qualitative data, again collected through the vehicle of open-ended questions (see Section 5.3.1), these results provided findings in answer to Research Question 2.

Research Question 2

Do students perceive changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

When comparing grade 6 classes with those of grade 7 generally students' perceived some aspects of the change in learning environment in positive terms, and some in negative terms. The secondary environments generally were perceived to have less class *Cohesiveness*, less *Leadership*, *Helpful/Friendly*, *Understanding* teachers behaviour and less *Student Responsibility/Freedom*. These changes are all negative when compared with students' preferred environment. Especially of interest is the reduction in all the three scales of co-operation sector of Wubbels interpersonal model (Section 2.5). The changes in teacher interpersonal style perceived by the students represent a shift towards the "uncertain-aggressive" teacher type, that is, a shift away from the "authoritative-tolerant" ideal teacher profile (see Section 2.5).

However, secondary environments were also perceived to have less *Friction*, *Difficulty*, *Competitiveness* and *Strict* teacher behaviour, all positive changes when compared with students' ideals.

Changes between perceptions of grade 6 and the secondary science environments were similar to those with grade 7 classes generally, but the science classes were perceived to have less *Satisfaction* and more teacher *Admonishment* (negative changes) but also less teacher *Dissatisfaction* and *Uncertainty* (positive changes). These changes were the reverse of those between grade 6 classes and grade 7 general classes (where there was increased *Satisfaction*, teacher *Uncertainty*, *Dissatisfaction* and a reduction in *Admonishment*. Of particular interest are the differences in class *Satisfaction* and teacher *Admonishment*, as the qualitative data suggests these are of particular importance to the students during this time (along with teacher co-operation traits).

Students' perceptions of differences between the primary learning environment and the secondary science environment were similar to those for other secondary classes, but the shift away from students' preferences was greater, in that, science classes were less aligned to students' preferences than secondary classes generally.

As mentioned above, if considered as teacher profiles, collectively these trends across transition from grade 6 teachers to both grade 7 science teachers and grade 7 teachers generally represents a move away from a more "authoritative-tolerant" teacher type towards a more 'uncertain-aggressive' type in the secondary school. As the "best teacher" profile is of the authoritative-tolerant type, this represents a clear change away from students' ideal teacher characteristics.

Following the indicated significance of the trial x sex interaction by the MANOVAs, the effect of the sex of the student on changes in environmental perceptions was explored. These findings, which relate to Research Question 3 are summarised in the next section.

6.4 Sex Differences in Changes in Learning Environment Perceptions Across Transition

This section includes a summary of findings in relation to Research Question 3 which were reported previously in Section 5.4.

Research Question 3

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and the 8 scales of the QTI) across transition vary for student sex for:

- i) grade 6 and grade 7 classes and teachers generally*
- ii) grade 6 and grade 7 science classes and teachers specifically?*

As the MANOVAs and ANOVAs revealed significant trial x sex interactions for many MCI and QTI variables, changes in environment perceptions across transition were examined separately for boys and girls. The variables with a significant trial x sex interaction effect were *Satisfaction, Friction, Difficulty* and *Cohesiveness* (all except *Competitiveness*) for the MCI and *Leadership, Helpful/Friendliness, Understanding, Uncertainty, Dissatisfaction, Admonishment* and *Strict* (all except *Student Responsibility/Freedom*) for the QTI for general grade 7 subjects. For science, the significant variables were *Friction, Difficulty, Cohesiveness, Understanding, Uncertainty, Dissatisfaction* and *Admonishment* (see Figures 5.4 and 5.5).

As they moved into secondary school, boys showed an increase in perceived student *Satisfaction*, whilst for girls there was a reduction in perceived *Satisfaction*. For other MCI variables, overall trends were similar for boys and girls, with the girls perceiving greater reduction in *Friction* and *Cohesiveness*, and the boys perceiving slightly more reduction in *Difficulty*. For most of the variables however, boys held a more negative view both before and after the transition than did the girls, with the key difference being that the starting point for boys was usually more negative. For changes from grade 6 classes to grade 7 science classes, boys perceived a greater reduction in *Friction*, whilst girls perceived a greater reduction in *Difficulty* and *Cohesiveness*.

For the QTI scales, for general grade 7 subjects, boys perceived a greater reduction in *Admonishment* and in *Strict* teacher behaviour compared with the girls (who perceived little change in *Admonishment* and a slight reduction in *Strict* behaviour). This was consistent with the qualitative data where boys indicated that they felt that teachers were very admonishing towards them. The girls perceived less reduction in *Leadership* and *Helpfulness/Friendliness* but a greater reduction in teacher *Understanding* than the boys. Qualitative data suggests that teacher *Understanding* is of particular importance to the girls.

ANOVAs using the grade 6 and grade 7 science class responses identified *Friction*, *Difficulty* and *Cohesiveness* from the MCI, and teacher *Understanding*, *Uncertainty*, *Dissatisfaction* and *Admonishment* from the QTI as having a significant trial x sex interaction. For grade 6 to grade 7 science QTI scale perception changes, girls perceived a much greater reduction in teacher *Understanding* and a greater increase in *Dissatisfaction*. Boys perceived a reduction in *Admonishment* from grade 6, but girls perceived an increase.

The primary school learning environment did not meet the preferences of boys at all well, and the secondary environment did not meet preferences for boys or girls. Rather, the secondary environment had a particularly negative effect on girls because their perceptions of the primary school environment were positive relative to those of the boys.

Ideal learning environments were very similar for boys and girls. The only differences were that the girls preferred a slightly higher degree of *Satisfaction*, *Cohesiveness*, *Leadership*, *Helpfulness/Friendliness* and *Understanding*, with slightly less *Friction*, *Competitiveness*, *Student Responsibility/Freedom*, *Uncertainty*, *Dissatisfaction* and *Admonishment*. *Difficulty* and *Strictness* preferences exhibited no sex differences. Results suggest that the science classes and teachers were meeting the ideals of neither boys nor girls.

Finally, the effect of transition pathways, as defined by school size, on changes in environmental perceptions was explored. These findings, which relate to Research Question 4 are summarised in the next section.

6.5 Transition Pathway Differences in Students' Learning Environment Perception Changes

The final objective of this research was to determine the influence of different transition pathways, as defined by school size, on students' perceptions of primary and secondary classroom environments (previously reported in Section 5.5). This focus is congruent with Research Question 4:

Research Question 4

Do students' perceived changes in the learning environment and teacher interpersonal style (as defined by the 5 scales of the MCI and 8 scales of the QTI) across transition vary for transition pathway (defined by school size) for:

i) grade 6 and grade 7 classes and teachers generally

ii) grade 6 and grade 7 science classes and teachers specifically?

Transition pathways were categorised into five groups dependent upon the size of the cohort leaving a particular primary school and entering a particular secondary school. These pathways were small to medium (pathway 1), small to large (pathway 2), medium to medium (pathway 3), medium to large (pathway 4) and within school (pathway 5). The within school group had both primary and secondary sectors on the same campus (although administratively separated; see Section 3.3). The ANOVAs reported in Section 5.3.2 showed the trial x pathways interaction to be significant for *Friction*, *Cohesiveness* and *Student Responsibility/Freedom* for the grade 6 actual class to the grade 7 general class trial, and for *Cohesiveness* and *Competitiveness* for the grade 6 actual class to grade 7 science class trial (see Figures 5.6 and 5.7).

For the grade 6 to general subject environment perception changes, the least favourable were for students moving from small primary schools to medium or large high schools. These students perceived a larger decrease in *Cohesiveness* and *Student Responsibility/Freedom* than other pathway students. However, the students moving from small primary schools to large high schools also perceived the greatest reduction in *Friction* which suggest that students in small primary schools have an increased awareness of class *Cohesiveness*, but also of any class *Friction* present.

The within-school pathway exhibited the most positive changes with students perceiving increased *Cohesiveness* and *Student Responsibility/Freedom*. The within-school pathway group consisted of medium sized primary and high schools, but findings contained different patterns than those for the medium-

medium pathway students. This suggests that the different primary/secondary structure does influence students' environment perceptions.

For grade 6 to grade 7 science, again the within-school group exhibited the most favourable changes in environment perceptions with increased *Cohesiveness* and reduced *Competitiveness*. Again the small-large pathway group perceived the greatest reduction in *Cohesiveness*.

The final section of this chapter outlines some methodology issues arising from this study as well as proposing ideas for possible future research.

6.6 Methodology and Future Research Implications

This study was the first time the *Questionnaire on Teacher Interaction (QTI)* was used in a transition study, this usage, along with implications of linking it with *My Class Inventory (MCI)* in this context gave rise to some methodology related issues. These issues are discussed in Section 6.6.1. The study also gave rise to future research recommendations within this context, these are discussed in Section 6.6.2.

6.6.1 Questions and Issues Arising from the Methodology

This study employed the *My Class Inventory (MCI)* in conjunction with the *Questionnaire on Teacher Interaction (QTI)*, and supported by qualitative data. This proved to be a workable combination for middle school students. The experience of this study would suggest that the combination of the QTI and MCI provides an appropriate and diverse range of learning environment scales to evaluate classrooms during this stage of schooling. The quantitative findings derived from these

instruments were greatly enhanced by the combination with qualitative findings as recommended by Fraser and Tobin (1991) and Tobin and Fraser (1998). These qualitative data enabled a greater detail in interpretations generally and also helped clarify some ambiguities arising from quantitative interpretations.

This study also included student sex and school size pathway differences as possible influencing factors in students environment perceptions across transition. The study findings vindicated the decision to include these two factors and suggest that future research studies focussing on changes in student environment perceptions should consider the inclusion of these factors.

The combination of the MCI, the QTI and qualitative data with this age group within the transitional context gave rise to some methodological issues which are discussed below:

The *Student Responsibility/Freedom* scale of the QTI, as used within this study, proved to have low reliability compared to other scales. One implication arising from this study was the possibility that, within classrooms where teachers are consciously working towards developing students as independent learners, the interpretation of this scale is not as the model would assume (see Section 2.5). This (potential) inter-relationship between this scale and certain teaching priorities and strategies warrants further research.

The *Student Responsibility/Freedom* scale also presented some linguistic problems (e.g. “This teacher is interested in me”), with local interpretations varying from the intended meaning. These issues also

need further research in varying contexts to clarify possible language-based ambiguities within the instrument.

The other scale from the QTI which presented some difficulty was *Strict*. The qualitative data suggested that students within the primary school context interpreted teacher strictness differently than within secondary contexts. Specifically, for the primary teacher, strictness was seen to be more personality-driven and, for the secondary teacher, it was more rule and work-expectation driven. One consequence of this is the possibility that the *Strict* scale of the QTI may need to be interpreted differently within primary and secondary contexts. This may mean that the underlying assumptions linking this scale to the QTI model may not be consistent across the two contexts. The *Strict* scale did prove have low reliability in this study, compared with other scales, possibly because of this lack of consistency in interpretation by students. Further research on the conceptual basis of teacher strictness (as opposed to *Admonishment* and *Leadership* behaviours) within the two contexts would help clarify this issue.

6.6.2 Other Recommendations for Future Research

As mentioned in the earlier chapters of this thesis, although it is an event experienced by most students, primary-to-secondary transition has not traditionally had a high research profile. It is an event within a stage of schooling identified as causing many concerns for students, teachers and educational systems (see Section 2.3.2). Some schools are attempting to make the transition event a more positive and constructive one for students but, without a substantial research base, much of this experimentation is poorly informed and therefore only minimally

successful. Therefore more research is needed targeting this stage of schooling, including evaluations of the many transition and middle-school programs being trialed by schools. This study has allowed the identification of some potential future research to assist in adding in a constructive way to the research base that exists in relation to transition and middle schooling. These research suggestions are discussed in this section.

Upper Primary School

Firstly, this research identified that boys had negative attitudes to school at the completion of primary school. Research needs to be undertaken to further explore the nature of these attitudes, as well as identifying the influences that contribute to them. Some associated questions are:

- a) How important is the sex of the teacher in the development of this negative attitude in boys?
- b) Is the response by boys purely a reaction to a general perception of a 'feminised' primary school environment overall?
- c) Do some students feel that they are 'held back' in their social development in the latter years of primary school (as many students in this study claimed they were treated like 'babies')?

Early Secondary School

Within the context of secondary school, research is needed to establish what happens to students' perceptions of classrooms and teacher interpersonal style as they move further into this stage of schooling.

Such studies could also incorporate the changes in students' attitudes to school, subjects, classes and teachers. Findings from this study would suggest that any such considerations should include student sex and possibly primary school origins (school sizes) as analysis factors.

This research establishes that junior secondary schools, within Tasmanian contexts, are not meeting the needs of students well, at least in terms of learning environment preferences. Research within junior secondary schools is needed to assess the many alternatives being trialed in terms of curriculum delivery (e.g. co-operative learning models, integrated curriculum models) and teacher interpersonal style (e.g. team teaching, primary teachers in junior secondary teaching teams) attempting to minimise the negative shift in students' attitudes at this stage of schooling.

Transition and Middle School

Other environment measures could be incorporated into studies of the transition from primary to secondary school and studies of middle school beyond the 13 dimensions of this current study (e.g. the constructivist dimensions of learning environments using the *Constructivist Learning Environment Survey*; Taylor, Dawson & Fraser, 1994). The "Class form" and "Personal form" variations could be used to assess how students saw themselves on a personal and class level in the post-transition classroom environment (McRobbie, Fisher & Wong, 1998).

Other sample groups could be tracked to parallel this study to see if perception changes are comparable (e.g. students in single-sex classes or schools).

Comparative research with students in middle school systems that offer alternatives to the discontinuous, primary-to-secondary transitional structures are likely to be informative. Specifically, do students in middle school systems of various kinds have changes in perceptions of school generally, and learning environments in particular, that are similar to those for students moving through a more conventional primary/secondary transition?

This study has established a link between transitional pathways as defined by school size and changes in student learning environment perceptions. What is still not clear, and would benefit from further research, is the full nature of these differences and the potential ongoing impact as students move further on into their secondary school careers.

This study suggests that changing learning environment perceptions across transition for students within an articulated K-10 school structure are quite atypical and favourable relative to other pathways. Further research on transitional effects within these schools would help resolve questions left unexplained by this study.

REFERENCES

- Ahola-Sideway, J.A., 1986. Student transition from elementary school to high school. Unpublished Doctoral Thesis, McGill University, Canada.
- Ahola-Sideway, J.A., 1988. From Gemeinschaft to Gessellschaft: A case study of student transition from elementary school to high school. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Anderman, E.M. & Midgely, C., 1996. Changes in achievement goal orientations after the transition to middle school. Paper presented at the biennial meeting of the Society for Research on Adolescence, Boston.
- Anderson, G.J. & Walberg, H.J., 1974. Learning environments. In H.J. Walberg (Ed.), *Evaluating Educational Performance: A Sourcebook of Methods, Instruments, and Examples*, (pp. 81-98). Berkeley, California: McCutchan.
- Atkinson, J.P., Trebilco, G., Grierson, M.R. & Atkinson, E.P., 1978. Aiding transition from primary to secondary school: A report on surveys of Victorian schools and regions. Victorian College Centre for Studies in the Curriculum, Victoria.
- Australian Council of Educational Research, 1989. *Newsletter*. Melbourne.
- Australian Education Council, 1989. *Common and Agreed National Goals for Schooling in Australia*. Canberra: Curriculum Corporation.
- Australian Education Council, 1994. *(Various Key Learning Area) Statements and Profiles*. Canberra: Curriculum Corporation.
- Australian Schools Council, 1992. National Report on Schooling in Australia. Curriculum Corporation.

- Baird, J.R., Gunstone, R.F., Penna, C., Fensham, P.J. & White, R.T., 1990. Researching the balance between cognition and affect in science related teaching and learning. *Research in Science Education*, 20, 11-20.
- Barker, R.G. & Gump, P.V., 1964. *Big School, Small School*. Palo Alto: Stanford University Press.
- Bassano, A., 1997. Launceston Church Grammar School. In M. Falk, R. Radford & H. Smigiel (Eds.), *Partnerships for Professional Learning: The Innovative Links Roundtable in Tasmania*, (pp.10-11). Hobart: Tasmanian Educational Consortium.
- Battern, M., 1993. Students' perceptions of effective teaching. In M. Battern, P. Marland & M. Khamis (Eds.), *Knowing how to teach well*. (Australian Council for Educational Research Monograph No. 44), (pp.11-14) Melbourne: Australian Council for Educational Research.
- Berndt, T.J., 1985. The effects of friendships on students' adjustment after the transition to junior high school. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Berndt, T.J., 1990. Relations of friendships and peer acceptance to adolescents' self-evaluations. Paper presented at the annual meeting of the American Educational Research Association, Boston.
- Berndt, T.J., 1991. How friends influence adolescents' adjustment to school. Paper presented at the biennial meeting of the Society for Research in Child Development, Seattle.
- Bhushan, V., 1986. Relationships between teachers' attitudes and classroom learning environment. In B.J. Fraser (Ed.), *The Study of Learning Environments, I*, (pp.41-46). Salem, Oregon: Assessment Research.
- Blyth, D.A., Simmonds, R.G. & Bush, D., 1978. The transition into early adolescence: A longitudinal comparison of youth in two educational contexts. *Sociology of Education*, 51, 149-162.

- Boulanger, F.D., 1980. Relationship of an inservice program to student learning: Naturalistic documentation. *Science Education*, 64, 349-355
- Brekelmans, M., Levy, J. & Rodriguez, R., 1993. A typology of teacher communication style. In T. Wubbels & J. Levy (Eds.), *Do You Know What You Look Like? Interpersonal Relationships in Education*, (pp.13-28), London: Falmer Press.
- Brekelmans, M. & Wubbels, T., 1991. Student and teacher perceptions of interpersonal teacher behaviour: A Dutch perspective. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Brekelmans, M., Wubbels, T. & Creton, H.A., 1990. A study of student perceptions of physics teacher behavior. *Journal of Research in Science Teaching*, 27, 335-350.
- Brooks Transition Cluster, 1990. Evaluation project working document. Brooks High School Cluster, Tasmania.
- Campbell, J., 1982. Unproductive pessimism, *Education*, 10 (2), 3-13.
- Campbell, W.J., Cotterell, J.L., Robinson, N.M. & Sadler, R.D., 1981. Effects of school size upon some aspects of personality. *Journal of Educational Administration*, 19, 201-231.
- Carlsen, W.S., 1990. Saying what you know in a science laboratory. Paper presented at the annual meeting of the American Educational Research Association, Boston.
- Central Advisory Council for Education (Plowden Committee Report), 1967. *Children and their Primary Schools*. London: HMSO.
- Chapple, E.D. & Coon, C.S., 1942. *Principles of Anthropology*. New York: A.H. Holt.
- Clark, M. 1990. *The Great Divide*. Melbourne: Curriculum Corporation
- Coleman, J.C., 1961. *The Adolescent Society*. Connecticut: Greenwood Press.

- Coleman, J.C., 1974. *Relationships in Adolescence*. Boston: Routledge & Kegan Paul.
- Coleman, J.C. (Ed.), 1979. *The School Years*. New York: Methuen & Co.
- Coleman, J.C., 1980. *The Nature of Adolescence*. London: Methuen.
- Commonwealth Schools Commission, 1987. *A National Policy for the Education of Girls in Australian Schools*. Canberra: Commonwealth Schools Commission.
- Cotterell, J.L., 1979. Expectations and realities: A study of transition from primary to secondary school. *The Australian Journal of Education*, 23, 21-31.
- Cotterell, J.L., 1982. Student experiences following entry into secondary school. *Educational Research*, 24 (4) , 296-302.
- Cotterell, J.L., 1992. School size as a factor in adolescents' adjustment to the transition to secondary school. *Journal of Early Adolescence*, 12 (1), 28-45.
- Cresswell, J. & Fisher, D.L., 1997. A comparison of actual and preferred principal interpersonal behaviour. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Diego.
- Creton, H., Wubbels, T. & Hooymayers, H., 1993. A systems perspective on classroom communication. In T. Wubbels & J. Levy (Eds.), *Do You Know What You Look Like? Interpersonal Relationships in Education*, (pp.1-12) London: Falmer Press.
- Cripps, M. A., 1994. Bridging the gap - A bridge is built: A case study of a grade seven transitional program. Unpublished Master of Education Dissertation, University of Tasmania.
- Cronbach, L.J., 1949. *Essentials of Psychological Testing*. New York: Harper and Row.

- Daniel, J. & Klingele, W., 1976. Orientation in the middle school, *The Clearing House*, 49, 199-200.
- Department of Education and Science, Central Advisory Council for Education, 1967. *Primary Education in Wales* (Gittens Committee Report). London: HMSO.
- Department of Education and the Arts Tasmania, 1991. *Our Children the Future* (Primary Education Policy). Hobart: Curriculum Services Branch.
- Department of Education for South Australia, 1971. *Karmel Committee Report*. Adelaide: Government Printer.
- Department of Education for South Australia, 1992a. *The Junior Secondary Review*. Adelaide: Government Printer.
- Department of Education for South Australia, 1992b. *Report on the Junior Secondary Review*. Adelaide: Government Printer.
- Department of Employment, Education and Training (DEET), 1991. *National Database on the Education of Girls in Australian Schools*. Canberra: Australian Government Publishing Service.
- Department of Employment, Education, Training and Youth Affairs (DEETYA), 1996. *Ending Alienation*. (The Gender Equity Network) (June Edition). (pp.1-4). Australian Capitol Territory
- Dorman, J.P., Fraser, B.J. & McRobbie, C.J., 1997. Relationship between school-level and classroom-level environments in secondary schools. *Journal of Educational Administration*, 35, 74-91.
- Douvan, E., 1979. Sex role learning. In J.C. Coleman (Ed.), *The School Years*, (pp.79-94). New York: Methuen & Co.
- Dunkin, M.J., & Biddle, B.J., 1974. *The Study of Teaching*. New York: Rinehart and Winston.

- Dutch, R.D. & McCall, J, 1974. Transition to secondary - An experiment in a Scottish comprehensive school. *British Journal of Educational Psychology*, 44, 282-289.
- Eccles, J.S. & Midgley, C., 1989. Stage/environment fit: Developmentally appropriate classrooms for early adolescents. In R.E. Ames & C. Ames, (Eds.), *Research on Motivation in Education*, 3, (pp.139-186). New York: Academic Press.
- Education Department of Tasmania, 1977. *Report on Secondary Education* (Scott Committee Report). Hobart: Government Printer.
- Education Department of Western Australia, 1969. *Review of Secondary Education in Western Australia*. (The Dettman Report). Perth: Government Printers.
- Eichhorn, D.H., 1980. The school. In M. Johnson (Ed.), *Toward Adolescence: The Middle School Years*, (pp. 56-73). Chicago: National Society for the Study of Education.
- Ellett, C.D., Masters, J.A. & Poole, J.E., 1978. The incremental validity of teacher and student perceptions of school environment characteristics. Paper presented at the annual meeting of Georgia Educational Research Association, Atlanta.
- Ellett, C.D. & Walberg, H.J., 1979. Principals' competency, environment, and outcomes. In H.J. Walberg (Ed.), *Educational Environments and Effects*. (pp.140-164). Berkeley: McCutchan.
- Elliott, G.R. & Feldman, S.S., 1990. *At the Threshold: The Developing Adolescent*. Cambridge, Massachusetts: Harvard University Press.
- Epstein, J.L. & Karweit, N. (Eds.), 1983. *Friends in School: Patterns of Selection and Influence in Secondary Schools*. New York: Academic Press.
- Evans, M.J., 1979. Some aspects of school procedures in primary to post-secondary school transition. Victoria State College:Burwood

- Exeter High School, 1993. Information for entry students, Tasmania.
- Feldlaufer, H., Midgley, C. & Eccles, J.S, 1988. Student, teacher, and observer perceptions of the classroom environment before and after the transition to junior high school. *Journal of Early Adolescence*, 8 (2), 133-156.
- Fenzel, L.M., 1989. Role strain and the transition to middle school: Longitudinal trends and sex differences. *Journal of Early Adolescence*, 6, 315-329.
- Ferguson, P.D., 1989. Teacher's attitudes to Science K-8. Unpublished Master of Education Dissertation, University of Tasmania.
- Ferguson, P.D., 1991. Primary/secondary transition and related teacher attitudes to science. *Research in Science Education*, 21, 90-95.
- Ferguson, P.D. & Speering, W., 1997. 'Great expectations: Grim realities': Secondary school initiates' perceptions of science. *Proceedings of the 1997 International Conference on Science, Mathematics and Technology Education*. (pp.189-198). Hanoi, Vietnam.
- Fisher, D.L. & Fraser, B.J., 1981. Validity and use of My Class Inventory. *Science Education* 65, 145-156.
- Fisher, D.L. & Fraser, B.J., 1983. A comparison of actual and preferred classroom environments as perceived by science teachers and students. *Journal of Research in Science Teaching*, 28, 55-62.
- Fisher, D.L., Fraser, B.J. & Bassett, J., 1995. Using a classroom environment instrument in an early childhood classroom. *Australian Journal of Early Childhood*, 20 (3), 10-15.
- Fisher, D.L., Fraser, B.J. & Wubbels, T., 1993. Interpersonal teacher behaviour and school environment. In T. Wubbels and J. Levy (Eds.), *Do You Know What You Look Like? Interpersonal Relationships in Education*, (pp.13-28). London: Falmer Press.

- Fisher, D.L., Fraser, B.J., Wubbels, T. & Brekelmans, M., 1993. Associations between school learning environment and teacher interpersonal behaviour in the classroom. In D.L. Fisher (Ed.), *The Study of Learning Environments*, 7 (pp.1-12). Perth: Curtin University of Technology.
- Fisher, D.L., Henderson, D. & Fraser, B.J., 1995. Interpersonal behaviour in senior high school biology classes. *Research in Science Education*, 25 (2), 125-133.
- Fisher, D.L., Rickards, T. & Fraser, B.J., 1996. Assessing teacher-student interpersonal relationships in science classes. *Australian Science Teachers Journal*, 42 (3), 28-33.
- Fisher, D.L. & Rickards, T., 1997. Cultural and gender differences in teacher-student interpersonal behaviour in science classrooms. *Proceedings of the 1997 International Conference on Science, Mathematics and Technology Education*. (pp.1-9). Hanoi, Vietnam.
- Fisher, D.L., Rickards, T., Goh, S. & Wong, A., 1997. Perceptions of interpersonal teacher behaviour in secondary science classrooms: Comparisons between Australia and Singapore. *Proceedings of the 1997 International Conference on Science, Mathematics and Technology Education* (pp.136-143). Hanoi, Vietnam.
- Fraser, B.J., 1979. Evaluation of a science-based curriculum. In H.J. Walberg (Ed.), *Educational Environments and Effects*, (pp. 218-234). Berkeley: McCutchan.
- Fraser, B.J., 1980. Guest editor's introduction: Classroom environment research in the 1970's and 1980's. *Studies in Educational Evaluation*, 6, 221-223.
- Fraser, B.J., 1981. Using environmental assessments to make better classrooms. *Journal of Curriculum Studies*, 13, 131-144.

- Fraser, B.J., 1982. Differences between student and teacher perceptions of actual and preferred classroom learning environment. *Educational Evaluation and Policy Analysis*, 4, 511-519.
- Fraser, B.J., 1986a. *Classroom Environment*. London: Croom Helm.
- Fraser, B.J., 1986b. Two decades of research on perceptions of classroom environment. In B.J. Fraser (Ed.), *The Study of Learning Environments 1*, (pp.1-33). Salem, Oregon: Assessment Research.
- Fraser, B.J., 1993. Assessing and improving classroom environment. In B.J. Fraser (Ed.), *Research Implications for Science and Mathematics Teachers*, 1 (Key Centre Monograph No. 5). Perth: Curtin University of Technology.
- Fraser, B.J., 1994. Research on classroom and school climate. In D. Gabel (Ed.), *Handbook on Research on Science Teaching and Learning*, (pp.493-541). New York: Macmillan.
- Fraser, B.J., 1998. Science learning environments: Assessments, effects and determinants. In B.J. Fraser & K.G.Tobin (Eds.) *International Handbook of Science Education*, (pp.527-564). Dordrecht, The Netherlands:Kluwer Academic Publishers.
- Fraser, B.J., Anderson, G.J. & Walberg, H.J., 1982. *Assessment of Learning Environments: Manual for Learning Environment Inventory (LEI) and My Class Inventory (MCI)* (third version). Perth: Western Australian Institute of Technology.
- Fraser, B.J., Docker, J.G. & Fisher D.L., 1987. A comparison of psychosocial environments of different types of school. In B.J. Fraser (Ed.). *The Study of Learning Environments*, 3, (pp.68-75). Perth: Curtin University of Technology.
- Fraser, B.J. & Fisher, D.L., 1982a. Effects of classroom psychosocial environment on student learning. *British Journal of Educational Psychology*, 52, 374-377.

- Fraser, B.J. & Fisher, D.L., 1982b. Predicting students' outcomes from their perceptions of classroom psychosocial environment. *American Educational Research Journal*, 19, 498-518.
- Fraser, B.J. & Fisher, D.L., 1983. Student achievement as a function of a person-environment fit: A regression surface analysis. *British Journal of Educational Psychology*, 53, 89-99.
- Fraser, B.J. & Fisher, D.L., 1986. Using short forms of classroom climate instruments to assess and improve classroom psychosocial environment. *Journal of Research in Science Teaching*, 23, 387-413.
- Fraser, B.J., Fisher, D.L. & McRobbie, C.J., 1996. Development, validation, and use of personal and class forms of a new classroom environment instrument. Paper presented at the annual meeting of the American Educational Research Association, New York.
- Fraser, B.J., Giddings, G.J. & McRobbie, C.J., 1992. Assessing the Climate of Science Laboratory Classes (What Research says to the Science and Mathematics Teacher, 8). Perth: Curtin University of Technology.
- Fraser, B.J., Giddings, G.J. & McRobbie, C.J., 1995. Evolution and validation of a personal form of an instrument for assessing science laboratory classroom environments. *Journal of Research in Science Teaching*, 32, 399-422.
- Fraser, B.J. & O'Brien, P., 1985. Student and teacher perceptions of the environment of elementary school classrooms. *Elementary School Journal*, 84, 567-580.
- Fraser B.J. & Rentoul, A.J., 1982. Relationships between school-level and classroom-level environments. *Alberta Journal of Educational Research*, 28, 212-225.

- Fraser, B.J. & Tobin K., 1991. Combining qualitative and quantitative methods in classroom environment research. In B.J. Fraser & H.J. Walberg (Eds.), *Educational Environments: Evaluation, Antecedents and Consequences*. (pp.271-292). Oxford: Pergamon Press.
- Fraser, B.J. & Walberg, H.J., 1981. Psychosocial learning environment in science classrooms. *Studies in Science education*, 8, 67-92.
- Fraser, B.J. & Walberg, H.J. (Eds.), 1991. *Educational Environments: Evaluation, Antecedents and Consequences*. Oxford: Pergamon Press.
- Gannon, T. & Whalley, A., 1975. *Middle Schools*. London: Heinemann.
- Goh, S.C., 1994. Interpersonal teacher behaviour, classroom climate and student outcomes in primary mathematics classes in Singapore. Unpublished Doctoral Thesis, Curtin University of Technology.
- Goh, S.C. & Fraser, B.J., 1996. Validation of an elementary school version of the Questionnaire on Teacher Interaction. *Psychological Reports*, 79, 515-522.
- Grady, N., 1993. Images, metaphors and climates: An investigation of relationships between teachers' images of their schools, their perceptions of work climates, and students' perceptions of classroom environments. Unpublished Doctoral Thesis, University of Tasmania.
- Grady, N.B., 1994. The primary-secondary transition from three perspectives: Teachers' images of the school; teachers' perceptions of the work climate; and students' perceptions of the classroom environment. Paper presented at the sixth post-graduate students' and lecturers' Research Seminar in Educational Administration, Melbourne.
- Grevholm, B. & Hanna, G., 1995. *Gender and Mathematics Education*. Sweden: Lund University Press
- Haertel, G.D., Walberg, H.J. & Haertel, E.H., 1981. Socio-psychological environments and learning: A quantitative synthesis. *British Educational Research Journal*, 7, 27-36.

- Halpin, A.W. & Croft, D.B., 1963. *Organisational Climate of Schools*. Chicago: Midwest Administration Centre.
- Hargreaves, A. & Tickle, L. (Eds.), 1980. *Middle Schools: Origin, Ideology and Practice*. London: Harper and Row.
- Hartshorne, H. & May, M., 1974. Studies in deceit. In R.H. Moos, (Ed.), *Evaluating Treatment Environments: A Social Ecological Approach*, (p.3). New York: John Wiley and Sons.
- Hattie, J.A., Byrne, D.B. & Fraser, B.J., 1987. Research into students' perceptions of preferred learning environment. In B.J. Fraser (Ed.), *The Study of Learning Environments, 2*, (pp.80-89). Perth: Curtin University of Technology.
- Hemphill, J.K. & Westie, C.M., 1950. The measurement of group dimensions. *Journal of Psychology*, 29, 325-342.
- Henderson, D.G., Fisher, D.L. & Fraser, B.J., 1994. Learning environments and student outcomes in senior high school biology classes. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Anaheim.
- Henning, D., 1997. Prospect High School. In M. Falk, R. Radford & H. Smigiel (Eds.), *Partnerships for Professional Learning: The Innovative Links Roundtable in Tasmania*. (pp.13-15). Hobart: Tasmanian Educational Consortium.
- Hirsch, B.J. & Rapkin, B.D., 1987. The transition to junior high school: A longitudinal study of self esteem, psychological symptomatology, school life, and social support. *Child Development*, 58, 1235-1243.
- Hofstein, A. & Lazarowitz, R. 1986. A comparison of the actual and preferred classroom learning environment in biology and chemistry as perceived by high school students. *Journal of Research in Science Teaching*, 23, 189-199.

- Hofstein, A. & Lunetta, V.N., 1982. The role of the laboratory in science teaching: Neglected aspects of research. *Review of Educational Research*, 52, 201-217.
- Holland, J., 1966. *The Psychology of Vocational Choice: A Theory of Personality Types and Model Environments*. Waltham: Blaisdell.
- Howe, K., 1988. Against the quantitative-qualitative incompatibility thesis: Or dogmas die hard. *Educational Researcher*, 17(11), 10-16.
- Huang, I. & Fraser, B.J., 1997. The development of a questionnaire for assessing student perceptions of classroom climate in Taiwan and Australia. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Chicago.
- Huey, W.C., 1985. Informal-processing groups: A peer-led orientation approach. *The School Counselor*, 33, 3-8.
- Invermay Primary School, 1992. Parent information folder. Invermay Primary School, Tasmania.
- Jarman, R., 1990. Primary science-secondary science continuity: A new era? *School Science Review*, 71, 19-29.
- Jensen, C., 1983. *Transition from Primary to Secondary School*. Sydney: Inner City Education Centre.
- Karweit, N. & Hansell, S. 1983. School organisation and friendship selection. In J.L. Epstein & N. Karweit (Eds.), *Friends in School: Patterns of Selection and Influence in Secondary Schools*. New York: Academic Press.
- Kelly, A. (Ed.), 1987. *Science for Girls?* Milton Keynes: Open University Press.
- Kent, H.A. 1992. Meeting student needs: Teacher personality and interpersonal style in the classroom. Paper presented at the Second National Conference on Post Compulsory Education, Launceston, Tasmania.

- Kite, L. (Ed.), 1996. *Implementing Cross-Curricular Approaches in Schools: Case Study No. 2.* (pp.25-41). Canberra: Australian Curriculum Studies Association.
- Kohut, S., 1976. *The Middle School: A Bridge Between Elementary and Secondary Schools.* Washington: National Education Association.
- Kremer-Hayon, L. & Wubbels, T., 1992. Interpersonal relationships of cooperation teachers and student teachers' satisfaction with supervision. *Journal of Classroom Interaction*, 27, 31-38.
- Kuert, W.P., 1979. Curricular structure. In H.J. Walberg (Ed.), *Educational Environments and Effects*, (pp.180-199). Berkeley: McCutchan Publishing.
- Lauderdale Primary School, 1992. Parent information folder. Lauderdale Primary School, Tasmania.
- Lawrenz, F., 1987. Gender effects for student perception of the classroom psychosocial environment. *Journal of Research in Science Teaching*, 24, 689-697.
- Leary, T., 1957. *An Interpersonal Diagnosis of Personality.* New York: Ronald Press Company.
- Levy, J., Rodriguez, R. & Wubbels, T., 1992. Instructional effectiveness, communication style and teacher development. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Levy, J., Wubbels, T. & Brekelmans, M., 1992. Student and teacher characteristics and perceptions of teacher communication style. *Journal of Classroom Interaction*, 27 (1), 23-29.
- Lewin, K., 1935. *A Dynamic Theory of Personality.* New York: McGraw-Hill.

- Lipsitz, J.S., 1980. The age group. In M. Johnson (Ed.), *Toward Adolescence: The Middle School Years*, (p.22). Chicago: National Society for the Study of Education.
- Lorsbach, A.W., 1990. Air drums and boredom: How a smart kid survives science class. Paper presented at the annual meeting of the American Educational Research Association, Boston.
- Major, G.R., 1983. Some aspects of transition from years 6 to 7 in the A.C.T. Unpublished Master of Education Dissertation, Canberra College of Advanced Education.
- McDade, T.J., 1982. Is the middle school worth considering? *Momentum*, 13.
- McGee, C., 1989. Crossing the divide. Transition from primary to secondary school. *Set, I (8)*, 1-4.
- McRobbie, C.J, Fisher, D.L. & Wong, A., 1998. Personal and class forms of classroom environment instruments. In, B.J. Fraser & K.G. Tobin (Eds.), *International Handbook on Science Education*, (pp.581-594). Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Midgley, C., Anderman, E. & Hicks, L, 1995. Differences between elementary and middle school teachers and students: A goal theory approach. *Journal of Early Adolescence*, 15 (1), 90-113.
- Midgley, C., Eccles, J.S. & Feldlaufer, H., 1989. Student/teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Journal of Child Development*, 60, 981-92
- Midgley, C., Eccles, J.S. & Feldlaufer, H., 1991. Classroom environment and the transition to junior high school. In B.J. Fraser & H.J. Walberg (Eds.), *Educational Environments: Evaluation, Antecedents and Consequences*, (pp.131-139). Oxford: Pergamon Press.

- Milligan, S., Thompson, K. & Ashenden & Associates, 1992. *Listening to Girls: A Report on the Consultancy Undertaken for the Review of the National Policy for the Education of Girls*. Canberra: Australian Education Council.
- Ministry of Education of Victoria, 1990. *A Fair Go For All: Guidelines for Gender-inclusive Curriculum*. Melbourne: Government Printer.
- Moos, R.H., 1974a. *Evaluating Treatment Environments: A Social Ecological Approach*. New York: John Wiley and Sons.
- Moos, R.H., 1974b. *Preliminary Manual for the Work Environment Scale*. Palo Alto: Consulting Psychologists Press.
- Moos, R.H., 1976. *The Human Context: Environmental Determinants of Behavior*. New York: John Wiley and Sons.
- Moos, R.H., 1979. *Evaluating Educational Environments: Procedures, Measures, Findings and Policy Implications*. San Francisco: Jossey-Bass.
- Moos, R.H., 1987. *The Social Climate Scales: A User's Guide*. Palo Alto: Consulting Psychologists Press.
- Moos, R.H. & Gerst, M.S., 1972. Social ecology of university student residences. *Journal of Educational Psychology*, 63, 513-525.
- Morgan, D.B., 1986. The educational advantages and disadvantages of retaining St. Patrick's College grade seven at Newstead. Unpublished Master of Education Dissertation, Tasmanian Institute of Technology.
- Murray, H., 1938. *Explorations in Personality*. New York: Oxford University Press.
- Musgrave, P.W., 1979. *Society and the Curriculum in Australia*. Sydney: George Allen and Unwin.
- National Science Foundation, 1997. *Review of Instructional Materials for Middle School Science*. VA: world wide web: <http://www.nsf.gov>.

- New South Wales Ministry of Education, 1957. *Report of the Committee to Survey Secondary Education*. (Wyndham Committee Report). Sydney: Government Printer.
- Nicholson, J., 1990. An extended project looking at the transfer of pupils from primary to secondary school. *LINKS*, 15 (2), 28-32.
- Nisbet, J.D., & Entwistle, N.J., 1969. *The Transition to Secondary Education*. London: University of London Press.
- Owens, R. G. & Steinhoff, C. L., 1976. *Administering Change in Schools*. New Jersey: Prentice- Hall.
- Owens, R.G., 1987. *Organisational Behavior in Education* (3rd. Edition). New Jersey: Prentice- Hall (Inc).
- Pace, C.R & Stern, G.G., 1958. An approach to the measurement of psychological characteristics of college environments. *Journal of Educational Psychology*, 49, 269-277.
- Pace, G. (Ed.), 1995. *Whole Learning in the Middle School: Evolution and Transition*. Boston: Christopher-Gordon Publishers.
- Pollard, W., 1978. The missing link, *The Primary Journal*, 2.
- Power, C., 1981a. Changes in students' attitudes toward science in the transition between Australian elementary and secondary schools. *Journal of Research in Science Teaching*, 18, 33-39.
- Power, C. & Cotterell, J., 1981. Changes in Students in the Transition from Primary to Secondary School. (Educational Research and Development Committee Report No. 27). Canberra: Australian Government Publishing Service.
- Rentoul, A.J. & Fraser, B.J., 1979. Conceptualization of enquiry-based or open learning environments. *Journal of Curriculum Studies*, 11, 233-245.
- Riverside High School, 1993. Parent information. Riverside High School, Tasmania.

- Rosenshine, B., 1970. Evaluation of classroom instruction. *Review of Educational Research*, 40, 279-300.
- Schwartz, G., Merten, D. & Bursik Jr., R.J., 1987. Teaching styles and performance values in junior high school: The impersonal, nonpersonal, and personal. *American Journal of Education*, 95, 346-370.
- Scotch-Oakburn College, 1993. Prospectus. Scotch-Oakburn College, Tasmania.
- Sen, V., 1978. Primary-secondary transition: Coping in a new school environment. Unpublished Master of Education Thesis, Canberra College of Advanced Education, Canberra.
- Silins, H., 1994. Factors influencing achieved and anticipated student outcomes in the transition years. Paper presented at the International Congress for School Effectiveness and Improvement, Melbourne.
- Simmons, R.G., Blyth, D.A., Van Cleave, E.F. & Bush, D.M., 1979. Entry into early adolescence: The impact of school structure, puberty, and early dating on self esteem. *American Sociological Review*, 44, 948-967.
- Simmonds, R.G. & Blyth, D.A., 1987. *Moving into Adolescence: The Impact of Pubertal Change and School Context*. New York: Aldine de Gruyler.
- Simmons, R.G., Burgeson, R., Carlton-Ford, S. & Blyth, D.A., 1987. The impact of cumulative change in early adolescence. *Child Development*, 58, 1220-1234.
- Slater, P.E., 1962. Parental behaviour and the personality of the child. *Journal of Genetical Psychology*, 101, 53-68.
- Speering, W. & Rennie, L., 1996. Students' perceptions about science: The impact of transition from primary to secondary school. *Research in Science Education*, 26, 283-298.

- Steinberg, L., 1996. *Adolescence*. (4 th edition). New York: McGraw Hill.
- Stillman, A., 1984. Transfer from school to school. *Journal of Educational Research*, 26, 167-171.
- Talmage, H. & Eash, M.J.A., 1978. A paradigm for designing evaluation studies of three determinants of the classroom learning environment: Curriculum, instruction, and instructional materials. Paper presented at the annual meeting of the American Educational Research Association, Toronto.
- Talmage, H. & Hart, A.A., 1977. A study of investigative teaching of mathematics and effects on the classroom learning environment. *Journal of Research in Mathematics Education*, 8, 345-358.
- Talmage, H. & Walberg, H.J., 1978. Naturalistic, decision-oriented evaluation of a district reading program. *Journal of Reading Behavior*, 10, 185-195.
- Taylor, P., Dawson, V., & Fraser, B.J. 1994. Classroom learning environments under transformation: A constructivist perspective. Paper presented at the annual meeting of the American Educational Research Association, San Fransisco.
- Terwel, J., Brekelmans, M., Wubbels, T. & van den Eeden, P. 1994. Gender differences in perceptions of the learning environment in physics and mathematics education. In D.L. Fisher (Ed.), *The Study of Learning Environments*, 8, (pp. 39- 51). Perth: Curtin University of Technology.
- Tobin, K. & Capie, W., 1982. Relationships between classroom process variables and middle-school science achievement. *Journal of Educational Psychology*, 74, 441-454.

- Tobin, K. & Fraser, B.J., 1998. Qualitative and quantitative landscapes of classroom learning environments. In B.J. Fraser & K.G. Tobin (Eds.), *International Handbook of Science Education*, (pp. 623-640). Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Tobin, K. & Garnett, P., 1987. Gender related differences in classroom processes in science activities. *Science Education*, 71, 91-103.
- Tobin, K., 1990. Research on science laboratory activities: In pursuit of better questions and answers to improve learning. *School Science and Mathematics*, 90, 403-418.
- Trickett, E.J. & Moos, R.H., 1973, Social environment of junior high and high school programs. *Journal of Educational Psychology*, 65, 93-102.
- Van Gennep, A., 1960 (First edition, 1909). *The Rites of Passage*. Chicago: University of Chicago Press.
- Walberg, H.J., 1969. Class size and the social environment of learning. *Human Relations*, 22, 465-475.
- Walberg, H.J., 1976. The psychology of learning environments: Behavioral, structural, or perceptual? *Review of Research in Education*, 4, 142-178.
- Walberg, H.J., 1986. Synthesis of research on teaching. In M.C. Wittrock (Ed.), *Handbook of Research on Teaching* (3rd. ed.) (pp.214-229). New York: Macmillan.
- Walberg, H.J., 1987. Learning environment reconsidered: Educational productivity and talent development. In B.J. Fraser (Ed.), *The Study of Learning Environments*, 3, (pp. 1-9). Perth: Curtin University of Technology.
- Walberg, H.J. & Ahlgren, A., 1970. Predictors of the social environment of learning. *American Educational Research Journal*, 7, 153-167.

- Ward, B.A., Mergendoller, J.R. & Tikunoff, W.J., 1982. Introduction to the junior high school transition study. *Journal of Early Adolescence*, 4, 311-317.
- Wilson, R.J., 1990. The transition of primary school children into high school. Education Project, Tasmanian Institute of Technology.
- Woodhouse, M., 1983. Specially trained teachers for pupils in transition from primary to secondary. *The South Pacific Journal of Teacher Education*, 11, 60-67.
- Wubbels, T. & Levy, J., 1989. A comparison of Dutch and American interpersonal teacher behaviour. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Wubbels, T. & Levy, J., 1991. A comparison of interpersonal behaviour of Dutch and American teachers. *International Journal of Intercultural Relationships*, 15, 1-18.
- Wubbels, T. & Levy, J., 1993. *Do You Know What You Look Like? Interpersonal Relationships in Education*. London: Falmer Press.
- Wubbels, T., Brekelmans, M. & Hermans, J., 1987. Teacher behaviour: An important aspect of the learning environment. In B.J. Fraser (Ed.), *The Study of Learning Environments*, 3, (pp. 10-25). Perth: Curtin University of Technology.
- Wubbels, T., Brekelmans, M. & Hooymayers, H.P., 1992. Do teacher ideals distort the self-reports of their interpersonal behaviour? *Journal of Teaching and Teacher Education*, 8 (1), 47-58.
- Wubbels, T., Creton, H., Levy, J. & Hooymayers, H., 1993. The model for interpersonal teacher behaviour. In T. Wubbels & J. Levy (Eds.), *Do You Know What You Look Like? Interpersonal Relationships in Education*, (pp. 13-28). London: Falmer Press.
- Youngman, M.B., 1978. Six reactions to school transfer. *British Journal of Educational Psychology*, 48, 280-289.

APPENDIX A: Grade 6 Questionnaire
STUDENT QUESTIONNAIRE Part 1 : 6-7 Transition

Name: _____ School: _____

Class: _____

1. How long have you been at this school? _____
2. Which high school do you intend to go to next year ? _____
3. Do you have any older brothers or sisters that have been to High School, or are there now? _____
4. Do you like school? _____
5. Do you think you are good at schoolwork? _____
6. What do you like about this school? (List as many things as you can think of):

7. Can you think of one word or a short statement that could describe this school best?

8. What do you like about your teacher? (List as many things as you can think of.)

9. Think of the students in grade six who are most popular with the **teachers**. Why do you think they are so popular? _____

10. Think of the students in grade six who are most popular with other **students**. Why do you think they are so popular? _____

11. What sort of things do students commonly get into trouble for at this school?

12. What sort of things do students commonly get praise for at this school?

13. Which subjects are you looking forward to most at high school?

Why? _____

14. What are you frightened of/concerned about most at the thought of being at High School? _____

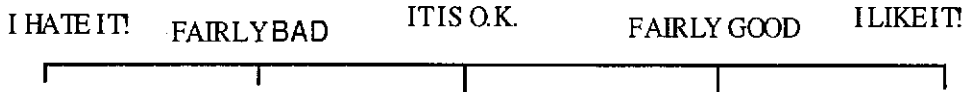
15. What are you excited about most?

16. How do you think being at High School will be different from primary school? (Write as many things as you can think of.)

17. Think back over primary school. Name the two things that you did at school that you enjoyed most. (Not necessarily studies.)

1. _____ 2. _____

18. On the line graph below mark where you would place each of your current school subjects. (From those you like least to most.)



Health

Language (reading/writing/spelling)

Library

Maths

Music

P.E.

Science

Social Science

Sport

Technology/Craft

QUESTIONNAIRE PART 2 - CLASSROOMS
MY CLASS INVENTORY
PART A- Actual

What is your classroom like?

**If you agree with the sentence circle yes.
 If you don't agree with the sentence, circle no.**

Teacher Use Only

S _____ F _____ Cm _____ D _____ Ch _____

START HERE	Circle Your Answer		Teacher Use Only
1. The pupils enjoy their school work in my class.	Yes	No	+ _____ S
2. Pupils are always fighting with each other.	Yes	No	+ _____ F
3. In our class the work is hard to do.	Yes	No	+ _____ D
4. Some of the pupils in our class are mean.	Yes	No	+ _____ F
5. Most pupils are pleased with the class.	Yes	No	+ _____ S
6. Pupils often race to see who can finish first.	Yes	No	+ _____ Cm
7. Most pupils can do their school work without help.	Yes	No	- _____ D
8. Some pupils don't like the class.	Yes	No	- _____ S
9. Most pupils want their work to be better than their friend's work.	Yes	No	+ _____ Cm
10. Many pupils in our class like to fight.	Yes	No	+ _____ F
11. Only the smart people can do the work in our class.	Yes	No	+ _____ D
12. In my class everybody is my friend.	Yes	No	+ _____ Ch
13. Most of the pupils in my class enjoy school.	Yes	No	+ _____ S
14. Some pupils don't like other pupils.	Yes	No	+ _____ F
15. Some pupils feel bad when they do not do as well as the others.	Yes	No	+ _____ Cm
16. Most pupils say the class is fun.	Yes	No	+ _____ S
17. Some people in my class are not my friends.	Yes	No	- _____ Ch
18. Pupils often find their work hard.	Yes	No	+ _____ D

	Circle Your Answer		Teacher Use Only
	Yes	No	
19. Most pupils don't care who finishes first.	Yes	No	- ____ Cm
20. Some pupils don't like other pupils.	Yes	No	+ ____ F
21. Some pupils are not happy in the class.	Yes	No	- ____ S
22. All of the pupils know each other well.	Yes	No	+ ____ Ch
23. Only the smart pupils can do their work.	Yes	No	+ ____ D
24. Some pupils always try to do their work better than the others.	Yes	No	+ ____ Cm
25. Pupils seem to like the class.	Yes	No	+ ____ S
26. Certain pupils always want to have their own way.	Yes	No	+ ____ F
27. All pupils in my class are close friends.	Yes	No	+ ____ Ch
28. Many pupils in our class say that school is easy.	Yes	No	- ____ D
29. In our class some pupils always want to do best.	Yes	No	+ ____ Cm
30. Some of the pupils don't like the class.	Yes	No	- ____ S
31. Pupils in our class fight a lot.	Yes	No	+ ____ F
32. All of the pupils in my class like one another.	Yes	No	+ ____ Ch
33. School work is hard to do.	Yes	No	+ ____ D
34. Certain pupils don't like what other pupils do.	Yes	No	+ ____ F
35. A few pupils in my class want to be first all of the time.	Yes	No	+ ____ Cm
36. The class is fun.	Yes	No	+ ____ S
37. Most of the pupils in my class know how to do their work.	Yes	No	- ____ D
38. Pupils in our class like each other as friends.	Yes	No	+ ____ Ch

MY CLASS INVENTORY
PART B- Preferred

**If you could have your classroom any way you like, how would it be?
If you agree with the sentence circle yes. If you don't agree with the sentence,
circle no.**

Teacher Use Only

S _____ F _____ Cm _____ D _____ Ch _____

START HERE	Circle Your Answer		Teacher Use Only
1. The pupils would enjoy their school work in the class.	Yes	No	+ _____ S
2. Pupils would always be fighting with each other.	Yes	No	+ _____ F
3. In the class the work would be hard to do.	Yes	No	+ _____ D
4. Some of the pupils in the class would be mean.	Yes	No	+ _____ F
5. Most pupils would be pleased with the class.	Yes	No	+ _____ S
6. Pupils often would race to see who could finish first.	Yes	No	+ _____ Cm
7. Most pupils could do their school work without help.	Yes	No	- _____ D
8. Some pupils would not like the class.	Yes	No	- _____ S
9. Most pupils would want their work to be better than their friend's work.	Yes	No	+ _____ Cm
10. Many pupils in the class would like to fight.	Yes	No	+ _____ F
11. Only the smart people would be able to do the work in our class.	Yes	No	+ _____ D
12. In the class everybody would be my friend.	Yes	No	+ _____ Ch
13. Most of the pupils in the class would enjoy school.	Yes	No	+ _____ S
14. Some pupils would not like other pupils.	Yes	No	+ _____ F
15. Some pupils would feel bad when they did not do as well as the others.	Yes	No	+ _____ Cm
16. Most pupils would say the class is fun.	Yes	No	+ _____ S
17. Some people in the class would not be my friends.	Yes	No	- _____ Ch

	Circle Your Answer		Teacher Use Only
18. Pupils would often find their work hard.	Yes	No	+ ____ D
19. Most pupils would not care who finished first.	Yes	No	- ____ Cm
20. Some pupils would not like other pupils.	Yes	No	+ ____ F
21. Some pupils would not be happy in the class.	Yes	No	- ____ S
22. All of the pupils would know each other well.	Yes	No	+ ____ Ch
23. Only the smart pupils would be able to do their work.	Yes	No	+ ____ D
24. Some pupils would always try to do their work better than the others.	Yes	No	+ ____ Cm
25. Pupils would seem to like the class.	Yes	No	+ ____ S
26. Certain pupils would always want to have their own way.	Yes	No	+ ____ F
27. All pupils in the class would be close friends.	Yes	No	+ ____ Ch
28. Many pupils in the class would say that school is easy.	Yes	No	- ____ D
29. In the class some pupils would always want to do best.	Yes	No	+ ____ Cm
30. Some of the pupils would not like the class.	Yes	No	- ____ S
31. Pupils in the class would fight a lot.	Yes	No	+ ____ F
32. All of the pupils in the class would like one another.	Yes	No	+ ____ Ch
33. School work would be hard to do.	Yes	No	+ ____ D
34. Certain pupils would not like what other pupils did.	Yes	No	+ ____ F
35. A few pupils in the class would want to be first all of the time.	Yes	No	+ ____ Cm
36. The class would be fun.	Yes	No	+ ____ S
37. Most of the pupils in the class would know how to do their work.	Yes	No	- ____ D
38. Pupils in the class would like each other as friends.	Yes	No	+ ____ Ch

QUESTIONNAIRE ON TEACHER INTERACTION

(ELEMENTARY VERSION)

STUDENT QUESTIONNAIRE - MY TEACHER

TEACHER'S NAME (OR CODE)

GRADE

TEACHER'S GENDER

MALE

FEMALE

(Please tick)

This questionnaire is not a test.

We want to know your opinion about how your teacher works with you.

We want you to answer honestly. Read each sentence. Circle.

	NEVER	SOMETIMES	ALWAYS
1. We all listen to this teacher.	1	2	3
2. This teacher is friendly.	1	2	3
3. This teacher trusts me.	1	2	3
4. This teacher lets us work on things that we are interested in.	1	2	3
5. This teacher is slow to make up his/her mind.	1	2	3
6. This teacher is unhappy.	1	2	3
7. This teacher gets angry quickly.	1	2	3
8. Work for this teacher has to be our best.	1	2	3
9. I learn a lot from this teacher.	1	2	3
10. This teacher likes to laugh.	1	2	3
11. This teacher explains again if I do not understand.	1	2	3
12. This teacher tells me what work I have to do.	1	2	3
13. This teacher is unsure.	1	2	3
14. This teacher is nasty to me.	1	2	3

	NEVER	SOMETIMES	ALWAYS
15. This teacher thinks that he/she is better than me.	1	2	3
16. This teacher lets us fool around.	1	2	3
17. We all want to co-operate with this teacher.	1	2	3
18. This teacher's classroom is a nice place to be.	1	2	3
19. This teacher knows when I do not understand.	1	2	3
20. This teacher gives us a lot of free time in class.	1	2	3
21. This teacher is shy.	1	2	3
22. This teacher is crabby.	1	2	3
23. This teacher makes fun of me.	1	2	3
24. This teacher makes sure that I do my work.	1	2	3
25. This teacher is enthusiastic.	1	2	3
26. This teacher likes me.	1	2	3
27. This teacher takes notice of what I say.	1	2	3
28. This teacher lets us choose who we work with.	1	2	3
29. This teacher knows what to do when I fool around.	1	2	3
30. This teacher thinks I cheat.	1	2	3
31. This teacher growls at me.	1	2	3
32. This teacher expects us to do our best.	1	2	3
33. This teacher explains things clearly.	1	2	3
34. This teacher helps me with my work.	1	2	3
35. This teacher knows how I feel.	1	2	3

	NEVER	SOMETIMES	ALWAYS
36. This teacher lets us fool around in class.	1	2	3
37. This teacher lets us boss him/her around.	1	2	3
38. This teacher thinks that we know very little about work.	1	2	3
39. It is easy to make this teacher angry.	1	2	3
40. This teacher makes sure we do our work well.	1	2	3
41. This teacher is sure about what he/she wants to happen in the classroom.	1	2	3
42. This teacher is interested in me.	1	2	3
43. This teacher listens to me.	1	2	3
44. This teacher lets us choose what we want to work on.	1	2	3
45. This teacher knows what he/she wants us to do.	1	2	3
46. This teacher thinks that I am able to do things well.	1	2	3
47. This teacher has a bad temper.	1	2	3
48. This teacher is strict.	1	2	3

QUESTIONNAIRE ON TEACHER INTERACTION
(ELEMENTARY VERSION)

STUDENT QUESTIONNAIRE -
MY BEST TEACHER

GRADE

TEACHER'S GENDER MALE FEMALE
(Please tick)

This questionnaire is not a test.
You do not need to put your name on the questionnaire.
We would like to know what you thought about **the best teacher** you have ever had.
Think about who was the best teacher you have had and decide who this teacher was.
Keep this teacher in your mind as you look at these sentences.
Show your opinion about this teacher by putting a circle around.

	NEVER	SOMETIMES	ALWAYS
1. We all listened to this teacher.	1	2	3
2. This teacher was friendly.	1	2	3
3. This teacher trusted me.	1	2	3
4. This teacher let us work on things that we were interested in.	1	2	3
5. This teacher was slow to make up his/her mind.	1	2	3
6. This teacher was unhappy.	1	2	3
7. This teacher got angry quickly.	1	2	3
8. Work for this teacher had to be our best.	1	2	3
9. I learned a lot from this teacher.	1	2	3
10. This teacher liked to laugh.	1	2	3
11. This teacher explained again if I did not understand.	1	2	3
12. This teacher told me what work I had to do.	1	2	3
13. This teacher was unsure.	1	2	3
14. This teacher was nasty to me.	1	2	3

	NEVER	SOMETIMES	ALWAYS
15. This teacher thought that he/she was better than me.	1	2	3
16. This teacher lets us fool around.	1	2	3
17. We all wanted to co-operate with this teacher.	1	2	3
18. This teacher's classroom was a nice place to be.	1	2	3
19. This teacher knew when I did not understand.	1	2	3
20. This teacher gave us a lot of free time in class.	1	2	3
21. This teacher was shy.	1	2	3
22. This teacher was crabby.	1	2	3
23. This teacher made fun of me.	1	2	3
24. This teacher made sure that I did my work.	1	2	3
25. This teacher was enthusiastic.	1	2	3
26. This teacher liked me.	1	2	3
27. This teacher took notice of what I said.	1	2	3
28. This teacher let us choose who we worked with.	1	2	3
29. This teacher knew what to do when I fooled around.	1	2	3
30. This teacher thought I cheated.	1	2	3
31. This teacher growled at me.	1	2	3
32. This teacher expected us to do our best.	1	2	3
33. This teacher explained things clearly.	1	2	3
34. This teacher helped me with my work.	1	2	3
35. This teacher knew how I felt.	1	2	3

	NEVER	SOMETIMES	ALWAYS
36. This teacher let us fool around in class.	1	2	3
37. This teacher let us boss him/her around.	1	2	3
38. This teacher thought that I knew very little about my work.	1	2	3
39. It was easy to make this teacher angry.	1	2	3
40. This teacher made sure we did our work well.	1	2	3
41. This teacher was sure about what he/she wanted to happen in class.	1	2	3
42. This teacher was interested in me.	1	2	3
43. This teacher listened to me.	1	2	3
44. This teacher let us choose what we wanted to work on.	1	2	3
45. This teacher knew what he/she wanted us to do.	1	2	3
46. This teacher thought that I was able to do things well.	1	2	3
47. This teacher had a bad temper.	1	2	3
48. This teacher was strict.	1	2	3

APPENDIX B: Grade 7 Questionnaire

GRADE 7 STUDENT QUESTIONNAIRE Part 1 : 6-7 Transition

Name: _____ School: _____

Class: _____

1. Which primary school did you go to last year ? _____

2. Do you like high school? _____

3. Do you think you are good at the schoolwork you do here? _____

4. What do you like about high school? (List as many things as you can think of):

5. Can you think of one word or a short statement that could describe high school best?

6. How do high school teachers differ from grade six teachers? (List as many things as you can think of.)

7. Think of the students in grade seven who are most popular with the **teachers**. Why do you think they are so popular? _____

8. Think of the students in grade seven who are most popular with other **students**. Why do you think they are so popular? _____

9. What sort of things do students commonly get into trouble for at this school?

10. What sort of things do students commonly get praise for at this school?

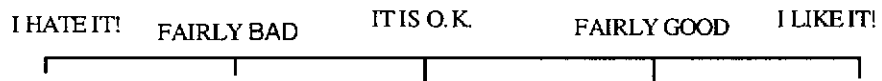
11. What has frightened /concerned you most about being at High School so far?

12. What have been the most exciting things?

13. How is being at High School different from primary school? (Write as many things as you can think of.) _____

14. What do you miss about primary school? _____

15. On the line graph below mark where you would place each of your current school subjects. (From those you like least to most.)



Art

Computing

Drama

Foreign Language

Health

Language (reading/writing/spelling)

Library

Maths

Music

P.E.

Science

Social Science

Sport

Technology/Craft

QUESTIONNAIRE PART 2 - CLASSROOMS
MY CLASS INVENTORY
PART A- Actual

What is your SCIENCE classroom like?

If you agree with the sentence circle yes. If you don't agree with the sentence, circle no.
 Teacher Use Only

S _____ F _____ Cm _____ D _____ Ch _____

START HERE	Circle Your Answer		Teacher Use Only
1. The pupils enjoy their school work in my class.	Yes	No	+ _____ S
2. Pupils are always fighting with each other.	Yes	No	+ _____ F
3. In our class the work is hard to do.	Yes	No	+ _____ D
4. Some of the pupils in our class are mean.	Yes	No	+ _____ F
5. Most pupils are pleased with the class.	Yes	No	+ _____ S
6. Pupils often race to see who can finish first.	Yes	No	+ _____ Cm
7. Most pupils can do their school work without help.	Yes	No	- _____ D
8. Some pupils don't like the class.	Yes	No	- _____ S
9. Most pupils want their work to be better than their friend's work.	Yes	No	+ _____ Cm
10. Many pupils in our class like to fight.	Yes	No	+ _____ F
11. Only the smart people can do the work in our class.	Yes	No	+ _____ D
12. In my class everybody is my friend.	Yes	No	+ _____ Ch
13. Most of the pupils in my class enjoy school.	Yes	No	+ _____ S
14. Some pupils don't like other pupils.	Yes	No	+ _____ F
15. Some pupils feel bad when they do not do as well as the others.	Yes	No	+ _____ Cm
16. Most pupils say the class is fun.	Yes	No	+ _____ S
17. Some people in my class are not my friends.	Yes	No	- _____ Ch
18. Pupils often find their work hard.	Yes	No	+ _____ D

	Circle Your Answer		Teacher Use Only
19. Most pupils don't care who finishes first.	Yes	No	- ____ Cm
20. Some pupils don't like other pupils.	Yes	No	+ ____ F
21. Some pupils are not happy in the class.	Yes	No	- ____ S
22. All of the pupils know each other well.	Yes	No	+ ____ Ch
23. Only the smart pupils can do their work.	Yes	No	+ ____ D
24. Some pupils always try to do their work better than the others.	Yes	No	+ ____ Cm
25. Pupils seem to like the class.	Yes	No	+ ____ S
26. Certain pupils always want to have their own way.	Yes	No	+ ____ F
27. All pupils in my class are close friends.	Yes	No	+ ____ Ch
28. Many pupils in our class say that school is easy.	Yes	No	- ____ D
29. In our class some pupils always want to do best.	Yes	No	+ ____ Cm
30. Some of the pupils don't like the class.	Yes	No	- ____ S
31. Pupils in our class fight a lot.	Yes	No	+ ____ F
32. All of the pupils in my class like one another.	Yes	No	+ ____ Ch
33. School work is hard to do.	Yes	No	+ ____ D
34. Certain pupils don't like what other pupils do.	Yes	No	+ ____ F
35. A few pupils in my class want to be first all of the time.	Yes	No	+ ____ Cm
36. The class is fun.	Yes	No	+ ____ S
37. Most of the pupils in my class know how to do their work.	Yes	No	- ____ D
38. Pupils in our class like each other as friends.	Yes	No	+ ____ Ch

CLASSROOM 2

What is your _____ classroom like?

If you agree with the sentence circle yes. If you don't agree with the sentence, circle no.
Teacher Use Only

S _____ F _____ Cm _____ D _____ Ch _____

START HERE	Circle Your Answer	Teacher Use Only
1. The pupils enjoy their school work in my class.	Yes No	+ _____ S
2. Pupils are always fighting with each other.	Yes No	+ _____ F
3. In our class the work is hard to do.	Yes No	+ _____ D
4. Some of the pupils in our class are mean.	Yes No	+ _____ F
5. Most pupils are pleased with the class.	Yes No	+ _____ S
6. Pupils often race to see who can finish first.	Yes No	+ _____ Cm
7. Most pupils can do their school work without help.	Yes No	- _____ D
8. Some pupils don't like the class.	Yes No	- _____ S
9. Most pupils want their work to be better than their friend's work.	Yes No	+ _____ Cm
10. Many pupils in our class like to fight.	Yes No	+ _____ F
11. Only the smart people can do the work in our class.	Yes No	+ _____ D
12. In my class everybody is my friend.	Yes No	+ _____ Ch
13. Most of the pupils in my class enjoy school.	Yes No	+ _____ S
14. Some pupils don't like other pupils.	Yes No	+ _____ F
15. Some pupils feel bad when they do not do as well as the others.	Yes No	+ _____ Cm
16. Most pupils say the class is fun.	Yes No	+ _____ S
17. Some people in my class are not my friends.	Yes No	- _____ Ch
18. Pupils often find their work hard.	Yes No	+ _____ D

	Circle Your Answer		Teacher Use Only
19. Most pupils don't care who finishes first.	Yes	No	- _____ Cm
20. Some pupils don't like other pupils.	Yes	No	+ _____ F
21. Some pupils are not happy in the class.	Yes	No	- _____ S
22. All of the pupils know each other well.	Yes	No	+ _____ Ch
23. Only the smart pupils can do their work.	Yes	No	+ _____ D
24. Some pupils always try to do their work better than the others.	Yes	No	+ _____ Cm
25. Pupils seem to like the class.	Yes	No	+ _____ S
26. Certain pupils always want to have their own way.	Yes	No	+ _____ F
27. All pupils in my class are close friends.	Yes	No	+ _____ Ch
28. Many pupils in our class say that school is easy.	Yes	No	- _____ D
29. In our class some pupils always want to do best.	Yes	No	+ _____ Cm
30. Some of the pupils don't like the class.	Yes	No	- _____ S
31. Pupils in our class fight a lot.	Yes	No	+ _____ F
32. All of the pupils in my class like one another.	Yes	No	+ _____ Ch
33. School work is hard to do.	Yes	No	+ _____ D
34. Certain pupils don't like what other pupils do.	Yes	No	+ _____ F
35. A few pupils in my class want to be first all of the time.	Yes	No	+ _____ Cm
36. The class is fun.	Yes	No	+ _____ S
37. Most of the pupils in my class know how to do their work.	Yes	No	- _____ D
38. Pupils in our class like each other as friends.	Yes	No	+ _____ Ch

QUESTIONNAIRE ON TEACHER INTERACTION

(ELEMENTARY VERSION) STUDENT QUESTIONNAIRE -

MY SCIENCE TEACHER

TEACHER'S NAME (OR CODE)

GRADE

TEACHER'S GENDER MALE FEMALE

(Please tick)

This questionnaire is not a test.

We want to know your opinion about how your teacher works with you.

We want you to answer honestly. Read each sentence. Circle.

	NEVER	SOMETIMES	ALWAYS
1. We all listen to this teacher.	1	2	3
2. This teacher is friendly.	1	2	3
3. This teacher trusts me.	1	2	3
4. This teacher lets us work on things that we are interested in.	1	2	3
5. This teacher is slow to make up his/her mind.	1	2	3
6. This teacher is unhappy.	1	2	3
7. This teacher gets angry quickly.	1	2	3
8. Work for this teacher has to be our best.	1	2	3
9. I learn a lot from this teacher.	1	2	3
10. This teacher likes to laugh.	1	2	3
11. This teacher explains again if I do not understand.	1	2	3
12. This teacher tells me what work I have to do.	1	2	3
13. This teacher is unsure.	1	2	3
14. This teacher is nasty to me.	1	2	3

	NEVER	SOMETIMES	ALWAYS
15. This teacher thinks that he/she is better than me.	1	2	3
16. This teacher lets us fool around.	1	2	3
17. We all want to co-operate with this teacher.	1	2	3
18. This teacher's classroom is a nice place to be.	1	2	3
19. This teacher knows when I do not understand.	1	2	3
20. This teacher gives us a lot of free time in class.	1	2	3
21. This teacher is shy.	1	2	3
22. This teacher is crabby.	1	2	3
23. This teacher makes fun of me.	1	2	3
24. This teacher makes sure that I do my work.	1	2	3
25. This teacher is enthusiastic.	1	2	3
26. This teacher likes me.	1	2	3
27. This teacher takes notice of what I say.	1	2	3
28. This teacher lets us choose who we work with.	1	2	3
29. This teacher knows what to do when I fool around.	1	2	3
30. This teacher thinks I cheat.	1	2	3
31. This teacher growls at me.	1	2	3
32. This teacher expects us to do our best.	1	2	3
33. This teacher explains things clearly.	1	2	3
34. This teacher helps me with my work.	1	2	3
35. This teacher knows how I feel.	1	2	3

	NEVER	SOMETIMES	ALWAYS
36. This teacher lets us fool around in class.	1	2	3
37. This teacher lets us boss him/her around.	1	2	3
38. This teacher thinks that we know very little about work.	1	2	3
39. It is easy to make this teacher angry.	1	2	3
40. This teacher makes sure we do our work well.	1	2	3
41. This teacher is sure about what he/she wants to happen in the classroom.	1	2	3
42. This teacher is interested in me.	1	2	3
43. This teacher listens to me.	1	2	3
44. This teacher lets us choose what we want to work on.	1	2	3
45. This teacher knows what he/she wants us to do.	1	2	3
46. This teacher thinks that I am able to do things well.	1	2	3
47. This teacher has a bad temper.	1	2	3
48. This teacher is strict.	1	2	3

QUESTIONNAIRE ON TEACHER INTERACTION - NUMBER 2

**(ELEMENTARY VERSION)
STUDENT QUESTIONNAIRE -**

MY _____ TEACHER

TEACHER'S NAME (OR CODE)

GRADE

TEACHER'S GENDER MALE FEMALE

(Please tick)

This questionnaire is not a test.

We want to know your opinion about how your teacher works with you.

We want you to answer honestly. Read each sentence. Circle.

	NEVER	SOMETIMES	ALWAYS
1. We all listen to this teacher.	1	2	3
2. This teacher is friendly.	1	2	3
3. This teacher trusts me.	1	2	3
4. This teacher lets us work on things that we are interested in.	1	2	3
5. This teacher is slow to make up his/her mind.	1	2	3
6. This teacher is unhappy.	1	2	3
7. This teacher gets angry quickly.	1	2	3
8. Work for this teacher has to be our best.	1	2	3
9. I learn a lot from this teacher.	1	2	3
10. This teacher likes to laugh.	1	2	3
11. This teacher explains again if I do not understand.	1	2	3
12. This teacher tells me what work I have to do.	1	2	3
13. This teacher is unsure.	1	2	3
14. This teacher is nasty to me.	1	2	3

	NEVER	SOMETIMES	ALWAYS
15. This teacher thinks that he/she is better than me.	1	2	3
16. This teacher lets us fool around.	1	2	3
17. We all want to co-operate with this teacher.	1	2	3
18. This teacher's classroom is a nice place to be.	1	2	3
19. This teacher knows when I do not understand.	1	2	3
20. This teacher gives us a lot of free time in class.	1	2	3
21. This teacher is shy.	1	2	3
22. This teacher is crabby.	1	2	3
23. This teacher makes fun of me.	1	2	3
24. This teacher makes sure that I do my work.	1	2	3
25. This teacher is enthusiastic.	1	2	3
26. This teacher likes me.	1	2	3
27. This teacher takes notice of what I say.	1	2	3
28. This teacher lets us choose who we work with.	1	2	3
29. This teacher knows what to do when I fool around.	1	2	3
30. This teacher thinks I cheat.	1	2	3
31. This teacher growls at me.	1	2	3
32. This teacher expects us to do our best.	1	2	3
33. This teacher explains things clearly.	1	2	3
34. This teacher helps me with my work.	1	2	3
35. This teacher knows how I feel.	1	2	3

	NEVER	SOMETIMES	ALWAYS
36. This teacher lets us fool around in class.	1	2	3
37. This teacher lets us boss him/her around.	1	2	3
38. This teacher thinks that we know very little about work.	1	2	3
39. It is easy to make this teacher angry.	1	2	3
40. This teacher makes sure we do our work well.	1	2	3
41. This teacher is sure about what he/she wants to happen in the classroom.	1	2	3
42. This teacher is interested in me.	1	2	3
43. This teacher listens to me.	1	2	3
44. This teacher lets us choose what we want to work on.	1	2	3
45. This teacher knows what he/she wants us to do.	1	2	3
46. This teacher thinks that I am able to do things well.	1	2	3
47. This teacher has a bad temper.	1	2	3
48. This teacher is strict.	1	2	3

APPENDIX C: Correspondence with Schools

Initial Letter to Potential Participants:

Principal, Staff and Parents (Schools X,Y,Z):

I am writing to see if your school 'cluster' (secondary school and linked primary feeders) would be willing to participate in a study I am conducting across a range of Tasmanian schools this year and next. (The research is being conducted, in part, as a contributor towards a Ph. D. study in science education.) The study looks at the issues of primary/secondary transition (from the student perspective) and has the following key objectives;

1. To identify general factors of concern/approval in regard to transition, both pre transition and early post transition.

2. To identify how students perceive primary school, (particularly grade 6) and high school (grade 7), in terms of;

- positives/strengths,
- negatives/worries,
- cultural identity,
- positive memories and influential events,
- attitudes to specific subjects,
- future expectations,
- learning environment similarities/ differences, and,
- teacher interaction similarities/differences.

3. To map changes in students subject preferences pre and post the change from primary to secondary, and to attempt to ascertain what influences may be contributing to these changes. Again, with a particular focus on science.

4. To identify any relationships between variables in 1,2 &3 above, again with particular reference to perceptions of science.

5. To test for similarities and differences in the above across various 'cluster' systems where the degree of change may vary (for example district schools compared with separate primary/secondary schools.)

Commitment on the part of individual schools would consist of allowing me access to grade 6 classes prior to the end of the grade six year and follow-up access to the same students again early in grade seven with some further follow-up later in grade seven. Each student would lose only about 1 hour of classtime at each of these sessions. I hope to undertake data collection myself at the schools, so extra burden placed upon teacher time should be minimal. The information gained will focus on five aspects;

- a) student perceptions of what primary school is like and what secondary school is like in a general 'cultural' sense;
- b) student attitudes to school and subjects;
- c) student subject preferences;
- d) classroom environment;
- e) teacher role and teacher/student interaction.

In each case the data will be used to make comparisons across transition, comparing categories of transition experiences and groups of students with common preferences/responses, **not** to compare individual schools, classes, teachers or students.

I have completed a similar study as a pilot using one of the Launceston cluster groups in 1991/2 and preliminary data suggest that valuable insight may well be gained into;

- a) what students see as strengths and weaknesses of the primary and secondary approaches;
- b) what concerns students most about transition (and what they are excited about most);
- c) what it is about particular subjects teaching approaches and students, that turns students on or off certain discipline areas at the critical starting period of secondary school; and,
- d) what effect transition background and gender may have on the above.

Findings will be made available to participating schools.

Given the longitudinal nature of the research I need whole secondary /feeder school clusters to participate as a group, otherwise it is not possible for me to track students and class groups across the transition satisfactorily. I am hoping for a total sample of about 1000 students taken from across a range of cluster 'types'. Each of the schools in your cluster has also been sent this letter requesting participation. I have not sent this letter to all schools throughout the state at this stage, but rather have selected those that will give me the representative range required for my sample.

I hope to begin collecting data with grade 6 groups around the end of October. The grade 7 follow-up would be sometime around Easter next year. Parent information/request forms will be supplied by me if required. (In the pilot study, parents were informed, and queries invited through inserts placed in school newsletters; this seemed to be an efficient and satisfactory channel of communication. I will be happy to produce and provide any such documentation you may require.)

Departmental approval has been granted to conduct this research in government schools, subject to agreement by the schools approached.

I will follow up this letter with a phone call in the near future, If you have any questions about the study, I look forward to the opportunity to discuss them with you at that time.

The pilot study has provided some educationally interesting and potentially enlightening data. I hope you and your school community agree to participate in this, the principal, stage of the study.

Yours Sincerely;

Peter Ferguson
Researcher

Follow up letter:

The principal,

Thank you for agreeing to participate in my transition study. I will be in touch again by phone late in the week of Oct. 26 to confirm a time for my visit. In the meantime, I have enclosed the following for your interest and perusal;

- a copy of questionnaires to be used [note: The general questionnaire will have a more polished format, but questions will remain relatively unchanged].
- a notice to place in your parent newsletter, if possible. I have about 1200 participating students in this study making it impossible to contact all parents individually, but they do deserve to be informed and ask queries of me or withdraw their child if they wish. for that reason I include this letter. If parents have questions, they can contact me or leave a contact number with you which I will follow up prior to my visit.

If you have any concerns or queries arising from this material or elsewhere I will gladly discuss them with you when I phone.

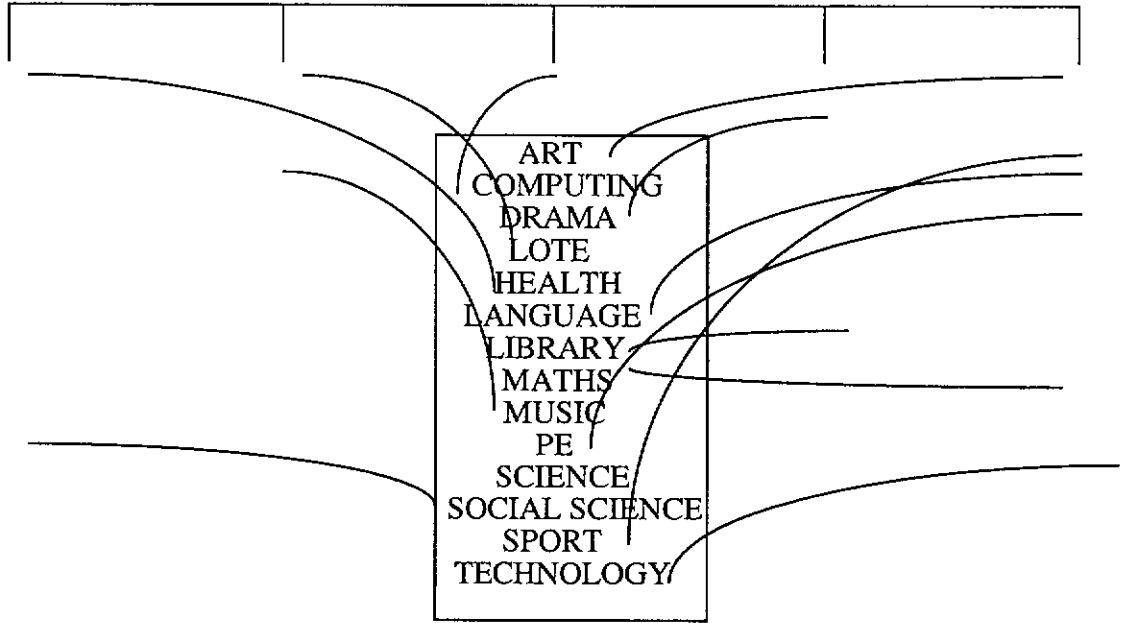
One further thing to save possible multiple calls, if you are expecting to be out of the school Oct. 29/30 could you please leave information with a delegate as to when a visit to the school might be appropriate or, perhaps more importantly, when it definitely not be convenient.

Again, thank you for your time and your interest

Peter Ferguson
Researcher

APPENDIX D: Example of Five-Point Scale Response

I HATE IT! FAIRLY BAD IT IS OK FAIRLY GOOD I LIKE IT!



APPENDIX E
 Example of Format for Spreadsheets
 QUESTION: DO YOU MISS PRIMARY SCHOOL?

	SCHOOLS																		
	A	B	B	B	B	B	B	C	C	C	C	C	D	D	D	E	E	E	E
Student Responses	01	02	03	04	05	06	07	08	09	10	11	11	11	12	13	14	15	16	17
Easier/less work	2/	2/2			1/	1/								2/2	1/				1/
Longer lessons for subjects		1/																	
Flexibility		1/																	
Longer recess/lunch		1/																	
Having own room	3/									1/				1/					
Being top grade oldest	1/	1/3	1/		1/			1/2		1/	1/3			1/	1/1	3/1		1/1	
Having (younger) Friends 1/1	11/7	1/1							4/1	1/	1/1	6/2	5/	4/2	2/	2/1	6/		
Atmosphere		1/																	
Special events		2/				2/2													
Some of the teachers																			
My (or specific) teacher	1/1	2/1	1/	7/1	4/	2/	4/	5/	1/	4/	1/1	1/1		9/3	5/1	2/1	1/1		3
Playing/3	2/		3/1	1/	2/	1/	1/	2/	2/	2/1	1/	1/	1/	1/					
Playground/equipment	1/	3/		2/	1/	1/	1/	1/		1/			1/	2/					
Sport			1/2																
The people/Schoolwork		1/			1/					1/	1/	1/2	1/2	1/	1/3			1/	
Excursions								2/1		1/		1/	1/	1/	1/1				
Everything	4/6	3/10	1/3	2/	1/	1/	1/	1/	1/4	1/	1/	1/2	1/	1/	1/3			1/	
Nothing				2/	1/	1/	1/4	1/3		1/2	2/2	1/	1/2	3/3	1/2	1/2	1/1		

[NOTE: Example section only, not the complete responses. A,B etc refers to sec. school. 01;02 the primary school. 1st. tally = female/2nd = male]

APPENDIX F
Example of data coding used for analysis

(STUDENT 1)

0001A01EN
132 525 2244153155
AC6F31313313111133331313331331133311313311
PC 33113313311331333133331131111311111313
MT6F232311223232212222221223223321223223111312222131
BT6F333211122221111232221112323311133333111321322321
22 524 12 44531545
SC7F31113123111331133111331111133331111313
EC7F31111111111111111111331111133111131311
ST7F233212233231111333221213333312332222112322221212
ET7F233212232231112232212223323321133322112322321221

(STUDENT 2)

0002A01MA
122 444 3542455352
AC6F11113331111333313113331333133111133313
PC 31113111111331133111331131331313111313
MT6F222132223231111322321213223311123213112232311211
BT6M333221123231111333321213333221122313111332321211
32 535 13 34542525
SC7F31113123111331133111331131131313111323
MC7F31113123111331133211331131331313111313
ST7F223121233221111322211213232311132223112322312212
MT7F333111123231111333211113222211133323112322312211

[NOTE: Row 1 = student/school & subject code (ie. 'other subject' allocation)
Row 2 = section 1 answers. Including subject ratings.
Row 3 = grade 6 actual MCI
Row 4 = grade 6 preferred MCI
Row 5 = grade 6 actual QTI
Row 6 = grade 6 preferred QTI
Row 7 = grade 7 section 1, including subject ratings.
Row 8 = grade 7 science MCI
Row 9 = grade 7 other subject MCI
Row 10 = grade 7 Science QTI
Row 11 = grade 7 other subject QTI
1,2 &3 rating refer to always (yes)/sometimes (maybe)/never (no) response.
Blanks marked as a 9]

APPENDIX G

Intercorrelation matrix for scales within the MCI

For School Means [N=47]

Grades: 6 Actual (6A); 6 Preferred (6P); 7 Science (7Sc); 7 Other Subjects (7G)

[*-significant LE .05 **-significant LE .01 2-tailed]

<u>Correl.</u>	Satis.6A	Frict. 6A	Comp.6A	Diff.6A	Cohes.6A	Satis. 6P	Frict.6P	Comp.6P	Diff.6P	Cohes.6P
Satis. 6A	1.00	-.65**	-.19	-.11	.48**	.55**	-.39**	-.30*	-.24	.38**
Frict. 6A	-.65**	1.00	.50**	.25-	-.25	-.48**	.46**	.34*	.17	-.29*
Comp.6A	-.19	.50**	1.00	.31*	-.15	.00	-.10	.08	.05	.17
Diff. 6A	-.11	.25	.31*	1.00	.18	-.21	.10	.26	.43**	.43**
Cohes. 6A	.48**	-.25	-.15	.18	1.00	.18	-.09	.05	.06	.30*
Satis. 6P	.55**	-.48**	.00	-.21	.18	1.00	-.85**	-.71**	-.34*	.62**
Frict. 6P	-.39**	.46**	-.10	.10	-.09	-.85**	1.00	.72**	.33*	-.71**
Comp. 6P	-.30*	.34*	.08	.26	.05	-.71**	.72**	1.00	.15	-.51**
Diff. 6P	-.24	.17	.05	.43**	.06	-.34*	.33*	.15	1.00	-.10
Cohes. 6P	.38**	-.29**	.17	.08	.30*	.62**	-.71**	-.51**	-.10	1.00
Satis. 7Sc	.41**	-.39**	-.26	-.09	.09	.22	-.19	.02	-.34*	.29*
Frict. 7Sc	-.48**	.51**	.32*	.04	-.16	-.34*	.31*	.17	.27	-.32*
Comp. 7Sc	-.31*	.53**	.53**	-.07	-.14	.01	-.13	-.11	-.04	.22
Diff. 7Sc	-.04	.40**	.28	.02	.27	-.32*	.30*	.28	.08	-.06
Cohes. 7Sc	.54**	-.28	-.21	-.03	.50**	.09	.04	.02	-.01	.22
Satis. 7G	.13	-.26	-.24	.06	.12	-.11	.15	.25	-.13	.09
Frict. 7G	-.40**	.58**	.36*	.17	-.15	-.22	.20	-.00	.37*	-.20

Compet.7G	-.30*	.43**	.51**	.04	-.31*	-.07	.01	.06	-.05	-.00
Diff.7G	-.25	.28	.35*	.07	-.07	-.42**	.28	.28	.31*	-.24
Cohes.7G	.36*	-.19	-.21	.01	.52**	-.14	.21	.18	.03	.10

<u>Correl.</u>	Satis. 7Sc	Frict.7Sc	Comp.7Sc.	Diff.7Sc	Cohes.7Sc	Satis.7G	Frict.7G	Comp.7G	Diff.7G	Cohes.7G
Satis. 7Sc	1.00	-.82**	-.36*	-.21	.46**	.43**	-.74**	-.34*	-.18	.33*
Frict. 7Sc	-.82**	1.00	.52**	.35*	-.53**	-.38**	.86**	.49**	.28	-.40**
Comp. 7Sc	-.36*	.52*	1.00	.43**	-.39**	-.46**	.58**	.76**	.23	-.52**
Diff. 7Sc	-.21	.35*	.43**	1.00	.16	-.06	.27	.33*	.34*	.34*
Cohes. 7Sc	.46**	-.53**	-.39**	.16	1.00	.31*	-.44**	-.50**	-.12	-.12
Satis. 7G	.43**	-.38**	-.46**	-.06	.31*	1.00	-.56**	-.39**	-.36*	-.36*
Frict. 7G	-.74**	.86**	.58**	.27	-.44**	-.56**	1.00	.57**	.24	-.44**
Compet.7G	-.34*	.49**	.76**	.33*	-.50**	-.39**	.57**	1.00	.27	-.52**
Diff.7G	-.18	.28	.23	.34*	-.12	-.36*	.24	.27	1.00	-.09
Cohes.7G	.33*	-.40**	-.40**	.24	.88**	.49**	-.44**	-.52**	-.09	1.00

Intercorrelation matrix for scales within the QTI

For School Means [N=47]

-Grades: 6 Actual (6A); 6 Preferred (6P); 7 Science (7Sc); 7 Other Subjects (7G)
 [*-significant LE .05 **-significant LE .01 2-tailed]

[Note: DC=Leadership; CD=Helpful/Friendly; CS=Understanding; SC=Student Resp./Freedom; SO=Uncertain;

OS=Dissatisfied; OD=Admonishing; DO=Strict.]

Correl. DC6A CD6A CS6A SC6A SO6A OS6A OD6A DO6A DC6P CD6P CS6P SC6P

DC6A	1.00	.85**	.84**	.64**	-.74**	-.82**	-.75**	.31*	.47**	.49**	.43**	.11
CD6A	.85**	1.00	.82**	.75**	-.60**	-.83**	-.71**	.09	.39**	.49**	.38**	.11
CS6A	.84**	.82**	1.00	.60**	-.75**	-.74**	-.65**	.20	.27	.35*	.42**	.15
SC6A	.64**	.75**	.60**	1.00	-.36*	-.66**	-.55**	.09	.20	.36*	.30*	.23
SO6A	-.74**	-.60**	-.75**	-.36*	1.00	.75**	.70**	-.02	-.02	-.30*	.37*	.27
OS6A	-.82**	-.83**	-.74**	-.66**	-.75**	1.00	.83**	.04	.04	-.30*	.37*	.27
OD6A	-.75**	-.71**	-.65**	-.55**	.70**	.83**	1.00	.04	.37*	-.25	-.06	.07
DO6A	.31*	.09	.20	-.07	-.22	-.02	.04	1.00	.37*	.37*	.26	-.13
DC6P	.47**	.39**	.27	.36*	-.19	-.30*	-.30*	.37*	1.00	.73**	.67**	.27
CD6P	.49**	.49**	.35*	.36*	-.22	-.31*	-.25	.37*	.73**	1.00	.79**	.40**
CS6P	.43**	.38**	.42**	.30*	-.23	-.23	-.06	.26	.67**	.79**	1.00	.53**
SC6P	.11	.11	.15	.23	.01	.05	.07	-.13	.27	.40**	.53**	1.00
SO6P	-.48**	-.36*	-.48**	-.18	.61**	.44**	.41**	-.31*	-.56**	-.42**	-.43**	-.10
OS6P	-.57**	-.66**	-.48**	-.52**	.36*	.55**	.52**	-.22	-.59**	-.73**	-.56**	-.19
OD6P	-.48**	-.54**	-.29*	-.52**	.18	.37*	.43**	-.14	-.56**	-.73**	-.54	-.28
DO6P	.30*	.25	.07	.09	-.16	-.24	-.19	.63**	.35*	.24	-.02	-.45**
DC7Sc	.14	.14	.13	.17	-.02	-.01	.02	.22	.38**	.23	.29*	-.16
CD7Sc	.12	.06	.19	.12	-.04	.07	-.00	.06	.39**	.18	.36*	-.03
CS7Sc	.11	.03	.25	.03	-.20	.05	-.01	.06	.26	.09	.32*	-.00
SC7Sc	.08	.08	.17	.22	-.07	.02	.07	-.06	.06	-.01	.20	.05
SO7Sc	-.20	-.10	-.24	-.08	.38**	.13	.17	-.28	-.24	-.08	-.14	.30*
OS7Sc	-.21	-.13	-.22	-.14	.13	.06	.14	-.20	-.33*	-.25	-.25	.25
OD7Sc	-.19	-.12	-.21	-.16	.14	.09	.19	-.13	-.31*	-.17	-.20	.27
DO7Sc	-.06	.01	-.13	-.09	.06	.02	.10	.40**	.11	-.03	-.19	-.38**
DC7G	.27	.11	.19	.19	-.28	-.10	-.17	.28	.13	.12	.10	-.02
CD7G	.18	-.01	.11	-.03	-.14	.07	.02	.38**	.16	.15	.23	.01
CS7G	.20	.02	.10	.02	-.21	-.02	-.07	.37*	.11	.18	.22	-.06
SC7G	.03	-.10	.01	.07	.04	.06	.15	.05	.01	-.09	.19	.09
SO7G	-.32*	-.20	-.34*	-.10	.54**	.32*	.36*	-.28	-.11	-.04	-.01	.30*
OS7G	-.20	-.07	-.14	-.02	.17	.02	.19	-.30*	-.23	-.09	-.13	.14
OD7G	-.14	.10	-.12	.11	.10	-.07	-.04	-.31*	.05	.09	-.11	.09
DO7G	.16	.17	-.01	.29	-.08	-.24	-.28	.23	.35*	.19	-.06	-.20
Correl.	SO6P	OS6P	OD6P	DO6P	DC7Sc	CD7Sc	CS7Sc	SC7Sc	SO7Sc	OS7Sc	OD7Sc	DO7Sc
DC6A	-.48**	-.57**	-.48**	.30*	.14	.12	.11	.08	-.20	-.21	-.19	-.06
CD6A	-.36*	-.66**	-.54**	.25	.14	.06	.03	.08	-.10	-.13	-.12	.01
CS6A	-.48**	-.48**	-.29*	.07	.13	.19	.25	.17	-.24	-.22	-.21	-.13

SC6A	-.18	-.52**	-.52**	.09	.17	.12	.03	.22	-.08	-.14	-.16	-.09
SO6A	.61**	.36*	.18	-.16	-.02	-.04	-.20	-.07	.38**	.13	.14	.06
OS6A	.44**	.55**	.37*	-.24	-.01	.07	.05	.02	.13	.06	.09	.02
OD6A	.41**	.52**	.43**	-.19	.02	-.00	-.01	.07	.17	.14	.19	.10
DO6A	-.31*	-.22	-.14	.63**	.22	.06	.06	-.06	-.28	-.20	-.13	.40**
DC6P	-.56**	-.59**	-.56**	.35*	.38**	.39**	.26	.06	-.24	-.33*	-.31*	.11
CD6P	-.42**	-.73**	-.73**	.24	.23	.18	.09	-.01	-.08	-.25	-.17	-.03
CS6P	-.43**	-.56**	-.54**	-.02	.29*	.36*	.32*	.20	-.14	-.25	-.20	-.19
SC6P	-.10	-.19	-.28	-.45**	-.16	-.03	-.00	.05	.30*	.25	.27	-.38**
SO6P	1.00	.55**	.26	-.21	-.22	-.23	-.26	.05	.45**	.28	.27	-.11
OS6P	.55**	1.00	.79**	-.27	-.20	-.10	.03	.11	.11	.22	.17	-.08
OD6P	-.26	.79**	1.00	-.17	-.20	-.09	.03	.11	.02	.16	.13	-.04
DO6P	-.21	-.27	-.17	1.00	.16	-.04	-.11	-.09	-.14	-.19	-.18	.50**
DC7Sc	-.22	-.20	-.20	.16	1.00	.82**	.74**	.52**	-.68**	-.79**	-.71**	.29*
CD7Sc	-.23	-.10	-.09	-.04	.82**	1.00	.89**	.66**	-.51**	-.86**	-.84**	.29*
CS7Sc	-.26	.03	.03	-.11	.74**	.89**	1.00	.64**	-.61**	-.75**	-.75**	.16
SC7Sc	.05	.11	.11	-.09	.52**	.66**	.64**	1.00	-.20	-.57**	-.59**	.16
SO7Sc	.45**	.11	.02	-.14	-.68**	-.51**	-.61**	-.20	1.00	.51**	.47**	.08
OS7Sc	.28	.22	.16	-.19	-.79**	-.86**	-.75**	-.57**	.51**	1.00	.92**	.08
OD7Sc	.27	.17	.13	-.18	-.71**	-.84**	-.78**	-.59**	.47**	.92**	1.00	.17
DO7Sc	-.11	-.08	-.04	.50**	.29*	-.16	-.16	-.39**	-.40**	.08	.17	1.00
DC7G	-.12	-.07	-.13	.12	.29*	.20	.25	.22	-.40**	-.19	-.19	.13
CD7G	-.08	.02	-.09	.15	.26	.21	.28	.21	-.38**	-.17	-.08	.18
CS7G	-.03	-.03	-.17	.12	.29*	.22	.29*	.22	-.38**	-.27	-.20	.13
SC7G	.12	.19	.04	-.14	.16	.14	.18	.39**	-.12	-.01	.01	-.04
SO7G	.42**	.21	.05	-.24	-.32*	-.20	-.29	-.12	.62**	.33*	.32*	-.28
OS7G	.19	.20	.23	-.19	-.27	-.26	-.28	-.08	.40**	.29*	.22	-.18
OD7G	.03	-.09	-.08	.00	-.19	-.24	-.28	-.17	.29*	.24	.16	-.03
DO7G	-.25	-.40**	-.30*	.36*	.30*	.08	-.02	-.25	-.24	-.28	-.26	.43**

Correl. DC7G CD7G CS7G SC7G SO7G OS7G OD7G DO7G

DC6A	.27	.18	.20	.03	-.32*	-.20	-.14	.16
CD6A	.11	-.01	.02	-.10	-.20	-.07	.10	.17
CS6A	.19	.11	.10	.01	-.34	-.14	-.12	-.01
SC6A	.19	-.03	.02	.07	-.10	-.02	.11	.29
SO6A	-.28	-.14	-.21	-.04	.54**	.17	.10	-.08
OS6A	-.10	.07	-.02	.06	.32*	.02	-.07	-.24

OD6A	-.17	.02	-.07	.15	.40*	.19	-.04	-.03
DO6A	.28	.38**	.37*	.05	-.28	-.30*	-.31*	.23
DC6P	.13	.16	.11	.01	-.11	-.23	.05	.35*
CD6P	.12	.15	.18	-.09	-.04	-.09	.09	.19
CS6P	.10	.23	.22	.19	-.01	-.13	-.11	-.06
SC6P	-.02	.01	-.06	.09	.30*	.14	.09	-.20
SO6P	-.12	-.08	-.03	.12	.42**	.19	.03	-.25
OS6P	-.07	.02	-.03	.19	.21	.20	-.09	-.40**
OD6P	-.13	-.08	-.17	.04	.05	.23	-.08	-.30*
DO6P	.12	.15	.12	-.14	-.24	-.19	.00	.36*
DC7Sc	.29*	.26	.29*	.16	-.32*	-.27	-.19	.30*
CD7Sc	.20	.21	.22	.14	-.20	-.26	-.24	.08
CS7Sc	.25	.28	.29*	.18	-.29	-.28	-.28	-.02
SC7Sc	.22	.21	.22	.39**	-.12	-.08	-.17	-.25
SO7Sc	-.40**	-.38**	-.38**	-.12	.62**	.40**	.29*	-.24
OS7Sc	-.19	-.17	-.27	-.01	.33*	.29*	.24	-.28
OD7Sc	-.19	-.08	-.20	.01	.32*	.22	.16	-.26
DO7Sc	.13	.18	.13	-.04	-.28	-.18	-.03	.43**
DC7G	1.00	.77**	.76**	.44**	-.65**	-.67**	-.59**	.16
CD7G	.77**	1.00	.88**	.61**	-.50**	-.80**	-.80**	-.08
CS7G	.76**	.88**	1.00	.54**	-.56**	-.70**	-.74**	.11
SC7G	.44**	.61**	.54**	1.00	-.12	-.47**	-.59**	-.23*
SO7G	-.66**	-.50**	-.56**	-.12	1.00	.59**	.43**	-.36*
OS7G	-.67**	-.80**	-.71**	-.47**	.59**	1.00	.78**	-.09
OD7G	-.59**	-.80**	-.74**	-.59**	.43**	.78**	1.00	.09
DO7G	.16	-.08	.11	-.30*	-.36*	-.09	.09	1.00

Correl.	DC6A	CD6A	CS6A	SC6A	SO6A	OS6A	OD6A	DO6A	DC6P	CD6P	CS6P	SC6P
Sais. 6A	.41**	.50**	.28	.31*	-.18	-.35*	-.45**	.17	.21	.35*	.10	.00
Friect.6A	-.37*	-.34*	-.26	-.09	.23	.30*	.41**	-.22	-.10	-.10	.05	.17
Compet.6A	-.01	.05	-.00	.22	-.08	-.08	-.07	-.00	.35*	.38**	.27	.21
Diff. 6A	.04	.00	-.03	-.01	.09	.12	.10	-.05	.07	.16	.14	-.06
Cohes.6A	.27	.29	.11	.26	.05	-.17	-.21	-.23	-.03	.23	.17	.30*
Sais.6P	.20	.34*	.05	.29*	-.07	-.30*	-.33*	.11	.21	.25	-.04	-.13
Friect.6P	-.18	-.33*	-.01	-.24	.05	.34*	.32*	-.09	-.23	-.24	.00	.22
Compet.6P	.07	-.08	.15	.01	-.18	.05	.21	-.06	-.03	-.04	.27	.22

Diff.6P	-.18	-.16	-.18	-.09	.36*	.20	.16	-.15	-.04	.01	-.10	-.13
Cohesion.6P	.22	.34*	.02	.27	.08	-.23	-.30*	.22	.35*	.39**	.15	-.20
Satis. 7Sc	.26	.24	.20	.33*	-.05	-.10	-.24	.09	.33*	.15	.22	.03
Frict. 7Sc	-.25	-.20	-.17	-.24	-.03	.05	.24	-.08	-.18	-.05	-.06	.09
Compet. 7Sc	-.17	-.07	-.22	.00	.19	.04	.17	.01	.20	.28	.18	.20
Diff. 7Sc	-.10	-.07	-.13	-.03	.20	.15	.22	.00	.07	.25	.25	.44**
Cohesion 7Sc	-.12	.11	.09	.15	.21	.11	-.09	.03	.16	.18	.16	.12
Satis. 7G	.22	-.04	.08	-.01	-.19	-.02	-.12	.38**	.01	.05	.06	-.02
Frict. 7G	-.30*	-.21	-.25	-.20	.17	.14	.26	-.15	-.09	-.03	-.12	.06
Compet. 7G	-.19	-.19	-.25	-.19	.08	.12	.20	.12	.18	.15	.06	.06
Diff. 7G	.10	.15	.17	.12	-.11	-.08	-.14	.12	.21	.15	.17	.26
Cohesion 7G	.10	-.01	.06	.01	.14	.16	-.03	.06	.06	.14	.15	.23

<u>Correl.</u>	SO6P	OS6P	OD6P	DO6P	DC7Sc	CD7Sc	CS7Sc	SC7Sc	SOTSc	OS7Sc	OD7Sc	DO7Sc
Satis. 6A	-.13	-.39**	-.43**	.27	.17	.08	.06	.06	-.29	-.25	-.01	-.01
Frict.6A	.13	.31*	.17	-.32*	-.08	-.08	-.11	-.12	.22	.24	.06	.06
Compet.6A	-.29*	-.25	-.28	-.01	-.04	-.07	-.14	-.25	.08	.05	.07	.07
Diff. 6A	.12	-.02	-.15	-.07	.20	.21	.04	.14	-.17	-.12	-.08	-.08
Cohes.6A	.24	-.16	-.33*	-.16	-.15	-.13	-.18	.03	.29*	.14	.16	-.32*
Satis.6P	-.16	-.46**	-.47**	.41**	-.00	-.22	-.26	-.19	.05	-.01	-.01	.30*
Frict.6P	.21	.54**	.51**	-.37**	-.01	.25	.31*	.33*	.00	-.04	.01	-.34*
Compet.6P	.01	.33*	.31*	-.40**	.20	.34*	.38**	.39**	-.27	-.09	-.03	-.25
Diff.6P	.39**	.18	.13	.01	-.08	.04	-.13	.09	.30*	-.04	.03	-.21
Cohesion.6P	.03	-.47**	-.62**	.44**	.15	-.07	-.20	-.18	-.05	-.06	-.09	.32*
Satis. 7Sc	-.15	-.21	-.37*	.04	.59**	.55**	.48**	.34*	-.44**	-.45**	-.46**	.13
Frict. 7Sc	.08	.19	.33*	-.14	-.33*	-.32*	-.22	-.18	.23	.35*	.36*	-.10
Compet. 7Sc	-.03	-.22	-.24	-.04	-.06	-.20	-.25	-.42**	.14	.18	.21	.26
Diff. 7Sc	.25	.09	-.05	-.21	-.14	-.18	-.14	-.16	.18	.27	.31*	-.01
Cohesion 7Sc	.11	.03	-.16	.00	.19	.21	.22	.21	-.07	-.21	-.22	-.08
Satis. 7G	.00	.04	-.07	.17	.17	.06	.10	.19	-.30*	-.04	.04	.13
Frict. 7G	.11	.16	.21	-.15	-.17	-.19	-.18	-.19	.25	.17	.19	-.06
Compet. 7G	-.11	-.06	.00	.02	.09	.02	.01	-.34*	-.11	-.02	.02	.26
Diff. 7G	-.13	-.09	-.02	-.16	-.14	.02	.02	-.18	-.04	.14	.04	-.17
Cohesion 7G	.13	.15	-.07	-.07	.02	.05	.10	.13	-.02	.01	.01	-.14

<u>Correl.</u>	DC7G	CD7G	CS7G	SC7G	SO7G	OS7G	OD7G	DO7G
Satis. 6A	.13	.06	.19	-.00	.02	.15	-.02	.20

Frict.6A	-.09	-.01	-.01	.05	.01	.16	.02	-.08
Compet.6A	-.01	-.08	-.02	-.16	-.10	.14	.29	.31*
Diff. 6A	.24	.18	.19	.17	-.19	-.11	-.10	-.05
Cohes.6A	.08	.14	.22	.14	.30*	.02	-.05	-.20
Satis.6P	-.21	-.23	-.15	-.21	.07	.05	.35*	.32*
Frict.6P	.14	.25	.18	.26	-.01	-.01	-.31*	-.41**
Compet.6P	.29*	.30*	.29*	.35*	-.08	.03	-.25	-.28
Diff.6P	-.07	-.08	-.13	-.10	.13	.17	.15	-.03
Cohesion.6P	.04	.06	.18	-.14	.02	-.17	.11	.32*
Satis.7Sc	.38**	.29*	.29*	.27	-.14	-.42**	-.28	.11
Frict.7Sc	-.29*	-.20	-.15	-.24	.06	.42**	.22	-.04
Compet.7Sc	-.27	-.18	-.09	-.31*	.15	.24	.25	.38**
Diff.7Sc	.00	.17	.19	.12	.27	.10	-.05	-.11
Cohesion7Sc	.21	.31*	.32*	.30*	.12	-.19	-.23	-.08
Satis.7G	.66**	.69**	.64**	.54**	-.36*	-.55**	-.60**	-.13
Frict.7G	-.35*	-.32*	-.24	-.36*	.09	.42**	.30*	.15
Compet.7G	-.19	-.12	-.07	-.41**	-.03	.17	.19	.41**
Diff.7G	.02	-.16	-.21	-.32*	-.06	.15	.24	.10
Cohesion7G	.27	.38**	.32*	.34*	.17	-.18	-.30*	-.29*

	7S	----	----	.5894	----	----	----	----	----
	7G	----	----	.3831	.6570	----	----	----	----
Helpfulness	6A	.4938	----	----	----	----	----	----	----
	6P	----	----	----	----	----	----	----	----
	7S	----	----	.5542	----	----	----	----	----
	7G	----	----	----	.6885	----	----	----	----
Underst.	6A	----	----	----	----	----	----	----	----
	6P	----	----	----	----	----	----	----	----
	7S	----	----	.4838	----	----	----	----	----
	7G	----	----	----	.6421	----	----	----	----
Resp/Free.	6A	----	----	----	----	----	----	----	----
	6P	----	----	----	----	----	----	----	----
	7S	----	----	----	----	----	----	----	----
	7G	----	----	----	.5445	----	----	----	----
Uncertainty	6A	----	----	----	----	----	----	----	----
	6P	----	----	----	----	----	----	----	----
	7S	----	----	-.4391	----	----	----	----	----
	7G	----	----	----	----	----	----	----	----
Dissatis.	6A	----	----	----	----	----	----	----	----
	6P	-.3944	-.4569	----	----	----	----	----	----
	7S	----	----	-.4528	----	----	----	----	----
	7G	----	----	-.4211	-.5503	----	----	.4168	.4242
Admonish.	6A	-.4506	----	----	----	.4072	----	----	----
	6P	-.4293	-.4692	----	----	.5067	----	----	----
	7S	----	----	-.4565	----	----	----	----	----
	7G	----	----	----	-.6016	----	----	----	----
Strictness	6A	----	----	----	.3784	----	----	----	----
	6P	----	.4067	----	----	----	----	-.3733	----
	7S	----	----	----	----	----	----	----	----
	7G	----	----	----	----	----	----	-.4117	----

	7S	----	----	.4638	----				
	7G	----	----	----	.4918				
Friction	6A	----	----	----	----				
	6P	----	-.7107	----	----				
	7S	----	----	-.5277	-.3988				
	7G	----	----	-.4376	-.4362				
Compet.	6A	----	----	----	----				
	6P	----	-.5128	----	----				
	7S	----	-.3854	----	-.3965				
	7G	----	----	-.5016	-.5217				
Difficulty	6A	----	----	----	----				
	6P	----	----	----	----				
	7S	----	----	----	----				
	7G	----	----	----	----				
Cohesion	6A	1.000	----	.5002	.5204				
	6P	----	1.000	----	----				
	7S	.5002	----	1.000	.8815				
	7G	.5204	----	.8815	1.000				
Leadership	6A	----	----	----	----	1.000	.4699	----	----
	6P	----	----	----	----	.4699	1.000	----	----
	7S	----	----	----	----	----	.3817	1.000	----
	7G	----	----	----	----	----	----	1.000	----
Helpfulness	6A	----	----	----	----	.8496	.3925	----	----
	6P	----	.3912	----	----	.4897	.7272	----	----
	7S	----	----	----	----	----	.3863	.8208	----
	7G	----	----	----	.3836	----	----	.7686	----
Understand.	6A	----	----	----	----	.8393	----	----	----
	6P	----	----	----	----	.4294	.6678	----	----
	7S	----	----	----	----	----	.7396	----	----
	7G	----	----	----	----	----	----	.7624	----

	Strictness		Strictness	
6A	1.000	.6278	.4007	-----
6P	.6278	1.000	.5016	-----
7S	.4007	.5016	1.000	.4327
7G	-----	-----	.4327	1.000

6A 6P 7S 7G