

Students at-risk: a bioecological investigation

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Contribution of others

Financial Support

I was able to embark upon my studies by being granted a James Cook University Faculty of Arts Education and Social Sciences scholarship. In addition, I received a Queensland Government Smart State Grant in 2004 to assist with the costs of attending a structural equation modelling course in Melbourne, attend an Australian Association Research in Education (AARE) conference in Sydney in 2005 where I presented a refereed paper based on the results from this thesis, and to help with data entry and transcription costs of the case studies' interview data.

In 2004, I was also awarded an Internal Research Grant by James Cook University to attend the Australian Council for Educational Research "Supporting student well-being" conference in Adelaide where I had a poster presentation.

Finally, I used the stipend support from the School of Education to attend two further statistics courses in Brisbane in June 2006, one on applied structural equation modelling and the other on latent trait theory/Rasch analysis.

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Abstract

This comparison study examines how socio-economic, parental and school perceptions relate to the motivation, coping strategies and academic achievement of students at risk of dropping out of school. The aim of the study was to compare and contrast students at-risk with typical and resilient students to derive a profile of an academically resilient student.

Bronfenbrenner's theory of development underpinned the study. It postulates that: a) human development and socialisation is context-dependent; b) parenting and school influences have an impact upon adolescent outcomes; c) socioeconomic factors and school environments affect development via socialising and psychological processes; d) parenting processes, which predict both academic achievement and psychological adjustment are moderated by socio-economic and family structure variables; and e) congruence perceived in two contexts strengthens adolescent outcomes.

The sample comprised 1127 students from Years 8 to 10 attending three North Queensland urban state high schools. The control and at-risk groups were selected according to their English and mathematics grades; the resilient group was extracted from typically achieving students based on their parents' employment and educational level. Since 10 per cent of the students identified themselves as Indigenous analyses were also conducted to compare Indigenous with non-Indigenous students.

A mixed methods approach was taken. A survey instrument was analysed first followed, some months later, by interviews with students selected from the three groups to triangulate and augment results.

Comparisons of the three groups of students yielded significant differences. Students at-risk reported significantly higher levels of neglectful parenting, higher suspension levels, and blended or single-parent family structures where both parents had an education limited to high school level and at least one parent was unemployed. Moreover, being Indigenous was significantly linked to being at-risk. Indigenous students were as likely to be at-risk in Year 8 as in Year 9, with the proportion

of at-risk students doubling in Year 10. By contrast, non-Indigenous students were statistically more likely to be at-risk in Year 10.

Students at-risk had the lowest levels of self-efficacy, mastery goals and positive coping strategies, and highest levels of projective coping and self-handicapping. Their school ratings, based on their appraisal of teacher relationships, curriculum and feeling happy about being at school were also the lowest. An important finding, however, was that all of these variables were significantly raised to the levels of typical students in those students at-risk whose parenting was authoritative, as indicated by high levels of warmth and involvement and supervision. This showed the importance of parenting in predicting motivations, coping and school perceptions.

By contrast, resilient students, whose socio-demographic characteristics were the same as those of students at-risk, reported parenting characterised by high levels of monitoring, comparable to typical students, though the warmth and involvement dimension of their parenting was low. They also reported a high proportion of neglectful parenting. Resilient students' levels of self-efficacy, mastery goals and positive coping were as high as typical students', while their levels of self-handicapping and projective coping were low. Unlike students at-risk, their ratings of teacher relationships and the curriculum were high. Once again, in contexts characterised by high parenting ratings, higher mean scores for school perceptions, self-efficacy, mastery and positive coping and lower projective coping and self-handicapping scores were reported.

For Indigenous students, a high suspension level, paternal unemployment, a blended or single parent family and non-graduate maternal education significantly predicted at-risk status. When contrasted to non-Indigenous students, Indigenous students had significantly higher levels of neglectful parenting than non-Indigenous students, possibly due to the higher proportion of blended families within the group. Indigenous students reported significantly higher self-handicapping, lower self-efficacy and lower positive coping strategies. An unexpected finding was that there were no differences between Indigenous and non-Indigenous students' in their views of school.

Structural equation modelling showed that school views were highly positively correlated to parenting reports in typical students, but this was not the case for either resilient or students at-risk.

The qualitative phase of the research, the six case studies, augmented and illustrated the statistical results and brought forth additional issues pertinent to the at-risk trajectory.

In conclusion, parenting can act as a valuable protective factor facilitating students' academic outcomes. At the same time, school processes can help foster resilience in students placed at-risk through structural and SES factors. This might be accomplished by encouraging a mastery goal orientation and positive coping strategies, which in turn are positively related to academic self-efficacy and low levels of suspension. Teacher relationships in particular are potential protective factors for students at-risk.

Table of Contents

Statement of access.....	2
Statement of sources.....	3
Contribution of others.....	4
Acknowledgements.....	5
Abstract.....	6
List of Tables.....	14
List of Figures.....	16
<i>Students at-risk: a bioecological investigation</i>	17
Chapter One: The Research Focus.....	17
Introduction.....	17
1.1 <i>Definition of the problem examined in this thesis</i>	19
1.1.2 Contextual issues impacting upon the problem.....	20
1.1.3 Extent of the problem.....	21
1.1.4 Sequelae of the problem.....	22
1.2 <i>Importance and purpose of the study</i>	23
1.2.1 Importance of the study.....	23
1.2.2 The purpose of the study.....	25
1.3 <i>Theoretical perspectives to the study of the problem</i>	26
1.3.1 Typologies of students who drop out before Year 12.....	26
1.3.2 Differences between indicators and risk factors.....	28
1.3.3 Theoretical approaches to the study of the at-risk trajectory.....	29
1.4 <i>Previous findings</i>	34
1.4.1 Socioeconomic, family and school factors influencing the at-risk trajectory.....	35
1.4.2 Empirical evidence supporting the view that external variables exert their effects through psychological constructs.....	37
1.4.3 Psychocognitive and behavioural student attributes linked with higher academic achievement....	40
1.5 <i>Issues as yet to be clarified: important questions that need to be addressed</i>	44
1.6 <i>Underlying principles governing current research</i>	46
1.6.1 Study design and constructs employed.....	46
1.6.2 A mixed methods approach.....	47
1.7 <i>Methodological considerations</i>	48
1.7.1 Sampling matters.....	48
1.7.2 Student identification.....	48
1.7.3 Instrumentation.....	48
1.7.4 Research questions.....	49

1.7.5 Rationale: Appropriateness of methodology chosen	49
1.7.6 Delimitations and scope of the research	50
1.8 <i>Outline of the remainder of the thesis</i>	51
Chapter Two: Review of the Literature	52
Introduction.....	52
2.1 <i>Factors connected with a higher risk of dropping out of school</i>	53
2.1.1 Socio-demographic characteristics of students at-risk	53
2.1.2 Behaviour patterns of students at-risk	56
2.2 <i>Factors linked with enhanced academic success</i>	59
2.2.1 Psycho-cognitive factors related to educational achievement	59
2.2.1.1 Motivational correlates to academic achievement.....	61
2.2.1.2 Coping strategies, optimism and academic achievement.....	66
2.3 <i>Bronfenbrenner's bioecological theory of development</i>	69
2.3.1 Parenting influences on adolescent outcomes	72
2.3.1.1 Parenting style – a possible mechanism whereby parenting influences adolescent outcomes	77
2.3.2 School influences on achievement	81
2.3.2.1 The role of teachers	83
2.3.3 Studies employing a mesosystem rationale - the joint effects of parenting and school perceptions	87
2.4 <i>Resilient children: the evidence</i>	90
2.5 <i>Summary and Research Questions</i>	97
Chapter Three: Methodology.....	100
Introduction, research questions and design	100
3.1 <i>Chapter purpose and overview</i>	101
3.2 <i>Rationale determining the research methods</i>	102
3.2.1 Why interview? The need for a constructivist approach to elaborate the surveyed perceptions of students.....	103
3.2.2 Bronfenbrenner's theory.....	106
3.3 <i>Epistemological position – the need for pragmatism</i>	107
3.4 <i>Mixed method characteristics</i>	112
3.5 <i>Design and sequencing of research</i>	116
3.5.1 Quantitative sequence.....	117
3.5.1.1 Quantitative sampling strategies.....	117
3.5.1.2 Participants and procedure.....	117
3.5.1.3 Instrumentation.....	117
3.5.1.4 Quantitative data analysis.....	120
3.5.2 Qualitative sequence.....	122
3.5.2.1 Issues of validity.....	122
3.5.2.2 Selection of participants	124
3.5.2.3 Interview strategies and questions	125
3.5.2.4 Analysis of case study transcripts.....	129
3.5.2.5 Implications of the interview as a source of narratives.....	130
3.6 <i>Ethical considerations</i>	133
3.7 <i>Conclusion</i>	134

Chapter Four: Quantitative analyses and results	135
<i>Introduction</i>	135
<i>Preliminary analyses of the measuring instruments employed in the study</i>	135
4.1 <i>Demographic characteristics</i>	139
4.2 <i>Parenting style associations</i>	142
4.2.1 Dimensions of parenting	145
4.2.2 Associations between parenting style and parental education.....	147
4.2.3 Associations of parenting style with suspensions.....	148
4.2.4 Association of parenting style with achievement	149
4.2.5 Associations between parenting style and optimism	152
4.2.6 Associations between parenting style and motivational goals.....	153
4.2.7 Associations between parenting style and coping strategies	156
4.2.8 Associations between parenting style and quality of school life perceptions.....	159
4.3 <i>Ethnicity associations</i>	161
4.3.1 Associations between ethnicity, achievement and suspensions.....	161
4.3.2 Within-group associations for parenting dimensions	162
4.3.3 Associations between ethnicity and optimism.....	162
4.3.4 Associations between ethnicity and motivational goals	163
4.3.5 Associations between ethnicity and coping strategies.....	164
4.3.6 Associations between ethnicity and perceptions of school life	165
4.4 <i>Summary of comparisons and student profiles</i>	166
4.4.1 Resilient student profile (N=97).....	169
4.4.2 Student at-risk profile (N=218)	171
4.4.3 Indigenous student profile (N = 103)	172
4.5 <i>Structural Equation (SEM) models unifying results</i>	173
4.6 <i>Summary and discussion</i>	192
4.6.1 Research questions - quantitative sequence.....	193
Chapter Five: Qualitative Analysis	202
Chapter overview	202
<i>Participant selection, rationale for thematic foci and methodological considerations</i>	202
<i>Participant selection</i>	202
<i>Rationale for choice of particular thematic foci</i>	204
<i>Methodological considerations</i>	205
5.1 <i>Summaries of student survey means: school perceptions, parenting perceptions, motivational, coping and expectancy orientation constructs</i>	207
5.2 <i>Typical students</i>	208
5.2.1 Chris	208
Global Impression	208
School focus	209
Parenting focus	209
Self-presentation.....	210
Future orientation	212
Mesosystem connections	212
Exosystem connections	213
Summary	213

5.2.2 Alex.....	214
Global Impression	214
School Focus	215
Parenting focus	216
Self-presentation.....	217
Structures/procedures/order	218
Future orientation	218
Mesosystem connections	219
Exosystem connections	219
Summary	219
5.3 <i>Resilient students</i>	220
5.3.1 Kim.....	220
Global impression.....	220
School focus	221
Parenting focus	223
Self-presentation.....	225
Future orientation	226
Mesosystem connections	226
Exosystem connections	226
Summary	227
5.3.2 Tess	228
Global impression.....	228
School focus	229
Parenting focus	230
Self presentation.....	231
Future orientation	231
Mesosystem connections	232
Exosystem connections	232
Summary	233
5.4 <i>Students at-risk</i>	233
5.4.1 Nathan	233
Global Impression	233
School focus	234
Parenting focus	236
Self-presentation.....	237
Future orientation	239
Mesosystem connections	239
Exosystem connections	239
Summary	240
5.4.2 Adam.....	241
Global Impression	241
School focus	244
Parenting focus	246
Self-presentation.....	246
Future orientation	249
Mesosystem connections	249
Exosystem connections	250
Summary	250
5.5 <i>Discussion</i>	251
5.5.1 Do these interviews support Bronfenbrenner’s theory?	251
Chapter Six: Summary, Implications and Recommendations.....	258
6.1 <i>Overview</i>	258

6.2 <i>Discussion and main findings</i>	259
6.2.1 Discussion	259
6.2.2 Main findings	262
6.3 <i>Implications and recommendations for practice</i>	266
6.4 <i>Limitations</i>	270
6.5 <i>Directions for future research</i>	273
6.6 <i>Summary</i>	274
Appendix A Teacher instructions for administering questionnaire.....	276
Appendix 1 Informed consent and principals’ letter to parents	277
Appendix 2 Questionnaire	279
References.....	285

List of Tables

Table 1.1 Employment Growth by Skill Level Category May 1989 to May 2000	24
Table 1.2 Typology of Early School Leaving	27
Table 2.1 Teachers Reported Locations of Behaviour Problems	57
Table 2.2 Teachers Reported Locations of Emotional Problems	58
Table 2.3 Comparison of children cared for by one or two parents	69
Table 2.4 Cited barriers to staying on at school.....	83
Table 4 (a) CFA results for PALS One factor congeneric models (n=1050).....	136
Table 4 (b) CFA results for the ACI , LOT, QSL and parenting style measuring instruments (n=1050).....	137
Table 4 (c) Item factor loadings for each of the four ACI factors.....	138
Table 4 (d) Item factor loadings for each of the two LOT factors	138
Table 4 (e) Item factor loadings for each of the three parenting style factors.....	138
Table 4.1 Student background characteristics (N=1050).....	139
Table 4.1.1 Non-Indigenous student characteristics (N=947).....	140
Table 4.1.2 Indigenous student characteristics (N=103).....	141
Table 4.2 Demographics of students reporting a pure parenting style (N=379)	144
Table 4.3 Percentage of students reporting a pure parenting style by student group (N=379)	145
Table 4.2.1 Means, standard deviations (S.D.) of the two dimensions of parenting in the three groups of student	146
Table 4.2.2 Frequencies of parenting style in the sample	147
Table 4.2.3 Chi squared (χ^2) independence test between parenting style and paternal education (N=379).....	147
Table 4.2.4 Chi squared (χ^2) independence test between parenting style and suspensions (N=379).....	149
Table 4.2.5 Chi squared (χ^2) independence test between parenting style and being at-risk, typical or a resilient student (N=379)	149
Table 4.2.6 Chi squared (χ^2) independence test between parenting style and being a typical, resilient or student at-risk (N=1050)	150
Table 4.2.7 Student achievement means, S.D. and sample size (N) by parenting style (N=1050).....	151
Table 4.2.8 Optimism means, standard deviations (S.D.) and sample size (N) for the three groups of students	152
Table 4.2.9 Means and standard deviations (S.D.) for motivational goals in the three groups of students	154
Table 4.2.11 Means and standard deviations (S.D.) for motivational and coping strategies employed by the three groups of students.....	157
Table 4.2.12 Perception of school life means, S.D. and sample size (N) for three groups of students.....	159

Table 4.3.1 Associations between ethnicity and suspension level.....	162
Table 4.3.2 Parenting dimension means and standard deviations (S.D.) for three groups of Indigenous students	162
Table 4.3.3 Mean, SD and sample size of optimism levels in Indigenous and non-Indigenous students	163
Table 4.3.4 Optimism, mean, S.D. and sample size for three groups of Indigenous students	163
Table 4.3.5 Means, SD and sample size (N) of motivational goals of Indigenous and non-Indigenous students	164
Table 4.3.6 Means, SD and sample size (N) of motivational goals of three groups of Indigenous students ..	164
Table 4.3.7 Means, standard deviation (S.D.) and sample size (N) of coping strategies in Indigenous and non- Indigenous students.....	165
Table 4.3.8 Means, S.D. and sample size (N) of perceptions of school life in Indigenous and non-Indigenous students.....	165
Table 4.4 Stepwise regression analyses for achievement for the different groups of students	168
Table 4.4.1 Resilient students' demographics.....	169
Table 4.4.2 Students' at-risk demographics.....	171
Table 4.4.3 Indigenous students' demographics	172
Table 4.5.1 Pearson correlations between predictor variables and achievement (N = 1050).....	180
Table 4.5.2 Model fit statistics summary.....	182
Table 4.5.3 Correlations between exogenous variables	183
Table 4.5.4 Model B constrained comparisons.....	186
Table 5 Individual student and group means for all constructs employed.....	207

List of Figures

Figure 1.1 Conceptual scheme of Bronfenbrenner’s systems and their interactions.....	32
Figure 2.1 Research models conceptualized by Bronfenbrenner (1986)	71
Figure 2.2 Pathways to resilience	92
Figure 4.2 Means of strictness and warmth for the three groups of student	146
Figure 4.2.1 Parenting style and parental education	148
Figure 4.2.2 Achievement mean by each student group and parenting	152
Figure 4.2.3 Optimism mean by parenting style by student group	153
Figure 4.2.4 Self efficacy of student groups within each parenting style	155
Figure 4.2.5 Self-handicapping of student groups within each parenting style	156
Figure 4.2.6 Mastery goals of student groups within each parenting style	156
Figure 4.2.7 Positive coping strategies of the three student groups by parenting style.....	158
Figure 4.2.8 Projective coping by parenting style.....	158
Figure 4.2.9 Perceived teacher relationships by parenting style	160
Figure 4.2.10 Perceived school opportunity by parenting style.....	160
Figure 4.2.11 Positive school affect by parenting style	161
Figure 4.4.1 Optimism and school life perceptions by student group.....	166
Figure 4.4.2 Parenting dimensions by student group.....	167
Figure 4.4.3 Motivations by student group.....	167
Figure 4.4.4 Coping strategies by student group.....	168
Figure 4.5.1 Model A (N = 1050).....	180
Figure 4.5.2 Model A (a) (N = 1050).....	181
Figure 4.5.3 Model A (b).....	182
Figure 4.5.4 Model B: All students (N =1050).....	184
Figure 4.5.5 Model B: Students at-risk (N =218)	184
Figure 4.5.6 Model B: Resilient students (N = 97).....	185
Figure 4.5.7 Model C (N =1050).....	187
Figure 4.5.8 Model C(a) (N =1050).....	188
Figure 4.5.9 Model D (N=1050).....	188
Figure 4.5.10 Model E (N = 1050)	189
Figure 4.5.11 Model F (N=1050).....	190

Students at-risk: a bioecological investigation

Chapter One: The Research Focus

“An action is an act considered in the perspective in which it has meaning for the actor; the biophysical process here has psychological and social dimensions.” (Kaplan, 1964, p.139)

Introduction

The title of this study encapsulates what it is about and its research focus. The bioecological theory developed by Uri Bronfenbrenner in the 70s is used to examine the issues surrounding those students who are predicted to drop out of school or, who are at-risk of dropping out of school. The choice of the bioecological theory as a theoretical lens for this study stems from the complexity of the factors bearing upon student outcomes. These factors are sociological as well as psychological and the bioecological theory provides a theoretical framework for understanding and explaining their combined effects. In keeping with the integrity of the theory, which places an emphasis on contextual influences bearing upon student outcomes, the research is conducted employing mixed methods, a quantitative phase being followed by a qualitative one.

This thesis centres on important matters related to students at-risk. Students at-risk are those students predicted to leave school with inadequate qualifications and as a result commence their adult life with more difficulties than they might otherwise face.

Patterns of dropping out of school have been much studied but as Jimerson, Egeland, Sroufe and Carlson (2000) state:

Five decades of research have uncovered numerous correlates of withdrawal from high school. Prior research highlights various demographic status variables, individual characteristics, psychological and behavioural measures, and family factors associated with high school drop out. They are now well known but not always useful. (p.526)

There are many ways of approaching a research project about students at-risk. Studies have been framed by a school perspective, a family perspective and a sociological perspective. All of these views have had an impact upon our understanding of the issues surrounding the problems of students at-risk. As a teacher with an interest in psychology, one particular theoretical perspective

appealed to me, Bronfenbrenner's bioecological theory. This theory, with its emphasis on context, takes into account the complexities of human behaviour and the impact various social contexts have upon it.

Chapter One examines the issues identified to be connected to an at-risk trajectory, detailing possible ramifications of inadequate qualifications for the individual adolescent, as well as society at large if appropriate solutions are not sought and implemented. As these are complex so are their purported antecedents. Our current knowledge reflects some important understandings but poses further questions about unresolved issues.

One of these unresolved issues is the occurrence of resilient students. The factors that predict certain students will be at-risk are often overcome by a small proportion of students. These resilient students share the structural and socio-economic characteristics of students at-risk but, through some as yet unclarified processes or psychological strengths, manage to defy the odds and succeed in their academic pursuits. They demonstrate that socio-economic disadvantage can be transcended. Nonetheless, why or how this happens remains a topic for debate, a puzzling issue. Resilient students invite further study, so that their strengths may be understood and translated to useful interventions for those who are not resilient but are rendered at-risk.

The chapter examines the extent of the problem and the various approaches used in its elucidation. The discussion moves to a description of Bronfenbrenner's bioecological theoretical lens and support is offered for its utility in studying students at-risk. Questions stemming from previous research findings or gaps in the literature are then considered.

Gaps in the literature lead to particular research questions, which in turn drive the rationale behind the use of the bioecological theory to construct the research approach. The section culminates in the study's main aims, questions and research design.

Pragmatic considerations lead to the idea that the research design most applicable to the research aims and bioecological theory involves mixed quantitative and qualitative methods. The purpose of both methodologies is to decipher differences between students who are resilient and those who are at-risk. The initial quantitative phase of the design is summarised followed by an account of the qualitative phase. The chapter ends with an outline of the structure of the rest of the thesis.

Before delving into the details of this research I would like to emphasise that the purpose of the study is a desire to better understand some of the psychological strategies and constructs that link sociological factors to behavioural and achievement outcomes in adolescents.

1.1 Definition of the problem examined in this thesis

The problem concerning this thesis is the presence of a large number of students in the secondary school population labelled at-risk. In Australia, the term at-risk has been used to “describe or identify young people who beset by particular difficulties and disadvantages, are thought likely to fail to achieve the development in their adolescent years that would provide a sound basis for a satisfying and fulfilling adult life” (Batten & Russell, 1995a, p.1). In educational literature the term at-risk is used in a predictive sense meaning at risk of dropping out of school at the earliest opportunity (Batten & Russell, 1995a). What this means is that this group of students are at risk of dropping out of school or leaving before the completion of Year 12 (Lamb, Dwyer & Wyn, 2000).

The most consistent predictor for dropping out of school has been shown to be poor academic achievement (for example, Battin-Pearson, Newcomb, Abbott, Hill, Catalano & Hawkins, 2000; Bradley, 1992). Longitudinal data obtained by Kaplan, Peck and Kaplan (1997), demonstrated that poor academic performance in the 7th, 8th and 9th Years significantly predicted drop-out behaviour five years later in America. Reporting on student dropouts in Australia, McMillan and Marks (2003), concluded that “not only are low achievers more likely to leave school early, they are among the first to do so” (p.86).

They add:

Just under 20 per cent of students whose performance on Year 9 literacy and numeracy tests was very low (more than 1 standard deviation below the mean) left school before Year 11, compared with only 2 per cent of students whose performance was very high (more than 1 standard deviation above the mean). Of the students who commenced Year 11, 24 per cent of students in the lowest literacy and numeracy achievement group left before the completion of Year 12, compared with only 6 per cent of the highest literacy and numeracy achievement group (McMillan and Marks, 2003, p.31).

In sum, low achieving students are conceived as at-risk students because they are predicted to drop out of school. In particular, low achievement in mathematics and English has been repeatedly cited as predicting dropping out of school (for e.g., Cappella & Weinstein, 2001; Catterall, 1998; Marks & Ainley, 1997; Marks, Fleming, Long & McMillan, 2000; Rothman & McMillan, 2003). These early predictors have been found to be so strong (McMillan & Marks, 2003), that there is a move in

Australia to implement early detection programs to support students who are predicted to drop out due to low achievement in mathematics and English: “Western Australia has implemented a Students at Educational Risk program, in which teachers develop profiles of students’ achievements and use these in relation to typical expectations to identify students who need additional support” (Doig, 2001, p.25).

Therefore a definition of students at-risk for the purpose of this study is one articulated by Mortimore and Mortimore (1999). They defined students at-risk as those who: “are at serious risk of failing in school and, as a result, will not possess sufficient skills or qualifications to become integrated in accepted patterns of family, social and working life” (p.3). Hence, the central concern of this study is understanding student failure. Specifically, student failure as defined by academic underachievement in the compulsory phase of secondary schooling.

1.1.2 Contextual issues impacting upon the problem

The compulsory phase of schooling in Australia, enshrined in the *Youth Participation and Training Act of 2003*, determines that from 2006 an adolescent must complete Year 10 at secondary school or remain in school until the age of 16. Beyond this there is a stipulation that an additional compulsory participation phase is completed whereby a young person is required to further their education until they turn 17 unless they are involved in paid work for a minimum of 25 hours per week (Hill, Dawes, Boon & Hillman, 2005).

In most developed countries the legal school leaving age is being systematically raised (Nicaise et al., 1999). The reason for this appears to be linked to the country’s economy (Tomlinson, 1997). Batten and Russell (1995a) state that the drive to retain students at school for longer in Australia is due to “A rise in the general unemployment rate and the collapse of the youth labour market making employment for the early school leaver impossible to find” (Batten & Russell, 1995a, p.8). During the 1980s and 1990s there was a decline in teenage full-time employment in Australia, accompanying structural changes in the economy. Between the mid-1980s and late 1996 the number of 15-19 year olds in full-time work fell from 32 per cent to 17 per cent. Over the same period there was a marked increase in part-time employment. In 1966 part-time work accounted for less than 7 per cent of teenage employment. By 1981 it had risen to one quarter, and in the mid-1990s had reached over half. Students who had not completed Year 12 successfully were particularly affected because it was in areas to which they traditionally gained entry that full-time opportunities declined

(Lamb, Dwyer & Wyn, 2000). Trends have continued to follow this pattern in Queensland with 0.9 per cent of those in the 15-19 age group employed full-time in 2005-2006, 7.2 per cent looking for work and 41.7 per cent being in part-time employment (Commissioner for children and young people and child guardian, 2006).

The picture is similar overseas. In the United Kingdom, Tomlinson (1997) states that:

From a sociological perspective there is not so much an educational as an economic crisis. Schools in industrial societies always produced underachieving students, but from the 1970s the collapse of the unskilled labour market brought into sharp focus the absence of a link between school and employment for an increasing number of students. (p.85)

Worldwide schools are encouraged to actively pursue students who are at risk of not completing their education. In Australia, this comes from the stated aims and policies of the Commonwealth Government and the state/territory governments. For example, the Queensland Government outlines its educational aims and vision in a paper entitled “Education and Training, Reforms for the Future, A White Paper” (2002). In line with other states, its reforms prioritise an “Increased participation, retention and attainment of young people aged 15-17 years in schools and TAFEs” (p.10), because: “Today 10,000 Queenslanders aged 15-17 years are not in school, not in work and not in training. This is simply not good enough and we have to try harder” (p. 2).

While there is a drive to retain students at school for longer scientific evaluations of extending compulsory schooling indicate mixed results. Students at-risk seem not to benefit from their extended stay at school and to benefit less from their qualifications than other groups because other groups maintain their advantage by studying for longer (Nicaise et al., 1999). That is, their school experience is not necessarily as productive as might be hoped for by policy makers, economists, educators or parents. There seems to be a very urgent need to ensure that an extended period of compulsory schooling is coupled with strategies to increase the academic benefits and well-being of students at-risk (Commissioner for Children and Young People, 2004).

1.1.3 Extent of the problem

One way of estimating the number of students who are at-risk is by looking at apparent retention rates. These rates report the total number of students who stay on at school from Year 8 through to the beginning of Year 12. Students at-risk or those who did not commence Year 12 are then estimated from these figures. Rothman (2004) summarized Australian retention trends:

In 1967, the apparent retention rate in Australian schools was 22.7 per cent. Over the next eight years, this rate grew to 34.1 per cent, then remained close to that point until 1982, when it began to increase again. Over the following ten years, the rate more than doubled, growing from 36.3 per cent in 1982 to 77.1 per cent in 1992. The rate peaked in 1992, and has remained above 72 per cent into the 2000s. In 2002, the Year 7-12 apparent retention rate was 75.1 per cent. (p.113)

More recently, average apparent retention rates were 75.7 per cent in 2004, but only 39.5 per cent for Indigenous students (AusStats, 2004) showing clear differences in participation rates between student groups. The latest figures (ABS, 2006) are 75.3 percent and 39.5 percent respectively. When examined by gender retention rates dropped among males from 72.5 per cent in 1992 to 69.9 per cent in 2005, and among females, from 82.0 per cent in 1992 to 81.0 per cent in 2002. These figures represent 30.1 percent male and 19.0 per cent female students not completing Year 12 in Australia (ABS, 2006). Thus approximately a third of all male and a fifth of all female students are potentially at-risk in this country.

By comparison, in 1994 in the United States 20 per cent of females and 22 percent of males did not complete their secondary education. The equivalent rates in Australia are 27 percent males and 18 percent females for the year 1994 (Lamb & Rumberger, 1999). Whilst comparable figures for the United Kingdom are not available, in 1999 it was reported that 7 percent of all 16 year olds and 8 per cent of all 17 year olds were not in education, training or employment (Morris, Nelson, Stoney & Benefield 1999). The figures therefore would suggest that the problem of students at risk of non-completing Year 12 is significant overseas as well as in Australia. The problem seems to be particularly acute in Australia however, because even at a time when Vocational Education and Training (VET) has established many vocational courses in an attempt to keep a greater proportion of less academic students at school, Australian apparent retention rates continue to be significantly lower than those overseas (Commissioner for Children and Young People, 2004).

1.1.4 Sequelae of the problem

Students at-risk, that is, students who do not complete their secondary education, or drop out of school, have lower levels of employment and higher levels of unemployment in Australia (ABS, 2001a). Studies suggest that they have more difficulty finding stable employment in the initial post-school year and also in the first four years after leaving school. Another issue is that they are more

likely than those who have completed Year 12 successfully to experience unemployment for extended periods, particularly if they had attended government schools, lived in urban rather than rural areas and were from non-English-speaking backgrounds (Lamb, Dwyer & Wyn, 2000).

In addition, unemployment in adolescents is linked to a high rate of crime. In Australia, the offending rate of persons aged 15 to 19 years for 2000-2002 was more than five times the offending rate for the remainder of the population (Brewster & Cook, 2002). With respect to delinquency, agreement among researchers is so strong that it is claimed that poor academic performance predicts delinquency independently of socio-economic (SES) variables (McEvoy & Welker, 2000).

Whilst some might argue that subjective well being is not necessarily connected with employment and that the quality of life enjoyed by those who drop out of school is a subjective experience, there are also societal ramifications of increased rates of unemployment. In the United States, where the corpus of literature on the subject is immense, the impact of non-completion or dropping out of school upon society has been divided into seven social consequences. These are: foregone national income, foregone tax revenues for the support of government services, increased demands for social services, increased crime, reduced political participation, reduced intergenerational social mobility and poorer levels of health (Rumberger, 1987). Rumberger includes only one personal disadvantage in his list, the issue of ill health. The psychological ill effects of poor socioeconomic prospects that may lead to alcohol and drug abuse are another area of concern (McWhirter, McWhirter, McWhirter & McWhirter, 2004). The United Kingdom and the European Union similarly recognize the problems resulting from non-completion of secondary education (for example, Blythe & Milner, 1999; Nicaise et al., 1999).

1.2 Importance and purpose of the study

1.2.1 Importance of the study

Not only do individual adolescents risk strained financial and social consequences as a result of failing in school (Whitfield, 1998), there is a cost to society as a whole. There is an urgent need for research to be conducted in order to improve the retention and academic achievement of students who are at risk of failure since the future economy of a country is based upon the youth of today being gainfully employed and experiencing an appropriate level of well-being. Several perspectives are possible here as human activity impacts upon many domains; the three examples below are chosen because they impact directly upon the economy.

One, future retirees are dependent upon the current youth. It has been estimated, for example, that in the United States, pensions of retirees were paid by 17 employed workers in 1995; projections suggest that people who retire within the next 20 years will draw their pension from the wages of only 3 workers (McWhirter et al., 2004).

Two, the level of expertise required for employment is rising. Wooden (2000) reports that: “skills are far more important for labour market achievements today than in the past” (p.196). Indeed, the only skill level category where demand for employees has had an appreciable increase is the managerial/professional (Table 1.1). The semi-skilled or unskilled sectors have either decreased or remained the same, emphasizing the need for more rather than less academic qualifications for successful employment in Australia.

Table 1.1 Employment Growth by Skill Level Category May 1989 to May 2000

<i>Skill level category</i>	<i>Employment growth (%)</i>	<i>Employment share (%)</i>		<i>Change in share</i>
		<i>May 1989</i>	<i>May 2000</i>	
I Managers / Professionals	28.8	22.9	25.3	+2.4
II Associate professionals	25.2	10.5	11.2	+0.7
III Skilled vocations	0.4	20.5	17.7	-2.8
IV Intermediate skills	14.6	26.9	26.4	-0.5
V Elementary skills	17.8	19.2	19.4	+0.2
TOTAL	16.7	100.0	100.0	0.0

Sources: ABS, Labour Force, Australia (cat. no. 6203.0), May 1989 and May 2000 issues.

(Wooden, 2000, p.194)

Three, the wellbeing of young people is of concern and as a result their future prospects are in doubt. Fears expressed by the Commissioner of Children and Young People (Qld/NSW) (2004) suggest that outcomes for children and young people linked to academic failure are worsening in Australia (p.7). Indicators for this view derived from Stanley (2001) include:

- Youth drug use: The death rate from drug dependence in 1998 was almost five times the 1979 rate.
- The disparity in literacy levels has increased: the top 10% of Year 3 and 5 students are five years ahead of the bottom 10%.
- Juvenile involvement in offences against the person has increased.

It is clear that the issue of dropping out has widespread ramifications which need addressing. Not only are there individual negative outcomes from being at-risk, from an economic, psychological and social perspective, but also far reaching societal effects that may have long term consequences. The seriousness of the problem becomes more apparent when it seeps from the domain of academics and government departments to the newspapers.

Headlines in the Courier-Mail newspaper on November 17th 2003 (Odgers, 2003) stated that 30 students are permanently excluded from Queensland schools every school week. This approximates to 1200 exclusions per year. Exclusions are strong indicators of at-risk status (Batten & Russell, 1995a). Clearly, there is a pressing need for government agencies and educational bodies to take action to redress the problem. Before this can take place, the issues surrounding students at-risk need to be better understood. The purpose of this research is therefore to gain a clearer understanding of these issues.

1.2.2 The purpose of the study

The goal of this research is to come to a fuller understanding of attributes of students at-risk and resilient students in Australia, so that an identification schema and suitable interventions may be developed. This schema would be employed to put into place specific interventions tailored to student needs. For example, if it is found that maladaptive strategies, such as projective coping, are related to pessimism, it might be possible to construct specific interventions to enhance optimism in students. It is anticipated that interventions will be vital in the early secondary phase of schooling, when students have to cope with the transition from primary schools. Another critical period occurs around the time when students have to make career decisions prior to choosing their senior subjects upon entering the senior phase of schooling.

A second possible intervention area is envisaged in constructing support strategies for parents. One of the Queensland State Priorities is the provision of Vocational Education and Training (VET) to improve the social and economic outcomes of youth, as outlined in *Education and Training Reforms for the Future (ETRF) (2003)* and expressed through Issue 37: Effects of parent engagement in schooling and school governance in *Growing the Smart State: A PhD Research Funding Program Queensland Government agencies areas of policy research interest 2004-2005*. It is conceivable that parents, being instrumental to their offspring's well-being, would benefit from support strategies. These might range from simple strategies of creating different ways to

disseminate information, to more elaborate processes to enhance parental participation in decision making processes involving their children's school experience.

Thirdly, since Indigenous students comprise a relatively high proportion of those students who are considered to be at-risk, another area where intervention might take place is in improving the educational outcomes of Indigenous students. Once again as the Queensland State prioritizes the provision of Vocational Education and Training (VET) to improve the social and economic outcomes of Indigenous youth, as outlined in *Education and Training Reforms for the Future (ETRF) (2003)* and expressed through Issue 39: "Improving educational outcomes for Indigenous students". Many of the questions addressed by this study relate directly to the major concerns within Issue 39. Key questions that must be explored before interventions are conceived within this domain are:

1. What factors motivate Indigenous students to learn at school?
2. Do Indigenous students value achieving a Senior Certificate and why?

All types of interventions will be more readily applied by government departments and educational administrators, and accepted by parents, if there are empirical findings supporting the purported needs of students at-risk. The ultimate goal is to increase the quality of the school experience of students so that their academic outcomes are comparable to other students and their employment opportunities are enhanced.

1.3 Theoretical perspectives to the study of the problem

The identification of students at-risk has been considered a problem of concern for at least two decades. In designing studies to examine the reasons for this problem, researchers have adopted distinct alignments. These include approaches that consider specific antecedents to dropping out in order to subsequently frame particular designs for the study of the drop-out trajectory. Particular patterns of dropping out have been previously identified.

1.3.1 Typologies of students who drop out before Year 12

Identifying the predictors of non-completion of Year 12 is a crucial task for researchers because understanding the causes and processes of dropping out can help guide the creation of effective approaches to preventing this problem. In an effort to discover variables that cluster around particular types of drop-outs, McIntyre, Freeland, Melville and Schwenke (1999) identified five different types of student who do not complete Year 12 in Australia (Table 1.2).

This typology acknowledges the reasons for dropping out of school are many and varied, though at least two groups, Discouraged and Alienated, seem to leave early because of poor academic achievement. Australian studies support this notion, indicating that poor academic achievement is the most salient reason for dropping out of school (Bradley, 1992; Bradley & Stock, 1993; Bradley, 1994). More recently, McWhirter et al. (2004) in citing four types of dropouts in the United States, namely: Disengaged, Low-achiever, Quiet and Maladjusted (p.103), claim that of these four groups only the Disengaged appear to obtain high academic achievement scores.

The distinction between low ability and low academic achievement is an important one. Perhaps those students who drop out do so because they have intellectual or learning disabilities rather than dissatisfaction with school. Are students at-risk simply those of low ability?

Table 1.2 **Typology of Early School Leaving**

Types of Early School Leavers	Description
Positive	These students leave school with a career goal in mind and actively seek or take up employment in their chosen area
Opportune	Opportune leavers take an opportunity to leave school on finding a job or establishing a personal relationship
Would-be	Would-be leavers are not early school leavers in the strict sense, as they reluctantly stay in school because there are no other options open to them
Circumstantial	Circumstantial leavers are forced to leave school for largely non-educational reasons such as need for income
Discouraged	These early leavers leave school because they are not doing well at school and have little interest in being there
Alienated	Similar to discouraged leavers but often displaying behavioural problems or have been expelled or suspended

(McIntyre, Freeland, Melville & Schwenke 1999, p.47)

It may be tempting to surmise that low ability levels are responsible for low academic achievement since that would provide a simpler answer to the problem. However, this does not appear to be the case for all students identified to be at-risk. Research conducted in Australia in a school for students at-risk who had low academic achievement levels, defined by low literacy and numeracy, found that 57 percent of the students had average IQs and 30 percent had above average IQs (Candy & Baker, 1992). Likewise, a study conducted in the United Kingdom examining students in pupil

referral units who had been excluded from schools found that the students' motivational and coping strategies were causing difficulties not their ability levels (Solomon & Rogers, 2001). Finally, based on meta-analyses of research conducted upon IQ, American researchers propose that intellectual ability as measured by IQ accounts for only 25% of academic success (Sternberg, Grigorenko, & Bundy, 2001). It appears that the problem of students at-risk is more complex, with variables other than mere ability or IQ contributing to underachievement and student dropout behaviour. Indeed, risk factors for placing students at-risk are not the same as indicators of a student being at-risk.

1.3.2 Differences between indicators and risk factors

Knowing the different types of dropouts permits better identification by clustering variables that predict them. This enables strategic interventions to be applied which target specific behaviours and attitudes (McWhirter et al. 2004).

The factors influencing different groups to drop out of school have been classified by Batten and Russell (1995a) into risk factors and indicators, though sometimes it is not clear to which category a variable belongs. Poverty is considered to be a risk factor, leading to dropping out for economic reasons, as is Indigenous status through its correlation with higher rates of dropping out. Academic underachievement and antisocial behaviour leading to suspensions/expulsions, however, might be viewed as indicators or risk factors. McEvoy and Welker (2000) state:

...research generally suggests that an individual's antisocial conduct is at least partially an outcome of poor academic performance, and often it is. It is equally likely that, for many students, poor academic performance is an outcome of their disruptive behaviour. (p.131)

Confounding elucidation, indicators and/or risk factors do not operate independently. They can act sequentially, over time and in combination to bring about dropout behaviour (Batten & Russell, 1995a). Moreover, risk factors do not always have an influence in the same direction since it appears that how they are interpreted and internalised by the young person and their immediate family varies and can result in resilience. There is a serious gap in our understanding here especially in regard to the psychological processes that help promote resilience. The disentangling of risk factors and indicators has led to the development of particular theoretical models with which the problem of students at-risk may be more closely studied.

1.3.3 Theoretical approaches to the study of the at-risk trajectory

In Australia, researcher attempts to order the large array of impacting factors into a manageable organisational framework has resulted in the construction of three categories representing:

- Individual student psychosocial, behavioural and physical factors;
- Institutional factors associated with the two most influential institutions in a student's life: school and family; and
- Societal factors, providing the socioeconomic background for the student, the family and the school. (Batten and Russell, 1995a, p. 14)

In the United States a similar organisation of factors impacting upon students at-risk has been constructed, as follows:

- Student related-including economic, familial, socio-cultural, psychosocial, behavioural, and such physical attributes as age, gender and medical history.
- School related-including organization, ethos, pastoral care, curriculum, assessment policies and behaviour policies.
- Constructed-interactions between the aforementioned factors, culminating in a relationship between the student and school personnel.
- Macrosystemic-the social, political and historical contexts in which the school systems and student's family are placed.(LeCompte & Dworkin, 1991, p.56-57; Thomson, 2002)

When studying risk factors it becomes apparent that groupings are somewhat arbitrary. For example, constructed factors might equally well be placed under student related factors since they stem to a large extent from a student's reactions. Does it matter how risk factors are grouped? It appears that it does because the organisation of risk factors can be used in particular ways to construct research studies to investigate relationships between them and, perhaps more importantly, to support and propose interventions. Why then are risk factors grouped in such a way? Whitfield (1998) suggests that the above organisation stems from the perceptions and beliefs of the researchers in trying to explain the at-risk status of students.

Both in Australia and overseas the first two classes of risk factors, i.e., student centred and school centred, may be thought of as stemming from a deficit perspective. The deficit perspective, if student related, places the entire responsibility for school involvement and value of education upon the student's personal and family background variables. This can lead to the view that schools can do nothing to improve outcomes for students, a view that has been shown to be unfounded in the

light of much school effectiveness research in Australia (Batten & Russell, 1995a) and the United Kingdom (Cooper, Drummond, Hart, Lovey, & McLaughlin, 2000). Research has demonstrated that various school programs and organisational structures and policies can make a considerable difference to outcomes of students in general and students at-risk in particular. This is a very large body of research beyond the scope of this study. The essence of findings pertaining to school effectiveness research is that institutional processes and organisation have ramifications that can positively or negatively influence student outcomes, such that a student at-risk is likely to fare better in some schools than in others. Examples of school programs designed to improve student outcomes can be found in a book by Cooper et al. (2000).

The constructivist perspective places responsibility and accountability upon the schools, leading to a push to improve environmental school factors and teacher student relationships that might contribute to student failure and alienation. Influenced by Marxist and Neo-Marxist models, this perspective asserts that there are school factors which engender conflict because of their academic curriculum, competitive assessment and streaming practices. These produce social inequalities and perpetuate disadvantage for the children of the working classes. This perspective looks towards whole school reforms in its response to students at-risk. It views systemic and structural hierarchies as needing re-modelling to allow for individuality in cultural and social habits without discrimination. Support for these claims comes from the assertion that there is often a gap between the teachers', usually Anglo-Australian or Anglo-American or traditionally British, understanding of issues of a social and cultural orientation, and that of parents from different ethnic/cultural backgrounds (Angwin, Blackmore, & Shacklock, 2001). Paradoxically, the students most vulnerable to adverse classification in schools are those who are given the least opportunity to voice their concerns.

This perspective, an amalgam of school related and constructed factors, has much utility since it can lead to more cooperative approaches in tackling problems between institutions and students. Yet, it does not take into account studies showing that students who are absent from or who have left school early continue to have problems in the workplace and community (Blythe & Milner, 1999; McWhirter et al., 2004; Farrington, Loeber & van Kammen, 1990; Maguine & Loeber, 1996; Jessor, 1991, 1993). Or the findings of Teese (2001) who revealed in his detailed historical review of Australian curricular 'reform and counter reform': "even major changes in systems of subjects, thorough revision of content and varied assessment methodologies produce little discernible impact

on social patterns of (academic) results” (p.194). Similar conclusions were reached by researchers in the USA (Steinberg, 1997). Clearly there are within-student factors that affect their experience irrespective of institutional factors. But if schools can and do make a difference for some students, why is it that other students fail to benefit from their academic experience? This question has led to the development of the interactionist, bioecological perspective to the problem.

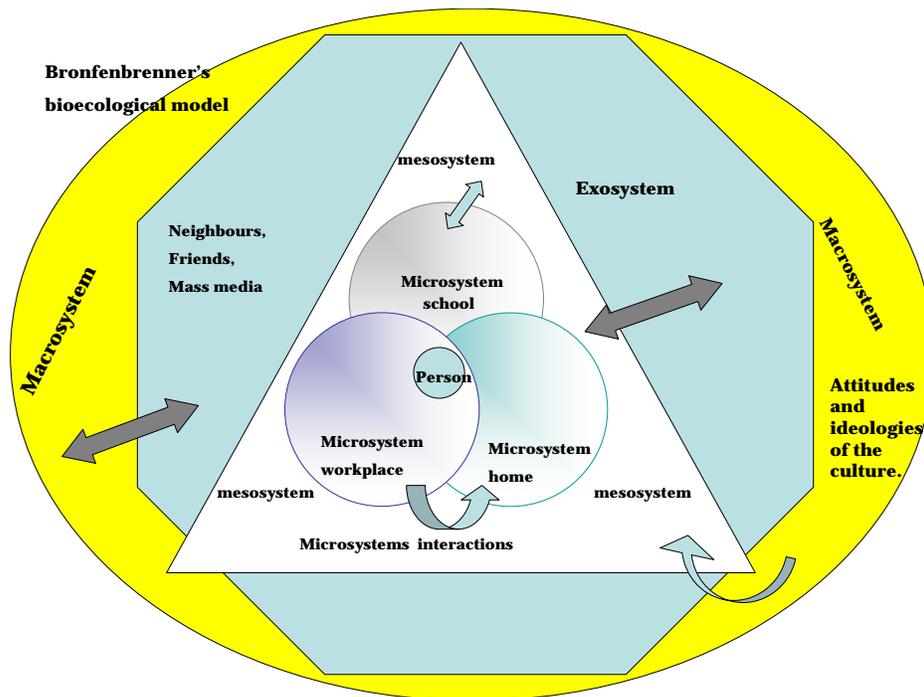
The interactionist, bioecological approach is based on the idea that “...human behaviour is a product of ongoing interaction between influences in the social environment and internal motivations which result from prior experience” (Cooper, Smith & Upton, 1994, p.88). An interactionist or bioecological perspective based on Uri Bronfenbrenner’s theory (1979) is one that recognizes that student centred, family centred, school centred and macrosystem factors contribute to render a student at-risk. As such, any explanations about students at-risk need to examine the interaction between these domains (Whitfield, 1998). Furthermore, it is possible that it is due to these interactions that students who are predicted to be at-risk are not. These students are resilient. Resilient students are those who, judged by personal, family and school attributes, should be at-risk but due to some as yet unknown mediating factors or mechanisms are not. This is an important matter since the utility of both the deficit and constructivist perspectives in predicting, or developing interventions for, students at-risk is brought into question.

In brief, the bioecological perspective takes a contextual approach to any explanation with regards to development and behaviour. As early as 1985, educational researchers advocated an approach that examined the interface of social, psychological and institutional factors when considering students at-risk and underachievement (Reid, 1986). More recent expositions based on the study of students at-risk also use this rationale (Howard, Dryden & Johnson, 1999; McWhirter et al., 2004).

Bronfenbrenner’s bioecological theory of human development posits that individual human development occurs as a result of interactions within and between multiple embedded ecological systems (Bronfenbrenner, 1979, 1989). These systems were named micro- meso- exo- and macro with the individual and all his/her attributes taking up a central role (Figure 1.1 below). In other words, the person or self comprises a set of unique, genetically determined attributes, which are nonetheless continually forged by experience. The degree and nature of this experience depends upon its location within the ecosystem and ranges from proximal influences (microsystem) to more distal ones (macrosystem). One may consider these influences to be psychological, in the case of

microsystem and mesosystem events, and sociological, in the case of exo and macrosystem conditions, though these distinctions could be debated. For example, a father made redundant by an unproductive company in a failing economic climate, an exosystem and macrosystem matter from the perspective of the developing child, may be distressed, take to alcohol and possibly become a neglectful parent. These behaviours, experienced as microsystem events by the child, might or might not have a psychological impact depending on various other factors such as family support, neighbourhood support, the temperament characteristics of the child and the temporal quality of the behaviours, i.e., their duration, and the point in the developmental period of the child that they took place in.

Figure 1.1 Conceptual scheme of Bronfenbrenner's systems and their interactions



Note: Diagram constructed by author to illustrate Bronfenbrenner's theories.

Ecosystems, therefore, are believed to exert a varying degree of influence upon an individual's behaviour and development. At the same time the individual, who according to this model is located in the centre, is an active participant of his/her development. Changes or actions within one ecosystem impact upon another. A strike action taken by a group of people, say medical practitioners, may result in health care policy amendments, an exosystem matter, and also acute

stress in the microsystem of a number of families whose health care arrangements are dependant upon free medicare.

The microsystem consists of the people with whom an individual comes into regular direct contact, for example, parents, siblings, teachers and peers. The mesosystem comprises the interrelationships between different components of the microsystem, for example the interactions between an individual's parents and peers or teachers. Bronfenbrenner postulated that development is enhanced if mesosystem interactions are positive, consistent and promoting similar outcomes (Bronfenbrenner, 1979; 1989). The exosystem represents the various societal and environmental settings which do not involve the individual directly but, nevertheless, impact upon a person's life. An example is Australia's current educational policy mandating compulsory attendance at school to the age of 15 years. This has effects upon students' employment as well as educational choices.

The macrosystem reflects the cultural beliefs and values of the society in which a person is living. Consider for example, political and/or philosophical beliefs that may prevail at a particular time and place. Adoption of certain philosophical and political beliefs may have extensive ramifications. This is currently observed in Australia as a result of legislation that relates to the education of students with learning disabilities (Foreman, 2005). Students who may have been educated in special education units in the past are now placed in regular classrooms. This affects the educational experience of not only those students with a disability but also that of other students as well as teachers, institution administrators and education department managers.

With regard to the types of drop-out in Australia, a deficit perspective might suggest that, for example, an alienated student dropped out because of personal attributes such as ineffective coping and family structure. Alternatively, it might be asserted by a researcher espousing the constructivist view that a clash with school related organizational policies such as curriculum offering, or assessment, resulted in the student dropping out. This might be taking place at a time when there is plentiful employment for unskilled labour, enabling the student to find employment relatively easily. Neither of these proposals, however, appears to take into account the bidirectional influences between student and the environment, and between the different environments that a student operates in, both explicit assumptions of the bioecological theory. Hypothetically, it is possible that this alienated student might have had little financial support from home to pursue school related activities. At the same time, school structures and policies may

impose certain restraints, such as uniform expectations and fees for particular curriculum requirements which in effect preclude the student's participation. There might be solutions to these financial constraints but if the parents do not avail themselves of these due to lack of information or poor home-school communication then the student might feel the only alternative is to drop out. In a different economic climate, with different welfare agencies acting for students in need, the same student might remain at school and attain positive outcomes. Examination of the issues related to this student from a single perspective is unlikely to reveal all the factors impacting upon the student's decision to drop out of school.

It is anticipated that by using the bioecological theory to examine issues surrounding students at-risk the identification of students likely to drop out will be improved because contextual factors are taken into account. The organisation of the review of prior research pertaining to students at-risk following in the next section is in keeping with this, the overarching theory governing the study.

1.4 Previous findings

Chapter Two is devoted to a detailed review of the literature so only the most important studies are introduced in Chapter One.

Until recently, most research tended to focus on single areas thought to influence student at-risk trajectories such as parenting or socio-demographic factors. Research into the issues relevant to students at-risk has rarely been designed around a bioecological framework that examines two or more contexts involving the developing person at the same time, however, those that have used this framework are described. Also, of particular note is that the methodology employed in the studies reviewed is either qualitative or quantitative but seldom both. This is an important omission when the over-arching framework of a study is Bronfenbrenner's biocological theory, as is the case in some of the cited research, because contextual effects are not adequately exposed when using only quantitative methods.

Findings presented here have been organised into two strands in keeping with a bioecological conceptual framework:

1. socioeconomic, family and school factors, or factors "external" to the student
2. psycho cognitive and behavioural attributes, or factors "within" the student

1.4.1 Socioeconomic, family and school factors influencing the at-risk trajectory

Batten and Russell (1995a) for example, reviewed the Australian literature and concluded that students who are at-risk typically have/are/cite:

- Low levels of literacy and numeracy achievement;
- More likely to be boys than girls;
- Parents whose education is limited to secondary education or less and who are employed in unskilled manual jobs;
- Indigenous Australians;
- Rural students;
- Attend government schools;
- English-speaking backgrounds;
- School related factors as their main reason for leaving.

Of the above, low levels of literacy and numeracy achievement appear to be the most important factors influencing dropping out of school. A later longitudinal Australian study (McMillan & Marks, 2003) updated Batten and Russell's (1995a) research, confirming that the patterns of early school leaving and the socio-demographic profiles of students at-risk have not altered. Closely related to this strand of research are studies exploring family factors impacting upon students at-risk.

Family factors relating to students at-risk have been studied extensively overseas (e.g., Rumberger, 2001). From the work carried out in various countries, there seems to be consensus that positive academic and adjustment outcomes are much more likely to result if effective parenting is experienced by the child/adolescent (Steinberg, 2001).

One of the most influential studies in parenting was conducted by Lamborn, Mounts, Steinberg, and Dornbusch in 1991, when they explored the parenting experienced by 4,100 adolescents in the United States. Lamborn et al. (1991) found that those adolescents who experienced one of the four different types of parenting style (authoritative, neglectful, permissive and authoritarian) as determined by a self-report questionnaire, showed significant differences in psychosocial development, school achievement, problem behaviour and internalised distress. Specifically, adolescents who perceived their parents to be authoritative, that is, warm and involved while monitoring and firm, scored highest on psychosocial competence and lowest on measures of

psychological and behavioural dysfunction. The reverse patterns were found for children whose parents were described as neglectful.

Much research international research has validated these parenting styles across different ethnic groups, socioeconomic status and family structure, with positive results (Aunola, Stattin & Nurmi, 2000; Heaven, Newburya, & Mak, 2004; Leung & Kwan, 1998; Shuckmith, Henry, & Glendinning 1995; Steinberg, 1990; Wolfradta, Hempelb, & Miles 2003). In summary, Steinberg (2001) claims: “Adolescents from authoritative homes achieve more in school, report less depression and anxiety, score higher on measures of self-reliance and self-esteem, and are less likely to engage in antisocial behaviour, including delinquency and drug use” (p.8).

School related factors comprise a very large distinct area of research in connection to students at-risk (for example see McWhirter et al., 2004). In Australia,

...a focus on risk in educational settings led to a wide variety of interventions including curriculum reform, behaviour management policies, school counselling services, peer mediation strategies, parent-school liaison programmes, social skills training, mandatory notification legislation, social justice policies as well as referral to community health/welfare agencies. (Howard, Dryden & Johnson, 1999, p.307)

The complexity of this research, both in scope and methodology, has led McEvoy and Welker (2000), to conclude that school effectiveness, made up of all the factors pertaining to school structures and cultural practices, is transmitted to each student via the student’s perceptions of school climate. “School climate consists of the attitudes, beliefs, values and norms that underlie the instructional practices, the level of academic achievement, and the operation of a school” (McEvoy & Welker, 2000, p.134). Prior research conducted in Australia resonates positively with these claims. For example, Dwyer (1996) argues “If there is one consistent theme that cuts across all the complexity and diversity associated with early school leaving it is that the school culture ultimately is what makes the difference” (p.75). Much more recently, strong support for this view derives from a longitudinal Dutch study, showing that school culture, defined by the number of students from prior cohorts that stay on at school, was the most significant protective factor against dropping out of school (Luyten, Bosker, Dekkers & Derks, 2003). An effective school culture, providing support for students at-risk, is conceived by Druin and Butler (1999) to include a positive school climate.

School climate has been investigated in Australia by Marks (1998) through a longitudinal study to assess students' perceptions of the quality of school life. He found Year 9 Australian students' general satisfaction with school between the '80s and '90s, has declined largely due to large between-schools differences in attitudes to teachers. This seems reasonable since school climate is, in the main, the result of interactions between teachers/administrators and students. More recently, Hattie (2003) reporting on "Teacher Quality" at the ACER Annual Conference, asserts that teacher input accounts for 30 per cent of the variance in student achievement, citing instructional strategies as the reason for the variance. This area of research is extremely broad and therefore will not be elaborated further beyond expressing that certain school climates are more conducive to positive student outcomes, irrespective of differences in within-student attributes (Cooper et al., 2000; McEvoy & Welker 2000).

In assessing the impact of external factors upon student outcomes, an important question remains: do external factors operate independently to render students at-risk or does one factor potentiate the effects of another? For example, does neglectful parenting predispose adolescents to seek or succumb to negative peers influences? Theorists in the area (for example, Batten & Russell, 1995a; Bronfenbrenner 1979; 1979; 1995) suggest that external factors do not act in independently but rather facilitate each other's effects. Furthermore, since resilient children exist, the pathways by which these factors exert their influence might be different for different individuals. For example poverty might predict school behaviour problems, poor achievement and emotional and behavioural difficulties (Conger et al., 1993, Hanson, McLanahan, & Thompson, 1997) but many children growing in poverty succeed academically and show no signs of health, emotional or behavioural difficulties. These children are resilient (Rutter, 1985a, 1985b; Werner & Smith, 1988, 1990).

1.4.2 Empirical evidence supporting the view that external variables exert their effects through psychological constructs

It would be naïve to suggest that any one of the above cited external factors is alone responsible for the development of the student at-risk trajectory. The process is more complex involving many parameters that act together to influence dropping out behaviour. This notion is illustrated by research carried out by Jimerson, Egeland, Sroufe and Carlson (2000). They explored multiple predictors of high school dropout behaviour across development in a study utilising data from a 19-year prospective longitudinal study of at-risk children in America. The research demonstrated the association of the early home environment, the quality of early caregiving, socioeconomic status

(SES), IQ, behaviour problems, academic achievement, peer relations, and parental involvement with dropping out of high school at age 19. These results are consistent with the view that the student at-risk trajectory is a dynamic developmental process that begins before children enter elementary school. It is of note that psychosocial variables prior to school entry predicted dropping out with a power equal to later IQ and school achievement test scores. These findings are important but two things need clarification: how or by what mechanisms risk factors exert their influence and what is their relative strength in that influence.

Salient to the second point is the research conducted by Battin-Pearson, Newcomb, Abbott, Hill, Catalano, and Hawkins (2000) in the United States. They used structural equation modelling to assess the relative strength of association between external factors and dropping out behaviour. Their results showed that the strongest predictor of dropping out was academic underachievement. Of note, however, is the finding that academic underachievement was predicted twice as strongly by low parental expectations as by gender, low school bonding and antisocial peer involvement, and minimally by SES and low parental education. At the same time, low SES, bonding to antisocial peers and general deviance predicted dropping out independently of academic underachievement, with general deviance being most influential of the three.

The study did not examine associations between parental expectations and bonding to antisocial peers or deviant behaviour, or parenting style or parental involvement with school. Therefore, while parental expectations appear to be of prime importance in influencing student at-risk behaviour, as are socioeconomic structural factors, the mechanism by which these factors exert their influence is still uncertain. A huge empirical gap exists in this area. Some elucidation of this problem is, however, provided by studies conducted with resilient students, showing how structural or socioeconomic factors might exert their influence through psychological constructs.

Poverty is a much studied socioeconomic factor that has been associated with poorer physical, cognitive and social outcomes for children and adolescents (Duncan & Brooks-Gunn, 1997). However, a relationship between poverty and cognitive and emotional problems in children and adolescents does not signify causality since many children growing up in poverty are resilient. Parental coping with poverty or their perception of poverty appears to have an effect on resilience (Wyman et al., 1999). Working with 7-9 year old urban American children, all of whom shared chronic stressors (poverty, family turmoil and family separation) Wyman et al. (1999) identified

two groups of children – a stress affected and a resilient group. Child, caregiver and family demographic variables were matched in the two groups and various statistical procedures were used to compare them. A critical finding of the study was that the most salient variables for discriminating between the two groups was the sum total of negative caregiver parenting attitudes, or expectations. These included views of the child's competence and the child's future. The design of the study involved triangulation from teachers as well as parents with regard to the measures which were gathered through check lists and interviews. It seems that the caregiver's perception of their SES and situation, their coping, was such that it influenced the resilient status of their children. Risk factors such as poverty therefore might be viewed by some as more deleterious than by others, leading to parenting effects that in turn can compound the problems faced by a child or adolescent.

The transformation of sociological factors to psychological effects is further illustrated by a study examining resilience among abused and neglected children (McGloin & Widon, 2001). In this longitudinal investigation three groups of low SES children were studied: a control group, who were neither abused nor neglected, a group of physically or sexually abused individuals and a group of neglected individuals. The three groups were matched for age, sex, ethnicity and family background, social class, schools attended and neighbourhoods. One of the most striking results of the study was the observation that neglect and abuse were significantly associated with low educational participation and lower levels of resilience. Compared to the abused group, significantly more, (20 per cent) non-abused or neglected participants completed their secondary education, were not homeless (14 per cent), and were never arrested. Abuse also affected resilience attainment since sexual abuse and neglect were found to be significant negative predictors of resilience, whereas physical abuse, albeit severe, was not. Gender effects were also observed with females exhibiting a higher rate of resilience than males in this study. Apparently, children's competence levels and adaptive development are influenced more by what happens in their families, what parents do, than their parents' status in socio-demographic terms.

Studies like these show that some parents fail to develop resilient or adaptive patterns in their children, while others manage this through some yet to be identified psycho cognitive or behavioural patterns. What is still not known is what cognitive constructs are used by the children/adolescents who are at-risk compared to those who are resilient. On the other hand, we know with some certainty that academic achievement, and in turn a successful school career, is supported by certain psychological constructs. In the case of within student factors these include

certain motivational goals, a particular expectancy orientation and positive coping strategies. As yet, how these constructs develop in the student is not sufficiently well understood.

Theorists such as Bronfenbrenner (1977; 1979; 1995), supporting the bioecological perspective of development would suggest that constructs enhancing positive, or negative, outcomes develop as a result of reinforcement between two contexts that the student operates in, for example, the school and the home, a mesosystem interaction. At-risk behaviour is thus the product of the individual's way of perceiving certain contextual factors and responding to them. Conversely, positive academic outcomes can also result from mesosystem effects, through consistent reinforcement and expectations of certain behaviours in two or more contexts.

Substantial, if indirect, evidence supporting Bronfenbrenner's theory comes from research into parental involvement in schools. A comprehensive literature review was conducted in Great Britain (Desforges & Abouchar, 2003) to assess the impact of parenting and parental school involvement on student achievement. Whilst not specifically testing bioecological or interactionist theory, a strong case supporting it emerges from all the research reviewed. Parental involvement in school processes appears to mediate student achievement even when all the other factors shaping attainment have been taken out of the equation. It predicts positive academic outcomes when it takes the form of: a) interest in grades and helping with homework, b) involvement in school functions and, c) high parental expectations and educational values.

The importance of Bronfenbrenner's theory becomes clear when recalling that an interactionist perspective accounts for more contextual influences upon student at-risk trajectories than any of the other perspectives examining this problem. Few studies, however, have utilized this framework in examining student at-risk issues, perhaps because a longitudinal perspective is desirable in its application. The studies that are known to have used Bronfenbrenner's theory in their rationale and design will be described. First, however, there is a need to briefly outline our current understanding of psychocognitive constructs and behaviours linked to academic achievement.

1.4.3 Psychocognitive and behavioural student attributes linked with higher academic achievement

As Chapter Two reviews the literature pertinent to this area only an outline is offered here. There are various constructs that could be implicated in academic achievement for example, educational values or occupational aspirations. Most often cited in connection with academic achievement are

motivational goals. Few studies have been targeted specifically at students at-risk. Of those that have, few have looked at motivational strategies of these students with the exception of Solomon and Rogers (2001). They cite inappropriate motivational and coping strategies as the main reasons students at-risk disengage from education. Their assertions are backed up by many studies linking particular motivational goals and coping strategies with higher achievement and positive school adjustment. Moreover, it has been posited that high academic motivation acts as a protective factor in adolescents growing up in poverty (Strobel, 2002). Therefore, motivation appears to serve two purposes: to enhance academic achievement by, perhaps, increasing engagement in school related activities and to direct an adolescent towards academic engagement.

Motivation theory is very complex and there are scholars who favour one theory over another. In his review of motivational science Pintrich (2003) summarises research into student motivation into five basic families of social–cognitive constructs:

- Adaptive self-efficacy and competence beliefs
- Adaptive attributions and control beliefs
- Higher levels of interest and intrinsic motivation
- Higher levels of value
- Goals

Of the above, I focus upon achievement goals and self-efficacy because it has been demonstrated that motives do not have a direct effect on achievement behaviour, but influence behaviour through different achievement goals that individuals pursue (Elliot & Church, 1997), while self-efficacy has been widely shown to facilitate academic engagement and pursuits (Bandura & Locke, 2003).

Goals are conceived in terms of *mastery* and *performance*. Mastery goals orient the student toward learning and understanding, developing new skills, and a focus on self-improvement using self-referenced standards. In contrast, performance goals represent a concern with demonstrating ability, obtaining recognition of high ability, protecting self-worth, and a focus on comparative standards relative to other students by attempting to surpass others (Pintrich, 2003). Mastery goals have generally been associated with a host of positive cognitive, motivational, affective, and behavioral outcomes, whereas performance goals have been linked to less adaptive outcomes (Ames, 1992; Dweck & Leggett, 1988). In addition, there is a great deal of empirical evidence to support the idea

that performance goals are composed of two dimensions: approach and avoid (e.g. Elliot & Church, 1997; Harackiewicz et al., 2002).

This approach-avoid distinction is applied to distinguish two types of performance goals, performance-approach goals where the student is focused on achieving at higher levels than others and demonstrating high ability, and performance-avoid goals where the student is concerned with avoiding the demonstration of low ability or appearing stupid. Empirical studies suggest that avoidance achievement goals place a person at risk for negative achievement and psychological well-being outcomes (Elliot & Sheldon, 1997). Moreover, adoption of performance goals, regardless of ability, may lead to vulnerability to negative outcomes in the face of academic failure since they are positively related to projective coping and disruptive behaviour (Midgley, Kaplan, & Middleton, 2001), as well as self-handicapping, which is in turn related to lower achievement (Midgley & Urda, 2001; Zuckermann, Kieffer & Knee, 1998).

The concept of self-efficacy has had much support in educational research. Self-efficacy is a person's assessment of their competence to complete a particular task successfully. Many studies have assessed its role in facilitating academic achievement: for example in mathematics (Pajares, 1996), in regulating learning activities, raising academic aspirations and final grades independently of prior grades (Zimmerman, Bandura, & Martinez- Pons, 1992), in predicting successful school to work transitions (Pinquart, Juang, & Silbereisen, 2003), enhancing effort and academic success (Pintrich, 2003), curtailing transgressive behaviour (Bandura, Regalia, Caprara, Barbaranelli, & Pastorelli, 2001), and preventing problem behaviours and depression in children (Bandura, Caprara, Barbaranelli, & Pastorelli, 1999). In brief, self-efficacy beliefs appear to facilitate both scholastic motivation and psychological well-being. In regard to psychological well-being, it seems that self-efficacy predicts adaptive coping behaviour (Bandura, Caprara, Barbaranelli, Gerbino & Pastorelli, 2003).

The inclusion of coping strategies in this research lies in their presumed role as moderators in the relationship between a stressful environment and subjective well being (Compas, 1987). Being at-risk has been associated with being unable to cope with school demands and therefore adaptive coping strategies are important to help maintain a student's engagement with school tasks. Moreover, positive coping strategies are linked to a higher self-concept which in turn is linked to achievement (Mantzicopoulos, 1990). Tero and Connell (1984) found that positive coping strategies were linked to a mastery goal motivation and higher achievement while projection and denial

strategies correlated negatively with a mastery orientation and achievement. Later work suggests that positive coping strategies mediate positive classroom affect (Kaplan & Midgley, 1999) and adaptive coping strategies facilitate resilience (Howard & Johnson, 2000). Projective coping strategies have been correlated with disruptive behaviour (Friedel, Marachi & Midgley, 2002).

Moreover, adaptive coping strategies have been related to a particular expectancy orientation, that is, to optimism. Optimism has been defined as expecting a positive outcome, while pessimism has been defined as failure expectancy (Kassinove & Sukhodolsky, 1995). Early work by Scheier and Carver (1985) has connected optimism with adaptive coping. Optimism was found to be negatively correlated with the use of denial and attempts to distance one's self from a problem, while pessimism was related to maladaptive strategies, such as problem avoidance, denial, withdrawal, and the failure to complete goals when under stress (Scheier, Weintraub, & Carver, 1986), as well as self-handicapping strategies which predict underachievement (Midgley & Urdan, 2001).

With regard to academic achievement, Martin, Marsh and Debus (2001) found that success oriented Australian students are optimistic and have a strong sense of self-belief. In later conceptualisations, Martin and Marsh (2003) link optimism to a success oriented student profile characterized by proactive and positive task orientation, a positive self-belief, a value of school and mastery goals.

In addition to psychosocial constructs there are certain behaviour patterns that have been linked with students at-risk (Hinshaw, 1992). The sorts of behaviours which are observed by teachers and other school personnel, and implicated with an at-risk categorisation, are broadly divided into two: externalising behaviours, where problems are directed towards others and the environment, and internalising behaviours, where problems turn inwards towards the self. Both internalising and externalising students fail to meet the social and behavioural standards and expectations of teachers and peers in schools. As a result, they experience teacher rejection, low academic performance, poor peer acceptance and loneliness, and frequent referrals. Externalising students specifically have more than six times as many referrals as their average class peers (Gresham, Lane, MacMillan & Bocian 1999). Both of these types of students are at risk of academic underachievement, and of dropping out (Jimerson et al., 2000).

In summary, we know there are certain strategies or constructs students employ to facilitate their educational experience. It seems that students who do not employ these adaptive constructs are more likely to be at risk of academic failure. There are still however, important empirical gaps in our understanding. These are described below.

1.5 Issues as yet to be clarified: important questions that need to be addressed

There are important issues that need greater clarification in regards to how they apply to students at-risk. Adaptive strategies and constructs that students use have been proposed based on overseas studies using typical students not students identified to be at-risk. Moreover, few studies have simultaneously examined more than one developmental context, using Bronfenbrenner's theory. While some research has been conducted upon students deemed to be resilient, there are still many unanswered questions regarding the strategies they use in the school context and how they might differ from those of either typical or students at-risk; the majority of these studies have also been conducted overseas, using either qualitative or quantitative methods but not both. Parenting practices have been found to be culture specific and while the Australian cultural context might be considered to be similar to other Western cultures, the parenting style of Australian families has not been specifically examined before nor has it been examined by way of how it might be connected to students' motivational constructs. Another group of students who have received little attention in Australia with regard to the aforementioned issues is one of the most underprivileged groups in this country, the Indigenous group. In all, these gaps in our knowledge supply the impetus for the design of the research. Specifically, the gaps remaining in our understanding and knowledge are explained below.

1) A critical concern in relation to the Australian context was articulated by Batten and Russell (1995a):

There is comparatively little Australian research which links basic psychological concepts, such as self-esteem, motivation and maladaptive cognitive constructs, to students at-risk, even though these concepts are used frequently in the literature that was reviewed. Where such concepts were used technically, there was a reliance on overseas research. Frequently, however, the concepts were used in a non-technical sense. (Batten & Russell, 1995b, p.3-4)

This situation does not appear to have been ameliorated in the last ten years though Dowson and McInerney (2003) have attempted to add to the theory of motivation through a small scale qualitative study while a number of papers on the motivational constructs of typical students have appeared in the literature (e.g., Ainley, 2004, Barker, Dowson & McInerney, 2004).

2) What makes *resilient* students resilient? This issue is clearly very important if successful interventions are to be constructed for students at-risk. Some Australian studies have looked at resilience (for example, Howard & Johnson 2000, Johnson & Howard, 2000) but most of the work

on resilience has been done overseas (Finn & Rock, 1997). There are many unanswered questions with regard to the mechanisms through which resilience emerges, or the protective factors that exist to render students resilient in the face of social and structural adversity. It is not clear, for example, what form motivation takes in resilient students or whether their coping strategies are different from those students who are at-risk. In Australia, Martin (2002) has proposed that academic resilience might be enhanced through an optimistic disposition. His ideas are partly supported by a recent study (Jackson, Pratt, Hunsberger & Pancer, 2005) that states that authoritative parents exert their influence through developing optimism in their offspring. In other words, dispositional optimism is the mediator between parenting and psychological adjustment in the offspring. While this is an important addition to our understanding it did not look at how optimism links with academic achievement per se.

3) Are perceived parenting practices different in identified students at-risk and, since most studies on parenting have been conducted overseas, are they different in Australian samples?

Furthermore, although we suspect that certain parenting practices affect student outcomes, we do not understand what mediates these effects. Empirical work would suggest that parenting develops motivational constructs. An example is the quantitative Canadian study of Marchant, Paulson and Rothlisberg (2001). They employed Bronfenbrenner's conceptual framework to examine Year 5-6 students' motivations. Marchant et al. (2001) concluded that student motivation patterns mediated parent and teaching effects upon their achievement and that the students internalized parental values into their learning repertoire. Alternatively, as Jackson et al. (2005) suggested parental effects might be mediated through optimism. Perhaps optimism mediates motivational goals which in turn mediate successful academic outcomes.

4) Few studies specifically utilising Bronfenbrenner's theory in their design have been conducted anywhere in the world to examine students at-risk. In North America Paulson, Marchant and Rothlisberg (1998) and Marchant, Paulson and Rothlisberg (2001) have carried out research specifically using a bioecological design on primary age students but in Australia this has seldom been the case for any student age group, with the exception of a study carried out by Marjoribanks (2002). Marjoribanks' study examined students' self-concept, perceptions of their family and school learning environments as well as their occupational aspirations and found differences between those students who dropped out of school and those who continued their education. These differences were based on their aspirations, self-concept and achievement levels and the

socioeconomic niche that they belonged to. However, Marjoribanks did not assess students' coping strategies, achievement goals or their optimism levels for interactions or mediations from parenting and school contexts to motivational and coping strategies. Given that student achievement is influenced by multiple environments, it is a reasonable aim to test if students perceive congruence or incongruence among parenting and teaching characteristics and if this congruence or incongruence has an effect upon academic achievement and increases the risk of dropping out. Moreover, the methodology employed in all of these studies were only quantitative and so contextual nuances arising from students' different home and school environments could not be documented, a serious omission when employing Bronfenbrenner's bioecological theory.

5) Indigenous students are one of the most disadvantaged groups in Australia, so there is a need to investigate all of the issues pertaining to students at-risk within this group of adolescents. To date, it appears that only McNerney, Hinkley, Dowson, and Van Etten, (1998) have studied motivational goals of Indigenous students in a study comparing the goal structure of various groups of Australian secondary students. Parenting effects, coping strategies and the expectancy orientation of Indigenous students do not appear to have been examined.

1.6 Underlying principles governing current research

The sections following have arisen from the foregoing and the literature review in Chapter Two. They include a brief summary of the contents of Chapter Three, the methodology chapter. This study will compare and contrast three groups of students: at-risk, resilient and typical. In brief, using both quantitative and qualitative methods, the socio-demographic, motivational, coping and expectancy dimensions, as well as the parenting and school perceptions of the three groups of students will be compared and contrasted using Bronfenbrenner's theory to guide the research.

1.6.1 Study design and constructs employed

In deciding which student characteristics would be considered in this study a mesosystem model was developed from the students' contexts most commonly cited as influential to academic achievement. This involved factors located within the student, as well as external factors linked to achievement. Hence, parenting, school climate and psychosocial constructs are simultaneously employed in order to discover associations between student psychocognitive constructs and parenting and school perceptions.

Coping strategies, expectancy, self-efficacy and motivational goals are postulated to take distinct forms in the case of certain parenting style perceptions and positive school perceptions. Conversely, if this is not the case, a different expression of these constructs is anticipated in resilient and students at-risk. If parenting perceptions are reported to be neglectful, school perceptions may also be unfavourable, perhaps accompanied by low academic self-efficacy, a pessimistic expectancy, greater levels of negative coping strategies and lower achievement levels. Alternatively, if parenting is neglectful and school perceptions are positive, it is possible that a resilient profile is present, accompanied by higher self-efficacy, positive coping skills, an optimistic expectancy and higher achievement levels.

In essence, any number of variations is possible, either quantitative, that is different levels of self-efficacy, expectancy or coping skills in different individuals, or qualitative, manifest in different coping strategies or motivational goals.

1.6.2 A mixed methods approach

A primary assumption of this investigation is that core psychological construct differences between students arise because of contextual microsystem and meso-system interactions which may be qualitative in nature. Therefore the methodology adopted must be able to investigate these issues. It was thought that the most suitable methodological approach would entail two phases: a quantitative part, using a survey to assess psychological constructs, parenting style and school perceptions, and the relationships between them, followed by a qualitative part.

The quantitative part of the research will employ multivariate statistics to assess the differences between the identified groups of students and regression models to assess the parsimony of various factors, for example SES variables, in predicting students at-risk. Subsequently, use of structural equation modelling techniques enables the mapping of pathways relating the various measured constructs with achievement.

During the qualitative phase, semi-structured interviews explore the views of selected participants regarding school life, family perceptions and motivations and the interconnections between them using Bronfenbrenner's bioecological framework. As already noted SES influence upon academic achievement outcomes has been established in Australia and reviewed extensively by Batten and

Russell (1995a). What is still unclear is whether this influence operates through parenting, educational stimulation provided at home, the local community environment or some other factors or combination of factors. The qualitative phase of this study is employed to explore these possibilities in order, amongst other things, to suggest further investigation questions.

1.7 Methodological considerations

Methodological issues are dealt with in depth in Chapter Three. The main points outlined below include sampling matters, identification of students, instrumentation and research questions.

1.7.1 Sampling matters

The sampling adopted is cluster sampling. State high schools in the Townsville area are used as clustering units. Government schools in economically diverse school districts are selected since these schools are most likely to contain larger numbers of students at-risk (Batten & Russell, 1995a). Participants are students in years 8 to year 10 since this age group has not been studied in Australia from a bioecological perspective.

1.7.2 Student identification

To enable the investigation to take place, the identification of students at-risk occurs on the basis of academic results in mathematics and English. That is, a student will be deemed to be at-risk if their mathematics and/or English grades are below a pass. This method of classifying students is in line with previous research (e.g., Cappella & Weinstein, 2001; Catterall, 1998; Doig, 2001; Marks, Fleming, Long & McMillan, 2000; Marks & Ainley, 1997; Rothman & McMillan, 2003). Students are considered to be resilient if their academic results are above a pass but their SES status indicates that they might be at-risk. All other students form a third group, the control group, or typical students.

1.7.3 Instrumentation

The instruments to be used in the research measure perceived parenting style, school climate, motivational goals, coping strategies, expectancy orientation, and various academic and SES student and family attributes. These instruments have a strong validation history. They are further statistically validated using structural equation modelling techniques, employing the AMOS 5.0 computer software.

1.7.4 Research questions

After resilient, at-risk and control (typical) groupings are established, a series of questions are investigated to discriminate between the three groups of students. These questions include:

1. How do the motivational goals, coping strategies and optimism of the three groups of students differ?
2. Are school perceptions related to motivational goals, coping strategies and/or parenting perceptions?
3. Are parenting perceptions connected to motivational goals and if so are they mediated by optimism?
4. Are mesosystem interactions evident/ absent in each group of students?
5. Are socioeconomic status (SES) variables, including Indigenous status, linked to achievement outcomes directly or via their effect upon psychological constructs?
6. Does parenting predict achievement (or student at-risk status) independently of psychological constructs or is it mediated by an expectancy orientation? Do any of the psychological constructs assessed in this study act as protective factors?

The questions are designed to reflect more general issues in the 12-15 year old age group, namely:

- Verification of current ideas about students at-risk in relation to students in North Queensland;
- Relationships between the various psycho cognitive constructs employed;
- Parenting style influences;
- School climate influences;
- The generation of particular meanings and attitudes of selected participants to build and validate Bronfenbrenner's theory of the construction of the learner;
- A resilient student profile.

1.7.5 Rationale: Appropriateness of methodology chosen

On the basis of the previous findings, the research focuses on a set of psychological constructs which are known to be linked with academic achievement, to contrast between students at-risk and resilient students to help elucidate the mechanism with which parenting and school contexts exert their influence. The conceptual lens through which the study is constructed, namely Bronfenbrenner's bioecological theory, dictates the exploration of student perceptions of selected contexts, or microsystems, as well as their core self perceptions. Furthermore, since some SES factors predict student at-risk status, SES student variables are controlled.

Key interests of this study are parenting perceptions, school climate perceptions, expectancy orientation, coping strategies and motivational goals since they have been connected with academic achievement. The difference between this and previous research lies in the employment of a bioecological theory to frame the investigation. While all of these assessments have been conducted previously, they have not been conducted simultaneously, either overseas or in Australia nor by way of a comparison between three groups of students.

Because it is suggested by some theorists (e.g., Blyth, 1982; Bronfenbrenner, 1977) that children's phenomenal view of their socialising environment is of considerable importance, this study uses the students' perceptions as an indication of their experience. Perceptions of parenting and school climate, two microsystems, are used to explore relationships between the two, the mesosystem. A mesosystem design examines the extent to which the contexts containing the developing child/adolescent either conflict with or complement each other in terms of their relations with the outcomes of the child/adolescent. This is based on the assumption that complementary, or congruent contexts are more likely to result in positive outcomes (Bronfenbrenner, 1986). In addition, a mesosystem design can expose associations between core self constructs such as self-efficacy and the two microsystems, home and school.

1.7.6 Delimitations and scope of the research

The research is carried out using government schools in North Queensland. This is because students in government schools have a higher likelihood of being at-risk. Since no research involving students at-risk has been carried out in North Queensland to date, North Queensland is the selected site of the research.

The participants are students in Years 8 to 10 because these students are particularly at-risk of making a decision to drop out. Furthermore, as was outlined earlier, government policies to increase compulsory schooling are targeted at secondary students in Year 10.

Specific school structures and policies are not investigated in this research since it is thought that school effects are transmitted to students through their perceptions of school climate (McEvoy & Welker, 2000).

Student peer relationships and influences are not the focus of this study since there is evidence that peer relationships and associations are influenced in the first place by parenting factors (e.g., Parke & Bhavnagri, 1989).

The constructs measured are student perceptions of their school climate, their parenting, their motivational goals their coping strategies and their expectancy orientation. In addition, some socio-demographic information is sought. This information is limited to each student's Indigenous status, parental employment and university educational attainment and family structure. The reason for including these measures is that these SES indices have been cited as predictors of at-risk status in previous Australian studies. Since one of the aims of this research is to ascertain whether SES variables are more parsimonious predictors of at-risk status than motivational goals, coping, expectancy, parenting and school climate perceptions SES measures need to be included in the survey instrument.

Finally, mathematics and English mid-year achievement levels are recorded as a means of classifying the students into the groupings of at-risk, resilient or control. This rationale follows prior research procedures. For this information to be accessible, the research is conducted at the beginning of the second semester of the school year, after end of semester reports are issued.

1.8 Outline of the remainder of the thesis

The structure of the rest of this thesis takes the following format:

Chapter 2: Literature Review. This reviews research on academic achievement, comprising sociological and psychological factors thought to enhance educational outcomes. Included here because of their effects upon academic outcomes are perceptions of parenting practice, perceptions of school climate and research supporting Bronfenbrenner's bioecological theory of development. An outline of research findings on resilience is also presented.

Chapter 3: Methods. This chapter delineates the precise methods used in the research and why these are selected.

Chapter 4: Quantitative results and analyses. Statistical procedures examine the survey results and quantitative questions are addressed.

Chapter 5: Qualitative results and analyses. Interview transcripts are analysed using narrative analysis methods and Bronfenbrenner's bioecological framework.

Chapter 6: Summary, synthesis and discussion of quantitative and qualitative analyses, conclusion, recommendations and limitations.

Chapter Two: Review of the Literature

Introduction

Chapter One outlined the research focus of this study, the rationale used to frame the research and the theoretical approaches taken by scholars examining the drop-out or at-risk trajectory of adolescents. Socioeconomic, family, school and within student psycho-cognitive factors identified in promoting academic success/failure have been studied, providing a breadth of knowledge for the understanding of the at-risk trajectory. But as McEvoy and Welker (2000) contend:

Few studies provide a clear theoretical and empirical basis to guide programs intended to enhance both academic and pro-social behaviour of students identified as at-risk. Because the corpus of literature is immense, no comprehensive summary of all the relevant findings is manageable. (p.130)

The authors further suggest that as a minimum requirement four areas of concern need to be considered:

a) the relationship between academic failure and anti social behaviour; b) the development of antisocial behaviour in children; c) the climate in which both academic failure and antisocial behaviour emerge and d) the relationship between school climate and school-based violence prevention and intervention programming. (p.130)

McEvoy and Welker's rationale overlaps substantially with much of Bronfenbrenner's bioecological theory of development which provides the overarching framework of this study. The purpose of this chapter is to examine in more detail key issues regarding students at-risk and review the evidence supporting the bioecological theory. Questions addressed in this review of the literature are:

1. What are some of the factors connected with a higher risk of dropping out of school?
2. What are some of the factors linked to enhanced academic success?
3. What are the postulates of Bronfenbrenner's bioecological theory of development?
4. What empirical evidence supports Bronfenbrenner's bioecological theory of development?
5. What is known about academically resilient students?
6. What research questions arise from this review?

2.1 Factors connected with a higher risk of dropping out of school

The factors commonly associated with leaving school early, or dropping out, tend to be grouped into two areas according to whether they emanate from within the student or not: socio-demographic and family structural factors, and individual student behaviour patterns. These two groups are treated separately; however there is much evidence to support the notion that the former group has a significant impact upon the latter via psychological pathways, although these are often difficult to identify and describe. This impact of socio-demographic and structural factors upon individual adolescent characteristics might lead to an at-risk trajectory or to the development of academic resilience, supporting the bioecological theory of development. Bronfenbrenner's central tenet is that whilst human development is refined by the experiences that the developing person undergoes, these are context dependent and might be transmitted through the conduit of personal interactions that the individual has with others, for example, care givers or peers.

2.1.1 Socio-demographic characteristics of students at-risk

The research literature has documented that a students' likelihood of dropping out is related to socio-demographic factors (e.g., Finn & Voelkl, 1993; Rumberger, 2001). Catterall, (1998) goes as far as stating that being at-risk results from membership of a number of disadvantaged societal groups. This view underpins particular research approaches aiming to define the socio-demographic characteristics of Australian students at-risk. They are summarised by McMillan and Marks (2003) whose longitudinal study updated and confirmed the earlier research of Batten and Russell (1995a). The socio-demographic profile of early leavers and their motivations for leaving have not altered substantially in the last fifteen years. The main findings of both studies are:

- Boys are more likely to drop out than girls;
- Parental education and socio-economic background are both associated with early school leaving, with parental education limited to secondary education or less and parental employment in unskilled manual jobs being associated with the largest group of early school leavers;
- Indigenous Australians are found to be the most disadvantaged group, with the highest drop out rates;

- Rural students are more likely to drop out than urban students;
- Government school students are more likely to drop out than Independent and Catholic school students;
- English-speaking background students are more likely to drop out than their non-English speaking counterparts;
- Securing a job or an apprenticeship, or a financial reason are the most commonly stated reasons by students for dropping out of school.

The special case of Indigenous students needs to be clarified at this point. Indigenous families in Australia represent some of the most disadvantaged in the country. For example, in 1996, 70% of the non-Indigenous Australian population owned or were purchasing their own home, compared with only 26% of Indigenous families, while 13% of urban Indigenous households did not have enough bedrooms to meet their needs, compared with 4% of other Australian households (Commission for children and young people,(Qld), 2004). In addition to poverty, many Indigenous children are exposed to other kinds of developmental risks both within and outside the home. Within the home, those risks include being born to teenage mothers, being reared by parents speaking English as a second language and living in single-mother and extended family households. Outside the home risks include residing in disadvantaged neighbourhoods, characterized by low social support and high crime (Commission for children and young people, (Qld), 2004). Moreover, reviewing contemporary Indigenous research in Australia, Mellor and Corrigan (2004) declared that there is a dearth of empirical quantitative research within the Indigenous education literature. They noted that the research methodology employed in current studies is limited by its focus on small case studies derived from communities with a high Indigenous population, thus isolating Indigenous education research from the broader discourses of disciplines such as psychology, sociology and health.

These results are not unique to the Australian context. Rumberger (2001) contends that family background is the single most important contributor to success in school in the United States. Socioeconomic status (SES), measured by parental education and income, has repeatedly been found to be a powerful predictor of school achievement or dropout behaviour (Pong & Ju, 2000; McNeal, 1999;Duncan, Yeung, Brooks-Gunn & Smith, 1998; Rumberger & Larson, 1998; Rumberger, 1983; 1995; Bryk & Thum, 1989; Ekstrom et al., 1986). Longitudinal research on 1803

low SES minority students has also demonstrated that within this disadvantaged group, students from single-parent and step families, whose educational attainment is limited to high school education are more likely to drop out of school than students from two-parent families (Finn & Rock, 1997), echoing conclusions reported elsewhere (Astone & McLanahan, 1991; Goldschmidt & Wang, 1999; McNeal, 1999; Rumberger, 1983; Rumberger, 1995; Rumberger & Larson, 1998; Teachman et al., 1996). Moreover, drop-out behaviour appears to interact with the gender of the student in combination with the gender of the custodial parent. Children living with the like-gender custodial parent are less likely to drop-out in single-parent families, but more likely to drop out in stepfamilies (Zimiles & Lee, 1991).

Mobility is related to SES factors. A growing body of research suggests that both residential mobility (changing residences) and school mobility (changing schools) increase the risk of dropping out of high school (Astone & McLanahan, 1994; Haveman et al., 1991; Rumberger, 2001; Rumberger, 1995; Rumberger & Larson, 1998; Swanson & Schneider, 1999; Teachman et al., 1996).

Structural and demographic factors have been repeatedly shown to lead to dropping out via the mediation of low academic achievement. In the United States, Jimerson, Egeland, Sroufe, and Carlson, (2000) followed a cohort of 177 children from birth to age 19 and found that low academic achievement in sixth Year significantly predicted drop out status at age 19. Similarly, using longitudinal data, Battin-Pearson et al. (2000) showed that low academic achievement mediated the effects of other variables, such as low SES and ethnicity to predict dropping out of school two years later. Researchers in Australia as elsewhere, have demonstrated that low literacy and/or numeracy achievement seems to be the most proximal influence on dropping out (e.g., Kaplan, Peck & Kaplan, 1997; Khoo & Ainley, 2005; McMillan & Marks, 2003; Muthen, 2003; Rumberger, 2001; Goldschmidt & Wang, 1999; Rumberger, 1995; Rumberger & Larson, 1998; Swanson & Schneider, 1999; Wehlage & Rutter, 1986). Conversely, mathematics and English achievement in Year 9 positively predicts Year 12 participation and further study in Australia (Khoo & Ainley 2005).

Dutch research, employing longitudinal, hierarchically analysed data, provides strong empirical evidence that literacy and numeracy problems develop early in a child's academic career (Dekkers, Bosker & Driessen, 2000). Low income and poverty have been strongly linked to low preschool ability and low achievement, dropping out of school and school disengagement even when controls

for family characteristics such as maternal education, family structure and welfare receipt are included (Guo & Harris, 2000; Duncan, Yeung, Brooks-Gunn & Smith, 1998). This is possibly because preschool ability sets the stage for children's transition to formal schooling. A lack of academic socialization, such as sorting, counting, colour naming and letter recognition, all preschool ability indicators, places children at a disadvantage upon entry to school. The correlations between preschool behaviour problems and later school behaviour problems however, are not so strongly connected to poverty as to other family events, such as marital discord and divorce, and/or peer relations (Duncan, Yeung, Brooks-Gunn & Smith, 1998).

2.1.2 Behaviour patterns of students at-risk

Low levels of literacy and numeracy, often cited as the most influential factors linked to dropping out of school, are, in turn, associated with a low level of academic engagement time and antisocial behaviour (McEvoy & Welker, 2000; Lane, 1999; Hinshaw, 1992). In an overview of research on African American children, Taylor (1991) noted that children at-risk are more likely than others to bring with them behaviours and predispositions not conducive to learning "that may set in motion patterns of school failure" (p.15). The sorts of behaviours observed by teachers and implicated with at-risk categorization are broadly divided into two groups: externalising, where problems are directed towards others and the environment, and internalising, where problems are turned inwards towards the self.

Externalising behaviours typically involve an acting-out style of responding that includes a repertoire of behaviours such as aggression, arguing, impulsivity and disobedience. On the other hand, internalising behaviours typically withdraw the student from participation. These internalising behaviours are characterized by an over-controlled, inhibited style of responding that is interpreted as social withdrawal. Such students often experience emotional difficulties like anxiety, phobias, fearfulness, depression, loneliness and somatic symptoms like headaches and stomach-aches (Gresham, Lane, MacMillan & Bocian, 1999). Both internalising and externalising students might fail to meet the social and behavioural standards and expectations of teachers and peers in schools. As a result, they might experience teacher rejection, low academic performance, poor peer acceptance and loneliness, and frequent referrals. Externalising students specifically have more than six times as many referrals as their average class peers (Gresham et al., 1999). Both of these types of behaviours might place students at risk of exclusion, though this is difficult to demonstrate because the reasons for exclusion are not published in Australia.

Behaviour patterns associated with dropping out are often described both in Australia and in the USA using a checklist developed from a statistically based classification system developed in the USA. US researchers found that when teachers use the Child Behaviour Checklist (Achenbach, 1978) these internalising/externalising profiles vary between males and females and by age group. Clearly teachers are susceptible to their own biases in identifying unacceptable behaviour (Smith, 2001). This depends on the teachers' preference of epidemiological, social-constructivist or bioecological models in their conceptualizations of unacceptable behaviour and upon factors such as their position in the school and whether they teach in primary or secondary schools. By attributing the cause of the unacceptable behaviour to the student, teachers might fail to recognize the social context in which the student operates (Maras & Kutnick, 1999). Tables 2.1 and 2.2 show Maras and Kutnick's (1999) findings regarding teachers' cited origins of student behavioural and emotional problems. While they did not report the significance level of the differences in these findings, they showed that teachers place the onus for behavioural and emotional problems primarily on to the individual student. In second place, home contexts appear to be considered responsible for emotional problems while schools contexts are thought to promote some of the behaviour problems. In general, the majority of teachers in this study believe that both types of problem are under the control of the individual student, giving little thought to mediating factors.

Table 2.1 Teachers Reported Locations of Behaviour Problems

Locations of Behavioural Problems	Types of School/Sex of Children				Total
	Primary (4–10 years)		Secondary (11–16 years)		
	Boys (n)	Girls (n)	Boys (n)	Girls (n)	
Individual	21	1	54	23	99
Home	1		2	1	4
School	13	1	22	3	39
Other	1		4		5
Total	36	2	82	27	147

(Maras & Kutnick, 1999, p.147)

Table 2.2 Teachers Reported Locations of Emotional Problems

Locations of Emotional Problems	Types of School/Sex of Children				Total
	Primary (4–10 years)		Secondary (11–16 years)		
	Boys (n)	Girls (n)	Boys (n)	Girls (n)	
Individual	20	14	44	22	100
Home	8	2	21	7	38
School	9		1	1	11
Other					
Total	37	16	66	30	149

(Maras & Kutnick, 1999, p.147)

Checklists employed to identify these behaviour patterns are descriptive and as such they do not inform us either of the cause or how to intervene. Furthermore, they are culturally based. Some behaviour will be deemed appropriate in certain cultures or minority cultures while totally inappropriate in others. This is particularly important when considering behaviours of Indigenous students and ethnic groups in Australia, or, in countries such as the USA and the UK where there are large numbers of diverse populations whose behavioural values differ from those of the dominant British and Anglo-American culture (Wright & Wright, 1976; Rosen, 1959; see also Caldas & Bankston, 2005 for a contrary perspective). In Australia, where the use of these checklists has been infrequently published, it was revealed that 15% of boys and 14.4% of girls aged 4-12 years had emotional and/or behavioural problems when the Child Behaviour Checklist was used as part of the National Survey of Mental Health and Wellbeing in 1998 (Al-Yaman, Bryant & Sargeant, 2002). These problems were classed as somatic complaints, delinquent behaviour and attention problems (Al-Yaman et al., 2002). Moreover, they manifest themselves predominantly in single, step/blended families of low income or where one or both parents are unemployed (Knutson, DeGarmo, & Reid, 2004; Casanova, Cruz Garcia-Linares, de la Torre, & de la Villa Caprio, 2005; Al-Yaman et al., 2002) supporting previous findings and pointing to the role of contextual mechanisms and processes in the development of behaviour problems rather than simply within child factors, such as child temperament (Jimerson, Egeland, Sroufe, & Carlson, 2000; McLoyd, 1998; Duncan et al., 1998; Duncan, Brooks-Gunn, & Klebanov, 1994; Astone, & McLanahan, 1991).

A number of US and other international studies have shown disruptive behaviour constitutes a strong predictor of academic difficulties and, ultimately, dropping out of school (e.g., Vitaro, Larocque, Janosz, & Tremblay, 2001; Alexander, Entwisle, & Horsey, 1997; Rumberger, 1995;). The predictive link between early disruptive behaviour and later school failure holds even when

children's intellectual capabilities or family socioeconomic status are taken into account (Rumberger, 1995; Vitaro et al., 2001). Disruptive behaviours include behaviours that can be grouped into two conceptual categories: (a) aggressiveness, antisocial behaviour, and opposition (i.e., the social aspect of disruptiveness), and (b) hyperactivity, inattention, and impulsivity (i.e., the cognitive aspect of disruptiveness). These behaviours often lead to suspensions or, for repeat offenders, to exclusions. The link between disruptive behaviour problems and dropping out of school may thus be driven either by the cognitive or the social component of disruptive behaviours, or by both, in an additive or interactive mode (O'Neil, Welsh, Parke, Vitaro et al., 2001; Wang, & Strand, 1997; Woodward & Fergusson, 2000).

2.2 Factors linked with enhanced academic success

Some claim that inherited cognitive abilities are the best predictor of achievement (Gange & St Pere, 2002). Yet, cognitive abilities as measured by IQ are not fixed and have been found to improve with schooling (Ceci, 1991). What is more, IQ measures over the last twenty years indicate that present generations worldwide have made massive IQ gains over previous generations (Flynn, 1999; Dickens & Flynn, 2001). There is a puzzle attached to this finding, namely that although measures show an overall IQ increase in the US, this same period marks a decline in Scholastic Aptitude Tests for US high school students (Flynn, 1999). This finding is also reflected in international studies measuring IQ data, where it has been noted that the closer the test comes to the content of school-taught subjects, nil or minimal gain has been noted (Flynn, 1999). Scholars like Dickens and Flynn attribute these IQ gains to environmental influences that suggest cultural, contextual effects. This view may explain why SES effects combine to put certain students at academic risk. For example, when considering the low levels of literacy and numeracy that students at-risk typically attain, it is worth remembering that students at-risk often have high rates of truanting and mobility (DETYA, 2001). Additionally, IQ and motivation do not appear to be correlated, although persistence is predictive of achievement (Gange & St Pere, 2002). So the issue of motivation is critical since, notwithstanding the above, motivation is almost always implicated as a determinant of achievement (Gange & St Pere, 2002). Along with motivation various other psycho-cognitive constructs have been linked with enhanced student achievement.

2.2.1 Psycho-cognitive factors related to educational achievement

In reviewing Australian research, Batten and Russell, (1995b) point out that:

There is comparatively little Australian research which links basic psychological concepts, such as self-esteem, motivation and maladaptive cognitive constructs, to students at-risk, even though these concepts are used frequently in the literature that was reviewed. Where such concepts were used technically, there was a reliance on overseas research. Frequently, however, the concepts were used in a non-technical sense. (Batten & Russell, 1995b, p.3-4)

Approaching the idea of factors related to student disaffection led to a British research report by Solomon and Rogers (2001). This report provided some clues as to why some students experience disengagement or disaffection and hence become at-risk.

The study involved 92 students aged 13-16 in pupil referral units in Lancashire, Northern England. Based on demographic details, referral histories, school histories and educational background they were deemed to be students at-risk. Solomon and Rogers used quantitative and qualitative methodologies to study the students and obtain data from a range of practitioners in the units. By combining students' causal attributions and estimates of their motivations and sense of personal agency, the researchers tried to uncover the psychological reasons for disaffection rather than the manifest academic and behavioural ones. This methodology, common in the behavioural disciplines, appears to be relatively uncommon in educational research. The rationale as expressed by the researchers was: "Disaffection from school is usefully seen as part of an ongoing school career in which a number of agencies play a part, as influences on expectations and aspirations, and as more general cultural influences" (p.337). Factors such as agency and choice, self-efficacy and causal attributions were rated using questionnaires incorporating selected items of the Patterns of Adaptive Learning Survey (PALS) scales. Solomon and Rogers (2001) summarized their findings by stating that the disaffection experienced by these students was the result of a lack of motivational and coping strategies.

Motivational and coping strategies as identified by Solomon and Rogers (2001) have been cited as necessary attributes for effective learning by many educational researchers (e.g., Guay & Vallerand, 1997; Wentzel, 2003;). Before examining this in more detail, it is worth noting that their development is underpinned by various psychological mechanisms interacting upon and with the individual (McInerney & McInerney, 2002) and influenced by socio-economic and biological factors (Rutter, 2002). It has been proposed that motivational and coping strategies enable interactions between the biological and sociological domains to take place resulting in positive, resilient, or negative, at-risk, outcomes (McWhirter, McWhirter, McWhirter, & McWhirter 2004).

2.2.1.1 Motivational correlates to academic achievement

Pintrich (2003) argues that motivation is central to development and innovation in learning and teaching contexts:

Researchers interested in basic questions about how and why some students seem to learn and thrive in school contexts, while other students seem to struggle to develop the knowledge and cognitive resources to be successful academically, must consider the role of motivation. (p.667)

Current debate, however, revolves round the components of motivation (Bandura & Locke, 2003). Vroom's expectancy value theory of motivation (Vroom, 1964), has held a major position in the study of work motivation (Van Eerde & Thierry, 1996). It states that individuals will be motivated to work based upon their beliefs regarding effort-performance relationships and the desirability of the work outcomes associated with their performance. However, meta-analysis of 77 studies on Vroom's expectancy models over the last 30 years has raised doubts as to the validity of the tenets of this theory (Van Eerde & Thierry, 1996). On the other hand, while debating the utility of Vroom's model of motivation, Bandura and Locke (2003) claim that meta-analyses of the effects of self-efficacy in diverse spheres of functioning, including academic achievement and persistence, have consistently shown that efficacy beliefs contribute considerably to the level of motivation and performance. In his review of motivational science perspectives Pintrich (2003) sorts student motivation research into five families of social-cognitive constructs. They are:

- Adaptive self-efficacy and competence beliefs motivate students.
- Adaptive attributions and control beliefs motivate students.
- Higher levels of interest and intrinsic motivation motivate students.
- Higher levels of value motivate students.
- Goals motivate and direct students.

Because it has been shown that motives do not have a direct effect on achievement behaviour, but influence behaviour through different achievement goals that individuals pursue (Elliot & Church, 1997), this review reports studies which have examined the relations of goals and classroom outcomes. Additionally, since the unique contribution of self-efficacy has been verified in numerous experiments in which it has been shown to facilitate academic engagement and pursuits (Bandura & Locke, 2003) self-efficacy reports are also reviewed.

Goals are conceived in terms of *mastery* and *performance*. Mastery goals orient the student toward learning and understanding, developing new skills, and a focus on self-improvement using self-referenced standards. In contrast, performance goals represent a concern with demonstrating ability, obtaining recognition of high ability, protecting self-worth, with a focus on comparative standards relative to other students and attempting to best or surpass others (Pintrich, 2003). Mastery goals have generally been associated with a host of positive cognitive, motivational, affective, and behavioural outcomes, whereas performance goals have been linked to less adaptive outcomes (Ames, 1992; Dweck & Leggett, 1988). In addition, there is a great deal of empirical evidence to support the idea that performance goals are composed of two dimensions: approach and avoid (e.g., Elliot & Church, 1997; Harackiewicz et al., 2002). This approach-avoid distinction is applied to distinguish two types of performance goals, performance-approach goals where the student is focused on demonstrating high ability, and achieving at higher levels than others while in adopting performance-avoid goals the student is concerned with avoiding the demonstration of low ability or appearing stupid. Empirical studies have shown, for example, avoidance achievement goals place a person at risk for negative achievement and psychological well-being outcomes (Elliot & Sheldon, 1997), while adoption of performance goals regardless of ability might lead to vulnerability to negative outcomes in the face of academic failure since they are positively related to projective coping and disruptive behaviour (Midgley, Kaplan, & Middleton, 2001).

In Australia, Smith, Sinclair, and Chapman (1999) found that an ability goal orientation, also referred to as performance approach goal orientation, correlated with negative affect and low self efficacy, and seeking to avoid failure or performance avoid goals was highly endorsed by students sitting for the Higher School Certificate (HSC). Mastery goals related to an increased GPA in middle school students (Wentzel, 1998a). Performance-avoid goals positively predicted academic handicapping strategies which are independently related to lower achievement (Midgley & Urda 2001). There is also some evidence to support the notion that the pursuit of classroom goals of whatever description, mastery, ability or social, was related significantly and positively to grades (Wentzel, 1993). Thus, an active pursuit of classroom goals in early adolescence seems to be an indicator of higher engagement in school.

The relationship between mastery goals and achievement is not unambiguous however, since in some studies it is positive while in others there is no significant relationship between the two variables (Dupeyrat & Marine, 2005). In studies using correlational analyses mastery goals and achievement have not been linked (Greene & Miller, 1996). However, path analyses have shown

the indirect influences of mastery goals to achievement via deeper cognitive processing such as self-efficacy (Greene & Miller, 1996; Nolen, 1988). In relation to adults returning to school, a mastery goal adoption was positively associated with achievement outcomes (Dupeyrat & Marine, 2005).

The connection of performance goals with achievement is also debated since Harackiewicz et al. (1997) found that those who adopted performance goals achieved higher grades than those who adopted mastery goals. The same conclusion was reached by Elliot and Mc Gregor (1999), while Midgley, Kaplan and Middleton (2001) state that performance goals have been positively associated with academic self-efficacy and course grades. However, a performance goal orientation, either approach or avoid, is linked to self-handicapping strategies that are in themselves independently linked to lower achievement (Midgley & Urdan, 2001; Midgley, Arunkumar, & Urdan, 1996; Zuckermann, Kieffer, & Knee, 1998).

Self-handicaps, such as procrastination, purposely not trying, or excuse finding for not attending to a task, are obstacles constructed by an individual to protect or enhance self-esteem in the event of unsuccessful performance. The obstacles may interfere with performance but still permit the individual to discount responsibility for failure and augment credit for success. If one fails, attribution to poor ability can be discounted because of the constructed obstacle. If one succeeds, attribution to ability can be augmented because the good performance occurred despite the presence of the obstacle (Zuckermann, Kieffer & Knee, 1998). Moreover, self-handicapping was found to predict a decline in academic achievement even when controlling the effects of prior achievement on self-handicapping (Urden, 2004). In sum, self-handicapping results in the individual foregoing the possibility of doing well in order to avoid demonstrating incompetence. Some researchers go as far as claiming that self-handicapping “borders on failure acceptance” (Martin & Marsh, 2003, p.33). Work carried out by Martin, Marsh, and Debus (2003) in Australia, has linked self-handicapping with a performance goal orientation, in a model derived from a longitudinal study, suggesting that students engage in self-protective strategies in anticipation to poor performance.

The ambiguous state of the links of achievement goals to student performance may be associated with the timing and type of anticipated evaluation (Ames, 1992). To test this hypothesis, Butler (2005) examined the temporal variability of motivational goals in a study that manipulated initial goals by the evaluation that students anticipated. Butler (2005) showed that a particular motivational goal orientation is most likely to be linked to achievement if it is measured

immediately prior to an evaluation task. Furthermore, Butler observed that improvements on achievement were associated with mastery rather than a performance goal orientation when students were told that their performance would not be evaluated relative to others in the class, but rather in terms of monitoring their progress. Moreover, if, as a result of an assessment task, teacher evaluation was not anticipated, both mastery and performance motivational goals were low (Butler, 2006). The findings suggest that students adopt different goals subject to the task at hand. This is consistent with research showing that a contingency condition e.g. normative assessment, enhances performance goals (Elliot, Shell, Henry & Maier, 2005) while mastery goals are unaffected by the contingency conditions imposed upon the task. This raises the question of a dispositional goal orientation: a goal orientation that an adolescent adopts in relation to school experience, independent of contingency situations. Furthermore, does a particular dispositional goal orientation predict achievement outcomes?

Linnenbrink's (2005) experimental study with upper elementary students has provided evidence for an underlying dispositional goal orientation. Linnenbrink (2005) states results of the study point to the existence of "an underlying trait-like element to personal goals" (p.209) which, if mastery rather than performance approach based, supports adaptive behaviours and beliefs. These include persistence, task value, self-efficacy, help-seeking and positive affect within the classroom environment leading to higher achievement. In relation to students at-risk such a dispositional goal orientation might be substantially linked to achievement outcomes.

Contextual perceptions also seem to have an effect on student motivation. Research on school climate and culture indicates that schools as a whole reflect different goal emphases (Kaplan & Maehr, 1997; Maehr & Midgley, 1991; 1996). Perceptions of the school environment as emphasising task (mastery) goals were related to positive psychological well-being and disruptive behaviour was positively correlated with a school environment emphasising performance goals (Kaplan & Maehr, 1999); similarly, students who perceived performance goals in the classroom avoided seeking help from the teacher (Friedel, Marachi, & Midgley, 2002). On the other hand, in a longitudinal study it was found that a perception of mastery goals in the school environment predicted a mastery goal orientation in the students which in turn predicted higher achievement (Roeser, Midgley & Urda, 1996). This implies that the school exerts an influence upon motivational goals which may moderate influences acquired elsewhere, for example, in the home context.

Closely associated with goal orientation and achievement is self-efficacy. According to Bandura's social cognitive theory (Bandura, 1997), students' beliefs about their capabilities to master academic tasks, or self-efficacy beliefs, are strong predictors of their capability to accomplish these tasks. Bandura observed that, because individuals interpret the results of their experiences, the influence of knowledge, skill, or prior attainments, on subsequent performance is mediated by the beliefs that arise from such interpretations. Students' self-efficacy beliefs influence what students do with the knowledge and skills they possess. As a consequence, academic performance is highly influenced and predicted by a student's perception of what he/she believes they can accomplish. Self-efficacy beliefs act as determinants of behavior by influencing the choices that individuals make, the effort they expend, the perseverance they exert in the face of difficulties, and the thought patterns and emotional reactions they experience. In other words, the duration and quality of engagement of an individual with a given task is predicted by their self-efficacy. It is for these reasons that high self-efficacy is likely to promote higher academic performances whereas low self-efficacy is likely to undermine them.

Specifically, it has been found that children's perceived efficacy raises academic aspirations and final grades independently of their prior grades in the subject matter (Zimmerman, Bandura, & Martinez- Pons, 1992). Self-efficacy plays a role in facilitating successful achievement in mathematics (Pajares, 1996), predicting successful school to work transitions (Pinquart, Juang, & Silbereisen, 2003), and enhancing effort and academic success (Pintrich, 2003). Furthermore, the causal influence of self-efficacy upon academic performance has been repeatedly demonstrated in experimental studies showing that increases in self-efficacy were accompanied by increases in performance (e.g., Schunk, 1982a, 1982b, 1983a, 1983b, 1984a, 1984b, 1984c, Schunk et al., 1987; Schunk & Swartz, 1993) even when general mental ability was controlled (Pajares & Kranzler, 1995). Moreover, self-efficacy perceptions have been found to be correlated across subject areas (Borg, 2001). In view of Bandura's (1997) emphasis that one's mastery experiences are the most influential source of self-efficacy information, a mastery goal orientation is thought to be linked to enhanced levels of self-efficacy. Support for this concept comes from recent research findings from an experimental study demonstrating self-efficacy mediated the effects of mastery goals to enhanced performance in college students (Bouffard, Bouchard, Goulet, Denoncourt, & Couture, 2005).

Besides achievement, higher self-efficacy has also been linked with curtailing transgressive behaviour (Bandura, Regalia, Caprara, Barbaranelli, & Pastorelli, 2001), and preventing problem behaviours and depression in children (Bandura, Caprara, Barbaranelli, & Pastorelli, 1999). In brief, self-efficacy beliefs appear to facilitate both scholastic motivation and psychological well-being. Furthermore, in regard to psychological well-being, it seems that higher self-efficacy predicts adaptive coping behaviour (Bandura et al, 2003).

2.2.1.2 Coping strategies, optimism and academic achievement

The importance of coping strategies lies in their presumed role as moderators in the relationship between a stressful environment and subjective well being (Compas, 1987). Coping strategies refer to “cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p.141). Different types of coping are related to different constellations of well-being outcomes (Tero & Connell, 1984). Coping as a psycho-cognitive construct however, is far from simple to distil into dimensions and categories that discriminate among different coping strategies. This is because coping responses involve behaviours, cognitions and perceptions in which individuals engage when contending with their life-problems (Skinner, Edge, Altman & Sherwood, 2003). From analysing 100 assessments of coping, Skinner, Edge, Altman and Sherwood (2003) identified 400 ways of coping reported in the literature, concluding that there is little consensus about how to conceptualise or measure the ways of coping. Lack of consensus has slowed progress in the field and has made results relating to academic achievement difficult to compare across stressors or contexts. Compas, Connor-Smith, Salzman, Thomsen and Wadsworth (2001) concluded that “there has been little consistency in the application of these various subtypes of coping across different measures and studies...leading to considerable difficulty developing a cohesive picture of the structure of coping in childhood and adolescence”(p.5).

Because of the variety of coping inventories and dimensions that are used to assess coping in the field, the studies cited here adopt the researchers’ definitions of adaptive, positive or maladaptive coping, whether projective, denial or non-coping. There is broad consensus in the literature concerning coping style and outcomes, with approach or task oriented coping associated with better outcomes and less psychological dysfunction, while avoidance or projection coping being associated with greater psychological dysfunction (e.g., Higgins & Endler, 1995). Moreover, most of the coping inventories reported have elements of problem solving, adaptive strategies at one end of the spectrum with problem avoidance, wishful thinking, disengagement, rumination, denial or

projective strategies comprising the non-adaptive elements of coping at the other end (Skinner et al., 2003).

In relation to school and learning, positive coping strategies are linked to achievement, via a higher self-concept (Mantzicopoulos, 1990). For example, individuals who cope with a stressful event by attempting to change or prevent its recurrence are found to have a more adaptive pattern of outcomes than individuals who cope by blaming others or by denying the existence of the stressor (Mantzicopoulos, 1990). Tero and Connell (1984) found that positive coping strategies were associated with a mastery goal motivation and higher achievement while projection and denial strategies correlated negatively with a mastery orientation and achievement. Later longitudinal research linked positive coping strategies with positive classroom affect, itself linked to higher academic engagement (Kaplan & Midgley, 1999). Projective coping strategies were positively correlated with disruptive behaviour, itself strongly linked to underachievement, and negatively related with perceived mastery classroom goals in a two year study involving 968 upper elementary students (Friedel, Marachi & Midgley, 2002). It has been suggested that resilience however, is facilitated by adaptive coping strategies (Howard & Johnson, 2000).

Earlier work by Scheier and Carver (1985) has connected optimism with adaptive coping. It seems that optimism affects coping with stressful situations and therefore perseverance and by association resilience. Scheier, Weintraub and Carver (1986) found in undergraduate students that optimism not only related to problem-focused coping but also to the use of positive reframing and a tendency to accept the reality of the situation. While the definitions for the psychological dimensions of dispositional optimism and pessimism are not agreed upon (Chang, Maydeu-Olivares, & D’Zurilla, 1997) most definitions relate to biases in perception about generalised positive or negative expectations for events in the future (Aspinwall & Brunhart, 2000; Peterson & Bossio, 1991). Optimism has been defined as expecting a positive outcome, while pessimism has been defined as failure expectancy (Kassinove & Sukhodolsky, 1995).

Optimism was found to be negatively correlated with the use of denial and attempts to distance oneself from a problem, while pessimism was related to maladaptive strategies, such as problem avoidance, denial, withdrawal, and the failure to complete goals when under stress (Scheier et al., 1986). With regard to school achievement, Martin, Marsh and Debus (2001) found that success oriented students are optimistic and have a strong sense of self-belief. Martin (2002) conceptualizes self-belief in terms of expectancy, stating that “students who believe they are capable of mastering

their school work have positive expectations for success” (p.38). More recent work carried out by Martin, Marsh, and Debus (2003) in Australia, has linked defensive pessimism with self-handicapping in a model derived from a longitudinal study, suggesting that students engage in self-protective strategies in anticipation to poor performance as a result of negative self-schemas. There is also evidence that high school students are more likely to experience positive adjustment to the transition to high school if they are optimistic (Boman & Yates, 2001). More recently, using a sample of 263 14-19 year old adolescents, Chang and Sanna (2003) showed that optimism played a role in buffering the effects of stressors upon adolescents, protecting them from depression and hopelessness that arise in those of a more pessimistic disposition as a result of life stressors.

Although consensus is reached about the factors that lead to academic success or place a student at risk, a question arises with regard to why certain SES and structural variables place some students at-risk of failure while favourable psycho-cognitive constructs associated with academic success develop in other students. What mechanisms or processes transform sociological and structural variables into psychological constructs necessary for the development of successful school trajectories? It is known for example that positive psychological adjustment is related to parenting (Rutter, 2002). In some cases even the mechanism whereby positive adjustment is shaped is thought to be understood. For example, Jackson, Pratt, Hunsberger and Pancer (2005) used longitudinal data to confirm that caring parenting results in social and personal adjustment via the development of optimism. Similarly, coping strategies have been shown to be associated with family structure. In another study, Sherr, Bergenstrom & McCann, (1999) report that students cared for by both parents have less distress and fewer concerns affecting school work, home situation, stress for significant life events and better coping than students living with a single parent (Table 2.3). Working during the same period, Frydenberg (1999) found that family functioning processes influence adaptive coping which in turn is linked to positive academic outcomes.

Table 2.3 Comparison of children cared for by one or two parents

Variable	Mean score		significance
	Single parents <i>n</i> = 37.3%	Both parents <i>n</i> = 48%	
Age at referral	8.1	8.1	ns
Distress at referral	2.7	2.3	.0001
Distress after counselling	1.7	1.6	ns
Concerns affecting school work	2.6	2.2	.0001
home situation	2.8	2.5	.001
mood	1.6	1.7	.001
home life	2.8	2.1	.0001
behaviour	2.8	2.5	.0001
Coping with life events (1st)	1.6	1.8	.10
Distress by life event (1st)	6.0	5.2	.002

(Sherr, Bergenstrom, & McCann, 1999, p.278)

By contrast, problem behaviours have been linked to family instability and harsh parenting practices (Ackerman, Brown & Izard, 2003). There are substantial gaps in our understanding of the mechanisms whereby the sociological milieu is translated to psychological constructs to aid in positive developmental outcomes, but Bronfenbrenner's bioecological theory of development, a theory specifically concerned with these ideas, might help our understanding of development in different contexts.

2.3 Bronfenbrenner's bioecological theory of development

The links between psychological and sociological factors in the development and career trajectories of adolescents have been captured by Uri Bronfenbrenner's (1979) bioecological model. This model is most likely to ascribe the behaviour exhibited by an adolescent to interactions between the context (the school, the neighbourhood, the family) and the student. Behaviour is thus the product of the individual's way of perceiving certain contextual factors and responding to them.

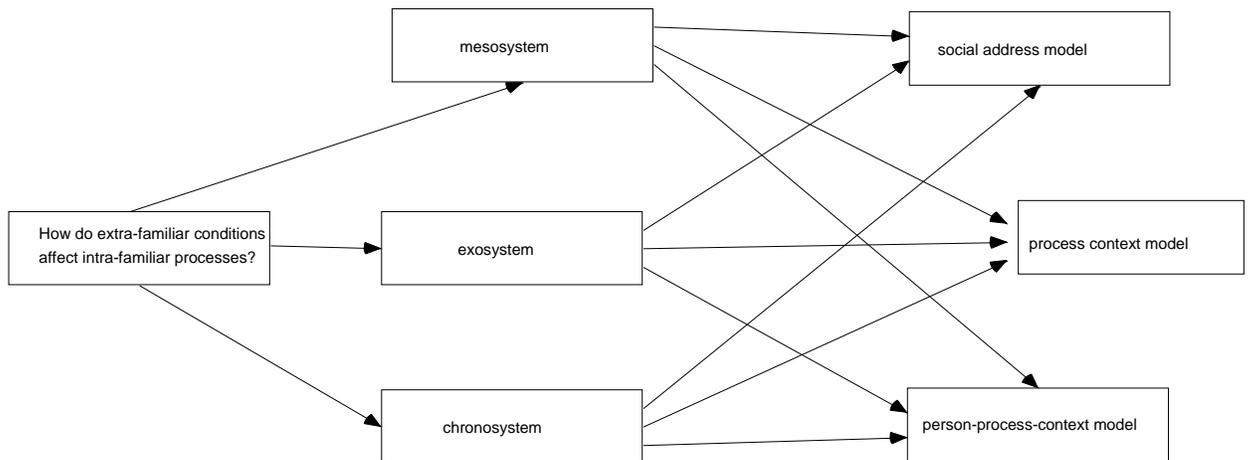
Bronfenbrenner's bioecological model (1979) (Figure 1.1, p.32) focuses on four nested systems, each influencing the individual's behaviour and development. The most distal of these is the *macrosystem*, designating the general cultural fabric of a particular society. Working inwards, the *exosystem* comprises the major institutions impinging on an individual; broadly speaking the political, economic, and religious institutions operating at various times. Next, the *mesosystem*,

includes the settings within which the individual personally participates, e.g., school, family and church, and comprises the interrelations among two or more microsystems in which the developing person participates. And, finally, the most proximal social influences occur in the *microsystem* through interactions *experienced* between other significant persons situated in the microsystem and the individual. For example, in considering a prospective job offer, a parent's decision will have ramifications in the child's mesosystem, while an argument with a sibling is a microsystem event. Bronfenbrenner's model is a dynamic one, where the different elements will vary in nature and significance across time and in the course of one's life (Bronfenbrenner, 1995). The basis of Bronfenbrenner's theory is captured by the proposition articulated by the authors, Bronfenbrenner and Morris, (1998):

Throughout the life course, human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction on the immediate environment are referred to as proximal processes. (p.996)

A critical aspect of the theory is the concept of *experienced* relations. "The term experienced is used to indicate that the scientifically relevant features of any environment include not only its objective properties but also the way in which these properties are perceived by the persons in that environment" (Bronfenbrenner, 1979, p.22). An emphasis on the phenomenological view of the developing person means that adolescent's perceptions of their environments constitute the most important influences upon their development. In other words, the aspects of the environment that have the most power to shape the course of psychological growth of an individual are those that have meaning to the person in the given situation. This has important research ramifications that require the exploration of the developing person's views. Bronfenbrenner advocates particular research models or approaches to study developmental processes (Bronfenbrenner, 1986). For clarity, I have organised and summarized these in Figure 2.1, with illustrations of each possible design approach below.

Figure 2.1 Research models conceptualized by Bronfenbrenner (1986)



Research might take on a particular approach:

- mesosystemic, for example, examining the influences of family and peer group upon school outcomes;
- exosystemic, for example, the effects of parental work conditions upon child outcomes;
- chronosystemic, for example, the effects of environmental changes, such as divorce, school mobility, in relation to changes within the adolescent over time.

Research questions may be answered by particular research models within the broad parameters set by the contexts above. A social address model might compare peer and family influences in single parent and blended families, or low and high SES contexts, on children's academic outcomes. A process-context model could explore the child rearing processes employed by working mothers in high SES contexts to those employed by working mothers in low SES contexts and relate them to child academic outcomes. Finally, in using a person-process-context model, a researcher might take into account the characteristics of a child, e.g., temperament, when examining the rearing processes employed by working mothers in high versus low SES contexts.

What evidence is there for Bronfenbrenner's bioecological theory of development? Over the last 40 years there have been hundreds of studies conducted to investigate the effects of school and home upon academic achievement. However, few studies have been conducted linking contextual factors or two strands of research, based on Bronfenbrenner's bioecological theory, explicitly acknowledging Bronfenbrenner's ideas or utilizing his research models above. Since the scope of

the present study is limited to the home and school microsystems and their relations with academic achievement, studies looking at peer effects are not reviewed.

2.3.1 Parenting influences on adolescent outcomes

A large proportion of studies have used the social address model described above, relating socio-demographic factors to academic and behavioural outcomes. For example, Duyme, Dumaret and Tomkiewicz (1999) reported that low scoring children's academic performance was increased significantly following a powerful form of environmental intervention, namely, adoption. This adoption raised the children's IQ without substantially altering individual differences, suggesting that the intervention effect was independent of genetic influences in IQ. Many of these studies have already been referred to in section 2.1 above. Yet, as Bronfenbrenner (1986) contends, the discovery of a relationship between social class membership and a particular expression of behaviour is a meaningless one, until the sociological variable is reduced to psychological terms. A consideration of the intervening processes or mechanisms through which environmental influences may operate is vital. Consonant with this view is evidence that children's behaviours are influenced more by what parents do in their interactions with them than by the parent's status in terms of income or other SES factors.

In relation to general developmental outcomes many studies have demonstrated the significance of parenting processes, a specific *microsystem* interaction (O'Connor, 2002; Davies & Windle, 2001; Buysse, 1997; Grusec & Goodnow, 1994). Parental influences upon adolescent behaviour have been well documented. Students whose parental monitoring is low or who experience neglectful parenting are at risk for problem behaviours and poor academic outcomes (e.g., Knutson, DeGarmo, & Reid, 2004; Repetti, Taylor, & Seeman, 2002; Ary, Duncan, Duncan, & Hops, 1999; Shonk & Cincchetti, 2001; Patterson, Forgatch, Yoerger & Stoolmiller, 1998; Deater-Deckard, Dodge, Bates, & Pettit, 1998; Steinberg, 1997; Kendall-Tackett, & Eckenrode, 1996; Yoshikawa, 1994 (review)).

Research findings have been consistent in showing that antisocial behaviour and depression, are associated with: a) persistent discord and conflict in the family, b) a lack of personal, consistent care giving over time (as is the case with institutionalised upbringing), c) lack of reciprocal conversation and play, and d) a negative social ethos or a social group that behaves in maladaptive ways (Rutter, 2002). Downey and Walker, (1992) demonstrated that children with one psychiatrically ill parent who were not exposed to parental maltreatment, in contrast to those who were, showed very low levels of externalising or internalising behaviour, both linked with lower academic achievement.

Findings suggest that parenting can buffer children at genetic risk and circumvent the processes that might otherwise lead from genetic predisposition to development of trait. Hence cultural or environmental effects can modify genetic predisposition. Moreover, cultural effects can affect psychological functioning.

Behavioural psychology researchers have consistently drawn links between perceived parental (maternal) messages about the self, world and the future and depression/anxiety in children (Forehand, Long, Brody, & Fauber, 1986; Stark, Schmidt & Joiner 1996) and antisocial behaviour and ADHD incidence in boys (Nigg & Hinshaw, 1998). Additionally, problem solving deficits and poor communication skills have been associated with parent-adolescent conflict (Grace, Kelley & McCain, 1993). This parent-adolescent conflict is in turn related to negative attributions made by mothers and teenagers. Parental, child-centered attributions for children's negative behaviour can ensue in a variety of problems. For example, a dispositional child-centred attribution about unfavourable child behaviour may affect:

- the parent's attitude towards the child and family (e.g., this is a bad child from a mad family);
- the parent's attitude towards themselves (e.g., I am ineffectual as a parent);
- the parent's behaviour towards the child;
- the parent's message to the child; and,
- the parent's level of psychopathology (e.g., depression ensuing from believing I have failed as a parent).

These variables seem to interact together and impact upon the child's attitudes and behaviours (Joiner, Wagner & Dineen, 1996). This in turn is implicated in a poor self-concept which impacts upon students at-risk (Australian Centre for Equity through, 2001; Batten & Russell, 1995; Rutter, 1985). Immature, oppositional child behaviour has been linked with dysfunction in the parent-child relationship and with insensitive and non-responsive care giving and insecure attachment in infants (Keenan & Shaw, 1994).

By contrast, positive parental attributions can lead to a heightened self-efficacy perception in children and in turn to a greater level of perceived agency. This is confirmed by Bandura, Barbaranelli, Caprara and Pastorelli, (2001). Using longitudinal data derived from questionnaires completed by parents, teachers and students in Italy, the authors concluded that children's perceived

self-efficacy, rather than their actual academic achievement, was the key factor in determining their career trajectory and choice of occupation (Bandura et al., 2001). Furthermore, the study demonstrated that parental aspirations for their children conveyed faith in their children's academic capabilities and translated to a higher perceived academic self-efficacy by their children. The authors also asserted that the "children's career trajectories were getting crystallized early in the developmental process" (p.183). Similar findings in Germany, (Juang, & Vondracek, 2001), the US (Davis-Kean, 2005; Ma, 2001) and Australia (Trent, Cooney, Russell, & Warton, 1996), support the notion that parental aspirations, beliefs and practices are powerful influences upon adolescent outcomes and trajectories, particularly for students at risk for school problems due to socio-demographic and child temperament factors (Supplee, Shaw, Hailstones & Hartman, 2004). These studies employed a process model design as advocated by Bronfenbrenner (1986).

Parental involvement is positively related to academic achievement when it takes the form of both *micro* system and *meso* system interactions: a) interest in grades, play activities, (Davis-Kean, 2005; Steinberg, 1997) helping with homework, though only if that is at the request of the child b) involvement in school functions, and, most importantly, c) high parental expectations and values (Davis-Kean, 2005; Paulson, 1994). A vast literature review conducted in Great Britain to assess parental involvement impact on pupil achievement established a strong case to support the notion that parenting processes, which are linked to maternal education, SES, family structure, and psychological health, mediate student achievement even when all the other factors shaping attainment are controlled (Desforges & Abouchaar, 2003). The authors conclude that good parenting, related to parenting style, influences academic achievement indirectly through shaping the child's self-concept as a learner and communicating high aspirations for the child. Sputa's review (2005) leads to similar conclusions.

Further studies designed to test specific parenting practices validate this idea. A process-context project was implemented in Cyprus, to test whether parental attributions predict parental involvement in their child's education and whether attributions and /or involvement had an influence on the child's achievement (Georgiou, 1999). Georgiou (1999) found that parental support is crucial to academic engagement. Using data collected from 473 upper primary students in 22 different schools, their parents and their teachers, Georgiou found that a) parental achievement attribution to the child's internal characteristics (e.g., effort) was positively related to actual achievement, while attribution to external characteristics (e.g., teacher help, peer affiliations) was linked to underachievement and b) parents who believed their role to be important in affecting

their child's achievement facilitated their child's interests. However, a "teacher at home" attitude and behaviour on the parent's part, involving unsolicited homework help, had negative effects on actual achievement. The latter finding is presumably connected to low ability messages that the child perceives from parents.

Jodl, Michael, Malanchuk, Eccles and Sameroff (2001) carried out an extensive investigation in the United States to confirm a model of cognitive pathways linking parental values, beliefs, and behaviours to 7th Year students' occupational aspirations. Data was collected by means of interviews and questionnaires from students and their biological parents, using a process-context research model. Jodl et al.'s findings support a model whereby there is direct influence of parental values and beliefs upon youth's values and beliefs, which in turn affect their occupational aspirations.

More recently, Guay, Senecal, Marsh and Dowson (2005) demonstrated that there is good empirical support for a link between the quality of relationship with parents and academic motivation. Using structural equation modelling techniques on data over 3 years, with a sample of 834, 17 year-old Canadian adolescents, they found that parenting processes predict academic motivation. Specific processes that have been shown to predict academic achievement in middle school children include reading activities, educational play and warm interactions, mediating parental educational aspirations for their children (Davis-Kean, 2005). Moreover, SES factors such as parental education and income exerted their influence via these parental practices (Davis-Kean, 2005).

Macrosystem/exosystem effects also appear to be mediated by parenting. Cultural, economic and historical contexts affect how parents behave and may accentuate or attenuate the effect of parental behaviour upon development. An interesting illustration of cultural effects upon career trajectories comes from studies examining Chinese Americans' occupations. Flynn (1991) cites IQ evidence showing that Chinese Americans of the post-war generation performed occupations that would require higher IQs if they were to be performed by White Americans. He posits that this is likely to be due to an environmental advantage related to cultural norms since Chinese families place a very high value upon career development.

Poverty is another macrosystem example whose influence on children's development is mediated through its effect on parenting (Conger, Ge, Elder, Lorenz, & Simons, 1994; Keenan & Shaw, 1994). Economic stress and disadvantage was found to increase parental punitiveness leading to adverse effects on the child. Similarly, Gutman and Eccles, (1999) showed that parent-adolescent

relationships and parental school involvement mediated the effects of financial strain and academic achievement using a chrono-system, process context design model for African and European American students in single and two parent families. Economic disadvantage also seems to mediate persistent externalising problems in children via harsh coercive parenting, and family maladjustment in a person-process-context designed study (Ackerman, Brown & Izard, 2003). Others have found that SES affects parental psychological well being, parenting practices and in turn children's well-being (Mistry, Vanderwater, Huston & McLoyd, 2002), while divorce has been found to impact upon boys' academic outcomes via the effects of maternal parenting practices (DeGarmo, Forgatch, & Martinez 1999).

Research on the relation between neighbourhood contexts and children's behaviour and personality has shown that neighbourhoods influence parents' behaviour moderating the effect of parenting practices on the child's development (Klebanov, Bruce-Gunn & Duncan, 1994). The effect of neighbourhoods on parental practices is evident in the finding that parents adjust their management strategies to suit the demands of the neighbourhood context within which they live (Furstenberg, Eccles, Elder, Cook, & Sameroff, 1999). Parents who live in dangerous neighbourhoods tend to be more controlling and restrictive, which protects the child's physical well-being but which also may have the unintended consequence of restricting the child's sense of autonomy. Furthermore, Darling and Steinberg (1997) have shown that the links between parental involvement in school and children's achievement vary as a function of the behaviour of other parents in the neighbourhood, with parental involvement having more potent effects within neighbourhoods with high concentrations of involved parents (Darling & Steinberg, 1997). Lastly, community, defined in Wentzel's study (1998b) as either military base or neighbourhood community, and ethnic group membership were revealed to be the most significant predictors of parental beliefs, which in turn significantly predicted parental aspirations for their children. These aspirations were found to be predictors of children's outcomes (Wentzel, 1998b).

There is substantial evidence to suggest that parental influence begins early and continues to be important right through to post-secondary levels (Horn et al, 2001) although, in a longitudinal study, Paulson and Sputa (1996) revealed that levels of parenting behaviours (demandingness, responsiveness, school involvement) drop between Year 9 and 12, except for values towards achievement which did not change.

2.3.1.1 Parenting style – a possible mechanism whereby parenting influences adolescent outcomes

Specifically how does parenting affect children's achievement and well-being? In reviewing empirical findings of the last 25 years on parent-adolescent relationships, Steinberg (2001) concluded that "it is not just what parents do that matters, but the emotional context in which they do it" (p.10). By this he was referring to the parenting style that some parents appear to adopt in managing their children.

Parenting that combines demandingness with responsiveness, or warmth and involvement with firmness and supervision of children's behaviour has been shown to promote healthy adjustment in children and adolescents (Baumrind, 1991a; 1991b). Baumrind (1971) used these two dimensions to derive a threefold parental style classification, authoritative, authoritarian and permissive. Maccoby and Martin (1983) subsequently transformed this typology by categorizing families according to their levels of parental demandingness (control, supervision, and maturity demands) and responsiveness (warmth, acceptance, involvement). Redefining parenting styles in terms of the interaction between these two underlying dimensions produced a fourfold typology. A primary difference between Baumrind's earlier model and Maccoby and Martin's refinement is that the latter differentiates between two types of permissive parenting giving rise to neglectful parenting alongside permissive. Authoritative parenting is characterized by a high degree of control and monitoring, nurturance and warmth and maturity demands. Authoritarian parenting by contrast involves a high degree of control and monitoring, but a low level of warmth and nurturance. The permissive styles of parenting are identified by either low monitoring and control and high warmth-nurturance (indulgent), or by low warmth and low monitoring (neglectful). Adolescent developmental progress is held back by unengaged or controlling practices, as might be characterized by authoritarian and neglectful parenting and facilitated by reciprocal interactions more typical of authoritative parenting (Baumrind, 1991b). Much research in North American families has confirmed the fourfold parenting style typology (e.g., Seifert, Hoffnung & Hoffnung, 2000).

Differences in the effects of parenting style were examined in a study conducted by Lamborn, Mounts, Steinberg, and Dornbusch (1991). Using self-report questionnaires on a sample of 10,000 American adolescents Lamborn et al. found that adolescents experiencing one of the different types

of pure parenting style showed significant differences in psychosocial development, school achievement, problem behaviour and internalized distress. Specifically, the sample of 1320 adolescents who perceived their parents to be authoritative scored highest on psychosocial competence and lowest on measures of psychological and behavioural dysfunction, while the reverse patterns were found for the 1521 adolescents whose parents were described as neglectful. Subsequent research has replicated the concept of authoritative parenting and its influence upon adolescent well-being and achievement using parenting typologies (e.g., Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Aunola, Stattin & Nurmi, 2000; Steinberg, Blatt-Eisengart, & Cauffman, 2006) or parenting dimension variables, (e.g., Heaven, Newburya, & Mak, 2004; Wolfradta, Hempelb, & Miles 2003; Fisher, Leve, O'Leary, & Leve, 2003; Leung & Kwan, 1998; Shucksmith, Henrly, & Glendinning 1995).

Parents are possibly the most important agents of child socialization and in particular academic socialization. However, as a formal construct academic socialization, or how or why authoritative parenting produces positive outcomes for children and adolescents, has received limited attention (Taylor, Clayton, & Rowley, 2004). According to Steinberg (2001) authoritative parenting is effective because it develops in children healthy self-regulation, receptivity to parental guidance and competence in social and cognitive realms, akin to self-efficacy.

Earlier research examining authoritative parenting and its promotion of academic socialization, (Steinberg, Elmer, and Mounts, 1989) established that characteristics associated with authoritativeness, (acceptance, behavioural control and psychological autonomy) predicted adolescent grades via their influence on adolescent work orientation- their aspirations, their enjoyment of work and their skill development. Pratt, Green, Mac Vicar and Bountrogianni (1992) validated their findings as they showed that authoritative parents were more effective tutors in helping with their children's homework and scaffolding skill acquisition. Parker, Boak, Griffin, Ripple and Peay (1999) observed that changes in the parent child relationship and home learning environment relating to increased parental understanding of play and ability to facilitate a child's learning predicted positive classroom behavioural outcomes for children in low SES groups. Later, Aunola et al., (2000) showed that authoritative parenting led early adolescents to use mastery oriented behaviour in achievement situations. Kumar and Hrudu, (2001) linked high parental problem solving support and informational support with higher mathematics self-efficacy and educational aspirations in Year 9 students. Supplee, Shaw, Hailstones and Hartman (2004) showed

that cognitive engagement and strategy instruction by authoritative mothers of low SES background boys predicted academic behaviours in their children 3-4 years later, supporting the hypothesis authoritative parenting behaviours influence children's academic strategies by modelling strategies for adaptive problem solving. More recently, Hong and Ho (2005) found evidence that parental communication of their aspirations for their children, enhanced children's own academic aspirations, and Eamon (2005) showed that Latino youths whose parents provided them with cognitive stimulation at home, were involved with them in and out of school and discussed school issues with them achieved higher mathematical and English grades.

Examining achievement goals in relation to parenting style, Gonzalez, Doan Holbein and Quilter (2002) found that perceived maternal authoritative was associated with mastery goals and perceived maternal permissiveness and authoritarianism were connected with performance goals in American high school students. More recently, Turner and Johnson (2003) showed that parental modelling of mastery related behaviours was positively linked with their child's mastery orientation over a year later. Thus empirical evidence implies authoritative parenting enhances academic achievement via academic socialization and skill building practices.

Other studies have found relations between parenting style and adolescent well-being and/or scholastic achievement: relations between parenting style and offspring's grade point average (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh 1987; Steinberg, Elmen, & Mounts, 1989), academic self-efficacy (Leung & Kwan, 1998; Purdie, Carroll & Roche, 2004; Ingoldsby, Schvaneveldt, Supple & Bush, 2004), and over time, parenting style has been deemed to be influential in either maintaining or increasing adjustment levels in students' as measured by delinquency reports, academic competence, and internalising symptoms (Lamborn, Mounts, Steinberg, & Dornbusch, 1994).

It has been claimed that parenting style transcends SES and family structure effects in Scottish adolescents to enhance academic outcomes (Shuckmith, Henry, & Glendinning, 1995) and that parenting styles affect achievement in Swedish adolescents through their effects on adolescent coping strategies and attributions (Aunola, Stattin & Nurmi, 2000). In Germany, high parental warmth, typical of authoritative and permissive parenting, was associated with higher active coping and lower trait anxiety, with each parenting style being related to a different level of depersonalisation, depression, anxiety and coping (Wolfradta, Hempelb, & Miles 2003). Meesters and Muris (2004) working in Holland found that higher perceived parental control, as might be

characteristic of authoritative and authoritarian parenting, was linked to higher adaptive coping strategies in 13-16 year old adolescents while passive coping strategies were linked to perceived rejection by both parents. In older Australian adolescents, an avoidance non-adaptive coping style which was linked to anxiety/depression was found to be buffered by perceived parental support (Gomez & McLaren, 2006). Moreover, prior research in Israel suggests that parental coping behaviour may serve as a model for early adolescent coping behaviour where the relationships between parents and offspring are characterized by high warmth and respect for adolescent autonomy (Shulman, 1993).

The parental monitoring and discipline dimensions of parenting style have been studied separately from warmth and involvement in relation to various adolescent outcomes. For example, Patterson, and Stouthammer-Loeber (1984) found that family monitoring and discipline levels have impacts upon the delinquency of boys, while Bronfenbrenner and Ceci (1994) conclude from their research that monitoring and strictness are more important predictors of school achievement than the environment (SES). Bronfenbrenner et al. (1994) collected surveys about parenting practices from adolescents with regard to parents being informed and setting limits on their children's activities out of their homes. Their data were divided according to the composition of family structure, i.e., biological parents, step father plus natural mother, or mother only, and also according to maternal education. The outcome variable was grade point average (GPA). Results indicated that at the lower level of monitoring social class and family structure differences were minimal but they rose markedly at the higher levels of monitoring to increase GPA.

On the other hand, student reports of parental behaviour suggest that lack of behavioural control leads to externalising problems whilst high psychological control methods lead to internalising problems in adolescents (Barber, Olsen, & Shagle, 1994). Moreover, less well monitored boys achieved lower grades than other children and had more reported behaviour problems, with stronger effects for working mothers than for homemaker mothers (Crouter, MacDermid, McHale, & Perry-Jenkins, 1990). As might be expected, the level of monitoring appears to be a function of family structure, with biological families having a higher level of monitoring than step families (Fisher, Leve, O'Leary, & Leve 2003). Adding to the above, in a Korean study self-perceived competence was predicted by family discipline and guidance (Lee, Super, & Harkness, 2003).

The extended negative impact of low parental monitoring and supervision was captured by a longitudinal project carried out in New Zealand (Fergusson & Horwood, 1999). Confirming that

parenting practices are major determinants of delinquent peer affiliations in adolescence, the authors identified the use of an authoritarian or coercive parenting style was implicated in the selection of undesirable peers, leading to affiliations that are related to poor school achievement and drop out behaviour.

Lastly, the term “perceived parenting” requires some qualification. Objective reality and reality as perceived by the child/adolescent may or may not be the same.

“Children’s views of themselves and their views of their environment may or may not be more or less congruent with assessment by independent observers, if that is a measure of objective reality which some may dispute. Nevertheless, it is their subjective reality that children respond to and that forms the basis for their development (*or non-development*) of resilience” (Richman & Bowen, 1997,p.104-105, italics added).

2.3.2 School influences on achievement

Another major context where developmental processes take place is the school microsystem. Recent longitudinal research has shown that the range of drop-out rates in Dutch schools varies from 12.6 to 32.2%, an effect independent of student intake characteristics (Luyten, Bosker, Dekkers, & Derks, 2003). These results support previous school effectiveness research findings that asserted students at-risk fare better in some schools than in others (Cooper, Drummond, Hart, Lovey, & McLaughlin, 2000). Certain schools in Britain consistently achieved positive student outcomes irrespective of the socioeconomic status, family structure, ability and other catchment variables of their populations (Cooper et al., 2000). Similarly disadvantaged Latino youths in the US who assessed their schools environments to be positive (e.g., interesting curriculum, safe school, knowledgeable teachers) were found to have higher mathematics and reading achievement (Eamon, 2005). This suggests that there were measures in place at those schools which catered for student needs, achieving retention rates greater than would have been predicted from the students’ SES variables alone.

In Australia, groups of students from disadvantaged and discordant homes were protected from dropping out of school because of, among other things, favourable school factors (Howard & Johnson, 2000). Pastoral care, school ethos and a proactive behaviour management system are some examples of protective school factors thought to be related to positive student outcomes. Although these results were not rigorously obtained, using before and after intervention measures of

outcomes, they suggest that, at least in part, a student may become at-risk because of contextual school factors (Johnson et al., 1997).

The exact nature of these positive school factors is however still unclear. Hierarchical linear modelling techniques were used by Luyten, Bosker, Dekkers, and Derks, (2003) to tease out the effects of school variables upon retention independently of students' characteristics. Organisational school variables, for example measures against truancy and drop-out, counselling, monitoring and evaluation, school rules, evaluation and support of teachers and teaching, parental communications and visits to the homes of minority students, as well as family, student and classroom teaching measures were assessed. Results showed that at the school level, only the percentage of students that had moved on to further education in the past was predictive of the overall dropout rate. In other words, powerful peer microsystem influences were at play. Luyten, Bosker, Dekkers, and Derks, (2003) sum up by stating:

Factors that relate to school organisation and processes seem to be less promising for understanding dropout than has been suggested in the literature. Although there is a fair amount of agreement in the literature about effective school characteristics, this does not mean that these effects are corroborated in each and every study. Most of the factors generally regarded as enhancing effectiveness have been examined in numerous studies, but in many cases no relation could be established. Only in meta-analyses over a wide range of studies have their average effects come up as positive. (p.396)

The links between a positive school context and positive school outcomes might be explained by more oblique association. In particular, students' perceptions of teachers and students' engagement with school tasks has been proposed to be the conduit between school variables and academic outcomes. Marks (1998) conducted a longitudinal study to assess Australian students' perceptions of the quality of school life. He found that there was a decline in Year 9 Australian students' general satisfaction with school between the '80s and '90s, with large between-schools differences in attitudes to teachers.

Later, Fullarton (2002) examined student engagement, a validated predictor of higher achievement. Fullarton found that school climate, a rating of the school on quality of teaching and learning by the students, had a significant impact on engagement for 8396 Year 9 students. More recently, using structural equation modelling analyses Khoo and Ainley (2005) showed that positive attitudes to

school, as measured by their view of teaching and curriculum opportunities, predicted staying on at school. Complementary results were reported in an Australian Centre for Equity through Education and Australian Youth Research Centre project (2001) on the perspectives of disengaged young people. They concluded that:

The major concern cited by these young people was their relationship with teachers and the way in which teachers treated them. Particular concerns included teachers ‘not listening’, students feeling that ‘the teachers did not want to be there’, that teachers were ‘arrogant’, ‘too busy’, and ‘not maintaining confidential comments and in bad moods’. (p.7)

Because their results were derived from interviews with young people identified as at-risk or already out of school, they represent a range of responses not limited by questionnaire boundaries set by researchers, but the students’ own ideas. The factors shown in Table 2.4 are those cited by students as being barriers to their staying on at school. These results are corroborated by overseas findings (Willms, 2003) and by the most recent Australian research (Khoo & Ainley, 2005).

Table 2.4 Cited barriers to staying on at school

Factor	Students still in school		Students out of school	
	Male	Female	Male	Female
School ethos and culture e.g.: Teacher relationships, Teaching methods, Student treatment	44%	40%	52%	41%
Subject choice and content	17%	13%	15%	13%
Organization and structure of school	14%	11%	13%	6%
Work load	12%	9%	7%	8%
Social environment: bullying, fights	3%	7%	10%	16%
Physical environment: resources etc.	3%	3%	-	-

(Australian Centre for Equity through Education & Australian Youth Research Centre, 2001, p.49)

2.3.2.1 The role of teachers

Teachers’ attitudes to students and students’ educational needs (Poulou & Norwich, 2000) and their responses (Gold & Ziegler, 1994; Hurrell, 1995) are subject to macrosystem or cultural influences.

An Australian study demonstrates this point very well. Whilst exploring resilient students among a cohort of disadvantaged students, Johnson, Howard, Dryden and Johnson (1997) discovered that the teachers' perceptions of resilient and non-resilient students were in some cases clouded by their own political and cultural standpoint. Johnson et al., (1997) write:

The term 'resiliency' was frequently imbued with teachers' largely middle class values about the desirability of children growing up to be happy, educated, socially well adjusted, non-violent, employed, 'married with kids' clones of their teachers. (p.9)

School factors which impede some students' successful school outcomes and force them to drop out are often associated with the relationship that a student has with teachers and the implicit understandings and meanings that this relationship imparts upon the student (Wentzel, 2002). Wentzel (2002) echoes Bronfenbrenner's and other researchers in the field when she states that "individuals construct beliefs about themselves and their social worlds as they interact with and experience others, and that these beliefs are the most proximal predictors of subsequent behaviour" (p.299). Hattie (2003) lends support to this view since he declares that teachers are responsible for 30% of the variance in achievement found among students. These considerable assertions have been inadequately explored with students at-risk.

Teachers have an influence over their students through more than mere educational instruction. Compelling evidence for the effects of teachers' biases upon student academic outcomes comes from a longitudinal study that looked at 98 teachers' expectations upon the academic outcomes of 1731 Year 6 students (Jussim & Eccles, 1992). Results showed that teacher expectations predicted changes in student achievement beyond the effects accounted for by previous achievement and motivation. In a review of literature commissioned by the Interim Committee for a NSW Institute of Teachers, Rowe (2003) contended that it is mainly through the quality of teaching that effective schools make a difference, emphasizing that of all possible variables impinging upon schools, quality of teaching appears to be most strongly related to student achievement. More recently, in a report reviewing findings from national and international evidence-based research, Rowe (2004) was vehement in his elaboration regarding teacher effectiveness:

Much of the traditional and prevailing dogmas surrounding 'factors' affecting students' experiences and outcomes of schooling throughout their primary and secondary years, especially socio-cultural and socio-economic factors, are now understood to be products of

methodological and statistical artefact, and amount to little more than ‘religious’ adherence to the moribund ideologies of biological and social determinism. (p.1)

And:

For example, whereas students’ literacy skills, general academic achievements, attitudes, behaviours and experiences of schooling are influenced by their background and intake characteristics, the magnitude of these effects pale into insignificance compared with quality teaching. That is, the quality of teaching and learning provision are by far the most salient influences on students’ cognitive, affective, social and behavioural outcomes of schooling – regardless of their gender or backgrounds and the schools in which they are enrolled.(p1)

Rowe quotes Hattie (2003) extensively to support his position. Reporting on “Teacher Quality” at the ACER Annual Conference, October 2003, Hattie asserts that teacher input accounts for 30% of the variance in student achievement. How does this come about? Hattie (2003) delves into instructional strategies but does not report on psychological effects.

Teacher-student relationships appear to have an impact upon whether students at-risk drop out of school but the mechanism operating to forge these relationships is not clear. One way whereby such positive relations may mediate successful academic outcomes is through the support students perceive. Kumar and Hruda (2001) examined the perceived social support that low SES, Year 8-9 students reported they received from their teachers and parents, and looked at links this had with mathematics efficacy, future aspirations, value of schooling and knowledge about the future. As hypothesised, low parental and teacher support led to low outcomes, whilst high perceived support led to high outcomes. Other studies also identify support as a significant factor in redirecting student pathways. In some case, this is done through communicating a positive belief in a student and their capacity to overcome at-risk tendencies.

Munns, (2000) looked at Indigenous students’ patterns of dropping out and students returning to education after a period of absence. Underscoring both aspects of the study was the element of support. In the first case, Indigenous students were supported by their families in their decision to drop out, through a rejection of the dominant culture’s values; in the latter case, the students returning to education did so as a result of the influence of appropriate support from a personal

friend, teacher or family member exerting their influence at a psychological microsystem level. Research by Lloyd and O'Regan (1999) reporting from Scotland, describes young women's reflections of their schooling. These young women, who were classified as having emotional and behavioural difficulties, cite the lack of support from home and school as the chief factor leading to dropping out of school.

The nature of support can take many forms, from economic to emotional or instructional (Guest, & Biasini, 2001). Students' emotional engagement to school can be enhanced through this perceived support. Perceiving an emotional connection to the school or teachers can be a protective factor that keeps students from dropping out (Fine, 1991; Mehan, Villanueva, Hubbard, Lintz, Okamoto & Adams, 1996). Conversely, students who have social difficulties and a negative attitude to school are more likely to drop out (Cairns & Cairns, 1994; Wehlage & Rutter, 1986). Teacher support has been associated with emotional and cognitive school engagement (Fredericks, Blumenfeld, Friedel, & Paris 2002; Marks, 2000), higher self-regulating and lower problem behaviour (Ryan & Patrick, 2001) higher engagement levels for boys than for girls (Furrer & Skinner, 2003) and higher interest in class (Wentzel, 2002) all factors associated with enhanced academic outcomes.

Is this support contingent upon some qualifying quality in the student? Studies have shown that teachers view emotional (Maras et al., 1999) and behaviour problems (Mavropoulou & Padelidu, 2002) to be essentially student centered and not necessarily dependent upon the classroom setting. Furthermore, some teachers apparently do not value an intervention upon a student's behaviour if this does not produce a concomitant increase in achievement level (Athanasidou, Geil Hazel & Copeland, 2002). Thus teacher support, which can be as influential as parental support in enhancing student outcomes (Wentzel, 2002), if lacking may instead produce negative outcomes in students who are most vulnerable because of a negative self-concept, socio-economic variables and family discord through negative psychological messages.

How prevalent is the teacher attitude that an intervention addressing behaviour should have a concomitant increase in achievement outcomes? Little research has been done in this field although a study of students at-risk in a Queensland high school, (Bradley, 1992) revealed some unexpected teacher views. It emerged that half the teachers of the school claimed that increasing retention rates was not desirable, and that interventions to improve retention were not the province of the school. For example, they stressed the importance of removing access to unemployment

benefits for school leavers, combining part-time work and study, and encouragement from parents to pursue school outcomes. Whether it is of consequence that those teachers who favoured early leaving in this study were mainly from the maths/science faculty and hence their opinion represented their views on student ability to cope with the demands of these subjects, was not explored. At the same time, the students in that study focused on both macrosystem and microsystem factors namely, the need for changes that were internal to the school for example, better teacher/student relationships, encouraging students to feel worth while, reducing competitive pressures, and increasing opportunities for student input in running the school. The lack of congruence in teacher views together with the students' focus on alternate retention factors makes it difficult to imagine that the population of that school would have worked effectively together and it is perhaps not surprising that the retention rate, Year 10 -12, was 50%, compared with 70% in neighbouring schools. In short, teacher attitudes may transmit negative messages that students internalize and subsequently act upon, particularly in the absence of other significant influences as in the case of students from compromised home backgrounds.

Because school and home factors have been shown to have independent influences upon adolescent outcomes, Bronfenbrenner has advocated the use of mesosystem design models to capture the simultaneous interactions and influences of these two important developmental contexts.

2.3.3 Studies employing a mesosystem rationale - the joint effects of parenting and school perceptions

The foregoing shows that there is much empirical evidence to support the notion that parenting practices (style) mediate the SES environmental effects to the child via psychological messages which translate to psychological constructs that the child uses to process experience and regulate behaviour. Similar processes transfer school influences to the student via teachers' attitudes, behaviours, and psychological messages. The next question that might be asked is: Which environment has the stronger effect and does perception in one environment influence perceptions in the other?

Mesosystem models are useful to study the interactions between children's multiple environments of functioning, assessing the extent to which the contexts containing the developing child are in conflict with or complement each other in terms of their relations with the outcomes of the child. These studies are based on the premise that congruence in student perceptions of the climate and

expectations across contexts would have an additive impact upon educational outcomes, whereas incongruence may result in less desirable outcomes (Bronfenbrenner, 1979).

Testing this idea, Epstein (1983) hypothesized that congruence of family and school authority structures would increase student school satisfaction and outcomes. Using longitudinal data obtained from 960 Year 8 students, Epstein found that not only are both school and home environments influential in supporting school outcomes but congruence between perceptions in the two contexts results in the highest level of positive attitudes about school and the highest academic success. Those students whose perceptions of the home and school environments were incongruent in regards to the measures Epstein collected (communication and decision making, autonomy) showed benefits from a more positive school environment compared to students whose perceptions were equally low in both environments. Epstein concluded that “family authority patterns can be more useful than SES, and school authority patterns can be more useful than global, school contextual measures, for understanding what families and schools do to influence student development” (p.121). The significance of these results is that school contexts may play a compensatory role for students whose home environment is not conducive to optimum developmental outcomes. Moreover, when the two contexts appear to emphasize similar outcomes and processes, students’ developmental processes are enhanced.

More recently, Vitaro, Brendgen, Larose and Tremblay (2005) looked at data linking kindergarten problem behaviour, SES variables, parent child-rearing attitudes and teacher management style and educational achievement by age 20 for 4,340 children. The results of this longitudinal study supported the role of parenting as a protective factor against dropping out of school but not the role of kindergarten teacher management style. This unexpected result might be related to the design of the study, which was based on parent and teacher reports rather than phenomenological reports by the children, or may be due to the instability of teacher influences, changing each year through primary school and beyond.

On the other hand Marchant, Paulson and Rothlisberg (2001) employed Bronfenbrenner’s conceptual mesosystem framework to examine Year 5-6 students’ motivations. They measured the students’ perceived parenting style and parental involvement in school functions as well as teaching style and school atmosphere and found that both predicted student’s academic achievement. Marchant et al. concluded that student motivation patterns mediated parent and teaching effects upon their achievement and that the students internalized parental values into their learning

repertoire. In a similar earlier study, Paulson, Marchant and Rothlisberg (1998) found that students who perceived congruent authoritative parenting and teaching styles accompanied by high parental involvement and a positive school atmosphere had the highest academic achievement. By contrast, those who perceived a neglectful parenting style and low parental involvement accompanied by an authoritarian teaching style and a negative school atmosphere, had the lowest academic achievement. They noted that results were not moderated by SES factors. Wentzel (1998a) independently found evidence that perceived support from teachers and perceived family cohesion led 6th Year students to have a higher interest in school. Later, Kumar and Hrudu (2001) measured the perceived emotional support that low SES, Year 8-9 students received from their teachers and parents. Results indicated that low parental and teacher support led to lower maths self efficacy, future aspirations and value of schooling, presumably since higher emotional support conveyed messages to the students that indicated congruence in educational values.

All the above studies have looked simultaneously at the independent effects of the two relevant microsystems upon student outcomes, but have not examined how perceptions in the two contexts might contribute to dropping out of school. Marjoribanks (2002) selected a cohort of 7,600 Australian Year 9 students to find out if the two microsystems made a significant contribution to their decision to stay on at school, after family SES was controlled. Students' academic self-concept, achievement in mathematics and English, occupational and educational aspirations was measured as well as their SES and their perceptions of their school and home environments. Of these students 14.2% had dropped out by Year 11. Marjoribanks (2002) found that adolescents from middle social status backgrounds and Asian families were more likely to stay on at school than students from lower SES contexts and Anglo Australian families, with boys being more likely to drop out of school than girls. Academic achievement and aspirations had the largest independent links with the decision to stay on at school. The effects of home and school perceptions were found to have no mediating influence between SES and outcomes, and the link between the two microsystems was not analysed for those students who either dropped out or stayed on at school. As such the results of the study, albeit using very sophisticated statistical methodology, represent something of a departure from previous findings.

Marjoribanks (2003) conducted a follow-up study using 7248 Year 9 Australian students utilising the same measures as in the previous study, except for academic achievement, but obtaining the final data, level of academic attainment, when the students were 20 years old. Modelling the data longitudinally, he found once again that educational aspirations during Year 11 had the most

significant association with academic attainment, as did being Asian and a girl, while home and school perceptions were not significant predictors of academic outcomes. The contribution of SES to educational attainment was much smaller than that of the other three factors. Once again there was no examination either of mesosystem interactions or interactions between the microsystems or other predictors of academic outcomes such as coping strategies and achievement goals.

In a more recent study, Hung and Marjoribanks (2005) used a sample of 261, 11 year old Taiwanese children to assess their home and school perceptions in relation to their academic outcomes. Hung and Marjoribanks used structural equation modelling (SEM) techniques to measure the children's academic aspirations and their self-concept and relate them to the other variables in the study. Results showed that family perceptions, which were related to SES measures, independently predicted students' academic achievement, but teacher relationships had no significant link to achievement. However, student self-concept was highly predicted by teacher relationships and parental perceptions. Results do not explore the relationship between student self-concept and achievement or the relationship between student aspirations and achievement. The study strongly implies that psycho-cognitive student constructs are significantly influenced by their perceptions of their proximal learning settings.

Although the cited studies have shown important relationships between the home and the school and student outcomes, no study appears to have examined the relations between perceptions of the two proximal learning settings, and their relations with other psycho-cognitive constructs such as achievement goals, coping strategies and optimism, and achievement.

2.4 Resilient children: the evidence

The emergence of resilient students from the SES niches occupied by students at-risk is an important phenomenon, one noteworthy of careful examination. For in order to address the needs of students at-risk, the factors that promote academic achievement in resilient students need to be better understood. Resilient students are sometimes viewed as those "outlying performers within an at-risk group" (Catterall, 1998, p.307).

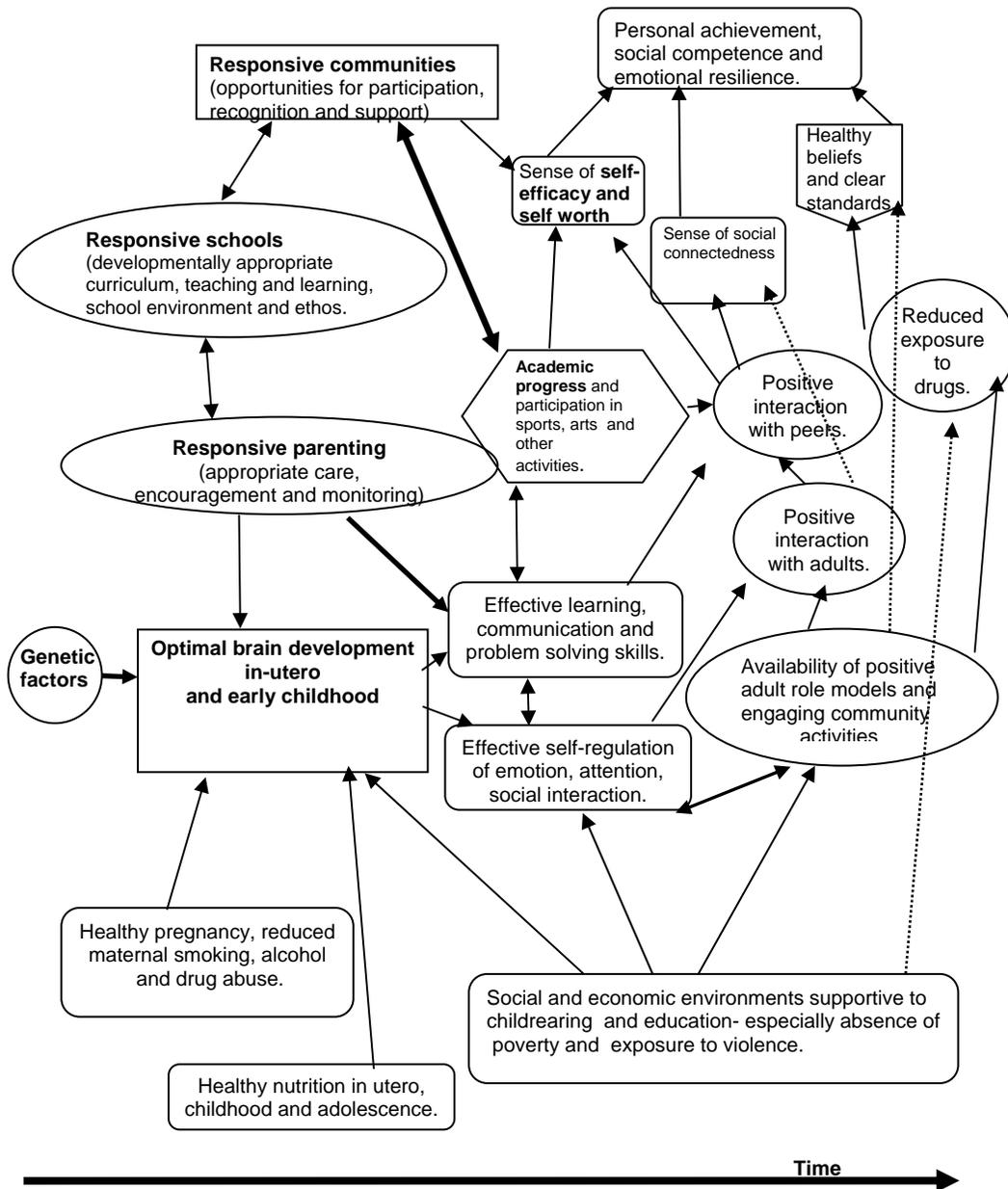
What evidence is there in the literature for the impact of psychological factors upon academic outcomes for students identified as at-risk? The answer is that research in this area is ongoing. One way of discerning issues connected with academic risk development is to look at resilient children studies, since these illuminate processes used by children and adolescents to overcome disadvantage and succeed, the definition of resilience. For example, Supplee, Shaw, Hailstones and Hartman

(2004) showed that maternal reading and cognitive strategy instruction predicted children's academic and emotion regulation outcomes after controlling for SES, IQ and child temperament factors. Factors such as personality characteristics, environmental characteristics, caring parenting behaviour and family cohesiveness, school/home relations, mentoring by teachers, involvement in community activities, and sports and community support networks are commonly tied to resilience. Such pathways to resilience are thought to be multifactorial, as illustrated in Fig. 2.2 (Silburn, 2003).

The complexity of the figure arises from the interaction between biological, (e.g., genetic factors) environmental, (e.g., absence of poverty) and social factors, (e.g., responsive parenting) impinging upon development, in linear and reciprocal ways. For example, Amlund Hagen, Myers, and Mackintosh (2005) studied the behavioural profiles of 65 6-12 year old at-risk children of incarcerated mothers and found that children who perceived social support had fewer externalising or internalising behaviour problems.

Many parallels exist between Silburn's (2003) conceptualisation of resilience development and Bronfenbrenner's conceptualisation of development expounded in his bioecological theory. While Bronfenbrenner is not explicitly cited by Silburn, elements of his bioecological theory appear in Silburn's schema since both contain contextual factors thought to affect developmental processes as well as interactions between contexts brought about by human agents.

Figure 2.2 Pathways to resilience



Note: From *New directions in Australian suicide prevention*, by S. R. Silburn, 2003, Keynote address to the 1st Asia-Pacific Injury Prevention Conference and 6th National Conference on Injury Prevention and Control, Perth, Western Australia, 16-18 March. Adapted with permission.

Resilient children are those children predicted to be at risk of dropping out of school, delinquency and other negative life outcomes on the basis of individual, family and environmental characteristics (Werner & Smith, 1982). These predictions are confounded, however, through the intervention of some protective factors (Howard et al., 2000; Gordon Rouse, 2001; Horn & Chen,

2001). “These protective factors involve not only the immediate family, but also the peer group, the school and the broader social community” (Rutter, 2002, p.8).

The notion of protective factors emerged from longitudinal developmental studies looking at the incidence of disease and psychopathology (Rutter et al., 1998). It was discovered that even with prolonged severely negative experiences, there is a huge difference amongst children in their responses. In general, there are nine factors thought to be protective when resilient children at-risk are compared to other similar non-resilient groups. These factors, summarized by Rutter, Giller and Hagell, (1998) include:

- A lack of genetic vulnerability;
- A higher IQ;
- Temperament and personality features that elicit positive responses from other people;
- The maintenance of a stable warm relationship within the family with at least one family member in the context of overall family discord and conflict;
- Strong parental supervision;
- Positive experience at school, operating by enhancing self-esteem and self-efficacy;
- A supportive, pro-social peer group;
- Experiences that open up new opportunities through altered social or school circumstances; and,
- An attitude of mind that involves a sense of self-efficacy, a positive approach to planning, and social problem solving.

The authors further suggest that these protective processes are aided by the following attributes:

- A reduced sensitivity to risk factors;
- Effective social problem solving e.g. avoidance of drug /alcohol use in relation to stressors;
- Higher self-esteem and self-efficacy developed through supportive personal relationships and responsibility for task accomplishments, sometimes referred to as agency;
- An achievement/opportunity oriented approach; and,
- Positive cognitive processing of negative experiences (Rutter et al., 1998).

Support for these assertions can be found in studies where it has been observed that one or more of these protective factors has been at work to establish positive outcomes for students at-risk or, due to their absence, dropping out or other at-risk behaviours result. For example, in a recent qualitative study in Australia, Howard et al., (2000) reported that a positive future orientation, a sense of autonomy and personal agency in the control of the future, and a sense of connectedness to school and community identified those students who were resilient in a group of 71 at-risk students nominated by their teachers. By comparison, the non-resilient group of the cohort constantly expressed a sense of helplessness and a victim orientation towards life's challenges. Similarly, a lack of agency or choice suggesting low self-efficacy was reflected through in-depth interviews in the study by Solomon and Rogers (2001).

An important issue arises at this point, that of mechanism of operation. Whilst protective factors have been identified and associated with resilience, the mechanism by which their influence operates is not known (Rutter, 2002). Many possible theories have been proposed. Rutter (2002) asks:

Do the mechanisms involve cognitive and affective sets, self-concept and internal working models? Do they come about through effects of styles of interpersonal interaction? Are they brought about through effects on individual behaviour that predispose people to act in ways that engender later stresses or adversity? Or are the effects a consequence of changes in the brain structure or function? (p.11)

Separating the effects of poverty and disadvantage from psychological processes is important when trying to assess resilience as illustrated by Barnett, Vondra and Shonk's (1996) research. They attempted to distinguish the effects of poverty from those of maltreatment in a group of 6 and 7 year olds and also in an older, 8-11 year old, group. They concluded that both maltreated and non-maltreated children exhibited maladaptive motivational orientations towards school work and poor achievement outcomes, confirming that poverty affects achievement outcomes. Furthermore, maltreatment disrupted psychological processes such as self-perception, as the maltreated group's self-perception relations with school functioning were in the opposite direction to that found in the non-maltreated group whose perceived competence was linked to teachers' ratings of their effort, motivation and grades. The study suggests that the determinants of academic motivation and engagement are dependent upon home contextual factors. Perhaps in considering motivation and its educational ramifications, developmental, genetic and environmental factors need to be identified

and their impact assessed separately (Rutter, 2002). There is a gap in the literature in this area. Complicating matters further, are the phenomena of sensitization and steeling (Rutter, 2002). This refers to the finding that stress can make individuals more sensitive or more vulnerable to later psychosocial stresses, but it is not known whether this is a function of the individual or the stress experience (Rutter, 2002).

When considering academic resilience, the importance of motivation is upheld by empirical findings gathered through studies which report on resilient children (e.g., Finn & Rock, 1997; Gordon Rouse, 2001; Rutter et al., 1998). Empirical evidence also suggests that motivational patterns of resilient students have ethnic variations. Gordon Rouse (2001) found resilient African Americans differed from non-resilient African Americans in their self-efficacy beliefs whilst resilient Hispanic students had higher self-efficacy beliefs but lower belongingness needs than non-resilient students. The study however, involved a sample of only 64 students (Gordon Rouse, 2001).

Diverse empirical studies show that parenting is important in facilitating the development of protective psychological constructs as cited earlier. Other studies have shown that ego resiliency, ego control and the ability to form a positive relationship with an adult outside the immediate (risky) family predicted academic resilience in maltreated Latino children (Flores, Cicchetti, & Rogosch, 2005); social support and positive problem solving coping strategies (Reis, Colbert & Hebert, 2005; Dumont & Provost, 1999; Seifert, Sameroff, Baldwin & Baldwin, 1992) and having an internal locus of control and high academic aspirations (Capella & Weinstein, 2001) and higher perceptions of family/peer support, teacher feedback, positive school perceptions (Catterall, 1998; Gonzales & Padilla, 1997; Waxman, Huang & Wang 1997) all support academic resilience. Waxman, Gray and Padron (2003) reviewing the academic resilience literature note, however, that most of the research is descriptive comparative or correlational with few experimental studies conducted. Experimental studies are needed to tease out causal influences.

Another important area of concern in relation to resilience or risk is peer group influence. Peer group influence has been the subject of much socialization research in the past. However, more recent findings suggest that much of what appears to be peer influence is actually the end result of familial influence at an earlier point in the child's development. Parke and Bhavnagri (1989) suggest that parents influence children's peer experiences in two general ways. During primary

school parents propel their children toward certain peers by managing their youngsters' social activities (which has the effect of increasing contact with some peers and diminishing it with others) and during both childhood and adolescence, parents actively steer children toward certain friends and away from others (Parke & Bhavnagri, 1989). In addition, throughout the child's development parents indirectly influence the child's attitudes, values, personality, and motives, which in turn affect the child's interactions and affiliations with particular peers (Brown, Mounts, Lamborn, & Steinberg, 1993). Most compellingly, adolescents differ in their susceptibility to peer influence, and one of the most important contributors to this differential susceptibility is the quality of the parent-child relationship. Adolescents whose parents are authoritative (i.e., responsive and demanding) are less swayed by peer pressure to misbehave than are adolescents whose parents are permissive (Devereux, 1970) or authoritarian (Fuligni & Eccles, 1993). Indeed, adolescents from authoritative homes are more susceptible to pro-social peer pressure (e.g., pressure to do well in school) but less susceptible to antisocial peer pressure (e.g., pressure to use illicit drugs and alcohol (Mounts & Steinberg, 1995). In other words, the particular peers a youngster selects as friends and the extent to which he or she is susceptible to their influence are both affected by parenting.

A forceful illustration of indirect effects of parenting comes from research on the development of antisocial behaviour and aggression, both implicated in dropping out of school (DeBaryshe, Patterson & Capaldi, 1993; Dishion, Patterson, Stoolmiller, & Skinner, 1991). Researchers have confirmed that adolescents' involvement in antisocial activity is influenced by their relationships with antisocial peers but that the chain of events that leads some adolescents into antisocial peer groups begins at home during childhood. Significant to this study, the links in this chain include exposure to harsh and coercive parenting, which contributes to the development of aggression and to academic difficulties in school.

Support for Bronfenbrenner's theory of development emerges from a paper reporting on successful factors associated with exclusion prevention for students at-risk. After a period of intervention through multidisciplinary behaviour support teams, pupil referral units and other similar support projects, Hallam and Castle, (2001) concluded that parental support and involvement, student agency and responsibility, and whole school staff support resulted in the greatest reduction in exclusions. While the impact of each factor was not teased out, and the possibility that separately none of the measured factors reduced exclusion was not examined, results provide evidence for Bronfenbrenner's theory. In particular, they provide evidence for the premise that if students

perceive congruence of values and attitudes in the mesosystem, effects will combine to produce stronger outcomes (Bronfenbrenner, 1979).

2.5 Summary and Research Questions

This review has included both SES and psychological factors impinging upon the academic success of students. Specifically, SES variables such as poverty, parental education, ethnicity, living in a rural area and gender predict students dropping out of school. At the same time, studies on resilient students have shown that these socioeconomic disadvantages can be overcome with the help of protective factors. Protective factors are associated with parenting and teacher-school related effects. These are, in turn, thought to be established by psychological factors transmitted from parents and teachers to adolescents. They become manifest in adolescents as adaptive coping, and optimistic orientations, leading to heightened motivation. Motivation is considered by scholars to be the key to educational success and retention in schools.

As educators it is difficult to effect change by constructing interventions that address either biological or SES factors impacting upon motivation. With the exception of general health which can be associated with SES, biological or inherited attributes are largely beyond external control. Similarly, SES variables, which have been found to act as re-enforcers to motivational patterns, are to a large extent unable to be altered. Psychological constructs however can be molded. For example, it was found that student motivation to learn has acted as a protective factor in a group of adolescents growing up in poverty (Strobel, 2002). To what extent the same children would exhibit the same level of motivation in a more affluent setting, and hence to what extent this is an inherited quality, cannot be examined for obvious ethical reasons. The possibility exists nonetheless that poverty may enhance or diminish the motivation of these children depending on other intervening factors such as parenting.

Human behaviour is thought to be influenced and sculptured by social interactions (Bandura, 1986). Unless living in isolation, humans are usually subject to social interchanges throughout life. These interactions are deemed to be instrumental in bringing about various attitudes and values which are internalised through psychological means and reinforced over time by societal norms (Cooper, Smith & Upton, 1994). In other words, cultural factors are internalised by psychological means which are, in turn, refined by cultural factors. Thus, like a biological ecosystem, there is constant interaction between the environment and the organism. Rutter (2002) views the at-risk behaviour repertoire as culturally determined but, in common with other human behaviour, psychologically

mediated and reinforced. This is also the basis of Bronfenbrenner's bioecological model of development. Psychological phenomena act upon children early in life through their attachment to their parents or carers, and circumstances, i.e., SES factors, continue to affect psychological development indirectly through alterations in self-concept, aspirations, attitudes to learning and styles of interaction with other people (Rutter, 1985). With respect to the last point, the direction of influence could be from the other person to the child or the other way, or an equilibrium resulting from bi-directional effects (Rutter, 2002).

Values might be transmitted consciously by parents (Jodl, Michael, Malanchuk, Eccles & Sameroff, 2001; Bandura, Barbaranelli, Caprara, & Pastorelli, 2001) and teachers (Wentzel, 2002; Wentzel, 1997) and, via these, support and a sense of agency are perceived and constructed by the child. Based on this acquired value system, and on anticipated support from significant others, the child/adolescent constructs beliefs about the self and their social world as they experience interactions with others, and these beliefs are predictors of behaviour and future pathways (Harter, 1990). These pathways, leading to performance, are shaped by motivation.

The proposed analysis is guided by the bioecological theory of human development conceived by Bronfenbrenner and Ceci (1994) and Ceci et al. (1997). They proposed that to explain variations in developmental outcomes it is necessary to examine and understand relationships among distal family contexts, as well as individual characteristics, proximal learning settings such as families and schools, and measures of those outcomes. The nature of the relations between distal contexts and outcomes was emphasized by Ceci et al. (1997) who stated:

The efficacy of a proximal process is determined to a large degree by the distal environmental resources. Proximal processes are the engines that actually drive the outcome but only if the distal resources can be imported into the process to make it effective. (p.311)

The appeal of the bioecological theory lies in the promise that it can distinguish different contextual influences bearing upon behaviour. In using a mesosystem process-context research design to compare typical, resilient and students at-risk, something which does not appear to have been done before, the contextual differences bearing upon student behaviour might become more apparent.

The current economic climate places enormous social, political and cultural pressures upon young people to attain higher educational standards in order to gain employment. The level of consensus regarding the importance of school education as an essential element of both micro- and macro

economic reform in meeting the constantly changing demands of the modern workplace has never been higher (OECD, 2001; 1993; 1989; 1989). There is an urgent need to explore the role played by psychological variables, such as goal orientation, self-efficacy and optimism/pessimism upon students' achievement outcomes. The literature reviewed indicates students' perceptions of parenting and teaching should also be explored. This becomes necessary if one is to gain a better idea of the factors at play in supporting resilience or dropping out of school.

The research questions arising from this review are addressed by way of identifying, comparing and contrasting three groups of students: at-risk, typical and resilient. Research questions are grouped into two categories:

A. Verification of current ideas about students at-risk in relation to students in North Queensland and relationships between the variables/cognitive constructs:

- 1) How do students at-risk differ from other students in relation to socio-economic, family structure and ethnicity variables?
- 2) Are there significant differences in the motivational goals, coping strategies, perception of the quality of school life, optimism and parenting perceptions between the three groups?
- 3) Do academic outcomes correlate with other variables such as motivational goals, coping strategies, school perceptions and challenging behaviour in the three groups?
- 4) Does perceived parenting style underpin other constructs such as optimism, motivational goals, coping strategies school perceptions and achievement outcomes in the three groups?
- 5) Are there mesosystem interactions evident in the three groups?
- 6) Are socioeconomic status (SES) variables linked to achievement outcomes directly or via their effect upon other variables?

B. The generation of particular meanings and attitudes of specific participants to build and validate Bronfenbrenner's model of the learner.

What, if any, differences emerge in the subjective beliefs, values and perspectives in participants typical and atypical of their group membership.

Chapter Three describes in greater detail the specific rationale and methods that will be employed in addressing these questions.

Chapter Three: Methodology

“The method must follow the question. Campbell, many decades ago, promoted the concept of triangulation- that every method has its limitations, and multiple methods are usually needed.” -

Gene V. Glass eulogizing pioneering methodologist Donald T. Campbell, quoted in Tashakkori and Teddlie (1998, p.22).

Introduction, research questions and design

Chapter One described the research focus of this thesis and outlined the rationale for using Bronfenbrenner’s bioecological theory as a framework underpinning the research and for including resilient students by way of a comparison between them and students at-risk. The survey of the literature, Chapter Two, examined in some detail areas pertinent to the academic socialisation of students, as well as some constructs that students employ which are linked to achievement outcomes. The chapter culminated in a set of research questions. Chapter Three describes the methods deemed most suited to address these research questions.

In keeping with Bronfenbrenner’s bioecological theory which places emphasis upon contextual factors in development, Chapter Two concluded with a set of questions best addressed by a comparative approach. Therefore this is a comparative study of three groups of students: those deemed to be at risk of not completing their secondary education, resilient and typical students. The indicators used to identify students at-risk and resilient students are self-reported achievement outcomes and socio-economic variables.

The specific research questions of the study are grouped into two categories:

A. Relationships between the variables/cognitive constructs measured by the survey instrument, leading to verification of current ideas about students at-risk in relation to students in North Queensland:

- 1) How do students at-risk differ from other students in relation to socio-economic, family structure and ethnicity variables?
- 2) Are there significant differences in the motivational goals, coping strategies, perception of the quality of school life, optimism and parenting perceptions between the three groups?

- 3) Do academic outcomes correlate with other variables such as motivational goals, coping strategies, school perceptions and challenging behaviour in the three groups?
- 4) Does perceived parenting style underpin other constructs such as optimism, motivational goals, coping strategies school perceptions and achievement outcomes in the three groups?
- 5) Are there mesosystem interactions evident in the three groups?
- 6) Are socioeconomic status (SES) variables linked to achievement outcomes directly or via their effect upon other variables?

B. The generation of the meanings and attitudes of selected students (case studies) from the participants' point of view, in other words, the *emic* (Pike, 1966) perspective of selected students, to build and validate Bronfenbrenner's model of the learner:

What, if any, differences emerge in the subjective beliefs, values and perspectives between participants from the three groups.

The study design is non-experimental, cross-sectional and associative. In order to address the research questions, it is conducted sequentially: a quantitative phase, using a survey instrument, is followed by a qualitative phase during which selected students, identified through their survey responses, are interviewed to explore their views as outlined above. Examination of social perception using traditional, quantitative strategies may produce an incomplete picture. Perception is subject to too many uniquely individual experiences compounding the wider, culture specific experience of the individual. To better understand and explore the influences acting upon these cognitive constructs an interpretive approach and qualitative data generation is also required. This way the overlapping ecological systems bearing upon human perception may be distinguished (Bronfenbrenner, 1979). A mixed methods approach is deemed most appropriate to explore secondary school students' perceptions.

3.1 Chapter purpose and overview

Chapter Three consists of four main sections. The first section, **3.2**, details the rationale prescribing mixed methods, arguing from the perspective that human behaviour is context bound. The second section, **3.3**, offers an outline of the philosophical ideas supporting the use of mixed methods in research. Examples and a description of mixed method studies follows, **3.4**, setting the stage for the

procedures adopted in the current study. The final section, **3.5**, describes the sequencing, sampling, instrumentation and analysis strategies used, concluding with the ethical protocol employed, **3.6**.

3.2 Rationale determining the research methods

In seeking to identify differences between the three groups of students with regard to school achievement, the psychological constructs of self-efficacy, motivational goals, coping strategies and expectancy orientation characteristics held by the students are examined, as well as their perceptions of the quality of school life and parenting. As such, it may be described as developing within a (social) psychology framework. To expand on the perceptions gathered from the students, Bronfenbrenner's bioecological theory is used. In doing this it is hoped that any interactions between parenting perceptions, school life perceptions and their influence on other constructs will be uncovered. Given these aims, what is the best method to gather such data?

The sources of the information for the study are the students themselves. This is considered to be most appropriate since researchers agree that individuals are best placed to answer questions pertaining to them. For example, Korchin and Schulberg (1981) suggested "more respectful attention to the person's own views of his or her character, problems, and situation than simple reliance on external measures (whether they be objective tests, projective techniques, or behavioural observations)" (p. 1156). Rorer and Widiger (1983) concur: "In general, if you want information from someone, the best way to get it is to ask them" (p. 433). Later researchers have found that self-report perceptions of parenting are more accurate and predictive of adolescent behaviour than parents' self-reports of their parenting since feeling monitored or loved is a subjective experience (Paulson, 1994; Gonzalez, Cauce & Mason, 1996; Purdie, Carroll & Roche, 2004; Leung, McBride-Chang & Lai, 2004).

Many psychologists have employed quantitative research methods (McGartland & Polgar, 1994). This is because psychology has been dominated by a positivist/empiricist tradition wherein classical hypothesis testing has been a central research drive. Karl Popper's (1959) theorizing underpinning this view assumes that there is an independent reality and some form of truth awaiting discovery by the researcher working through a hypothetico-deductive model (Breakwell, Hammond & Fife-Shaw, 2000). This view supposes that human behaviour is predictable from its antecedents and that each behaviour has a discrete, distinct cause. Waszac and Sines (2003) note, however, that psychological research in the last few decades has rarely fit the positivist profile. Prediction of

behaviour is probabilistic at best and then only at an aggregate level and relativity of perceptions has been a major component of psychological theory and research (e.g., attribution theory, social cognition, social comparison theory). Furthermore, behaviour has been assumed to have multiple causes, often affected by differential perceptions of the environment”(Waszac & Sines , 2003).

Clark (1998) argues that “positivism employs an overly reductionist view of the person in its quest for universal mechanistic rules which are culturally independent” (p.1245). Ironically, it was positivist experiments on the effects of culture and context that revealed the power of social factors in determining behaviour. These include experiments such as Asch’s (1951) study on obedience and conformity, which showed that peer pressure could make a person lose faith in their own perceptual judgement; Milgram’s (1963) experiment showing that ordinary people execute the cruel orders of those in authority regardless of whether the orders conflict with their conscience; and Zimbardo’s (1971) Stanford Prison Experiment demonstrating the ease with which the roles of prisoner and warder are adopted and performed by undergrad students, to the extent that their former identity is relinquished.

This chapter will not undertake a defence of the positivist, quantitative approach. Kuhn (1970) studied the value system of scientists and concluded that ‘the most deeply held values concern predictions” and “quantitative predictions are preferable to qualitative ones” (p.184-85). “Hard data” are ranked above “soft data”, where hardness implies numbers and statistical treatment. Eberstadt, Eberstadt and Moynihan (1995) have described the preoccupation with statistics the tyranny of numbers, giving rise to a bias against qualitative data in the scientific world. Positivist, empirical, quantitative approaches are well established requiring little or no defence for their use. This is especially the case when a sequential mixed method design is employed, where the quantitative data are used to identify how two or more groups compare on selected variables (Cresswell, Plano Clark, Gutmann, & Hanson, 2003). Support for the use of interviews for a constructivist approach is, however, appropriate.

3.2.1 Why interview? The need for a constructivist approach to elaborate the surveyed perceptions of students

Participant survey responses constitute the data of the research. In a sense, they are data gathered on behalf of the researcher by the participant over a period of time. They are stated perceptions based on observations and reflection. The scientist wishing to examine these perceptions is trying to establish the way they came into being. This is the constructivists’ goal (Patton, 2002, p.546).

The question of how perceptions are formed, unfortunately, is not easy to answer. In a thesis that purports to take into account contextual influences upon behaviour, based on Bronfenbrenner's theory, it is important to elaborate on what theorists have to say about the judgements or opinions that people make and report.

For Kaplan (1964) observations are pieces of factual information while laws and theories are products of conceptual processes. Facts are fixed through time, though theories are not. And a set of facts may be used towards a variety of laws and theories. Thus errors of fact are more serious than mistaken theories and more difficult to rectify. The difference between facts and theories lies in the way they are employed rather than their origin. Kaplan (1964) stressed that observation involved the observer in a process of theorising, and it was impossible without some conceptual processes. Or, as Hanson (1958) pointed out, "there is more to seeing than meets the eyeballs" (p.7). The empiricists make a distinction between hard and soft data, depending on whether they are purely observational or contain an inferential element, (e.g., qualitative interviews).

Scientific knowledge from a positivist' standpoint is a record of perceptual content. Observations are shapes, sounds, colours, patterns that are then organised and interpreted as the familiar objects and events of experience. Nietzsche called this philosophical position "The dogma of immaculate perception" (cited in Kaplan, 1964, p.131). Human perceptions are not immaculate however. We see what we expect to see, and this expectancy can produce observational error (Kaplan, 1964). Observation is already cognition, not just a record for subsequent knowledge and the possibility of error is as likely in this cognitive process as in the softer data, the more inferential material which is collected (Kaplan, 1964). "Perception apprehends a significant structure, or rather a structure which becomes significant in the apprehension requiring what Dewey calls a "funded meaning"" (Kaplan, 1964, p.132). The sensation of observation becomes admitted into perception only after cognitive analysis. What is more, the perceptual challenge does not end here.

What is observed needs to be able to be formulated in propositions which then serve as bases for subsequent inferences. Whorf (cited in Schultz, 1991) asserted this when he formulated his hypothesis, that language shapes our experience of the environment and words shape perceptions and actions. But the language which formulates propositions is itself inferential in character. Popper (1959) claimed that there is "no purely phenomenal" language distinguishable from a "theoretical language" (p.59). This is illustrated experimentally when persons are required to

identify colours. Colour discrimination is affected by the vocabulary available for labelling the differences. Still other experiments demonstrate that the perceived size, colour and so on of experimentally displayed objects also varies with the participant's training and experience (Hastorf, 1950; Bruner, Postman, & Rodrigues, 1951). Even such a relatively unambiguous perceptual task necessitates the investigation of the *emic* (Pike, 1966) perspective of participants.

Bruner (1990) argues that culture and the quest for meaning within culture are the causes of human action. The biological human universals, thought to be determinants of behaviour, merely act as constraints or conditions upon it. An Orthodox Jew's adherence to fasting on Yom Kippur is not precluded by hunger. With regard to this project, a self reported level of happiness by participant X is likely to result from a perception different from that which gave rise to the same level of happiness reported by participant Y.

Using a survey to collect attitudes and beliefs (observations) is expedient and commonplace. But like any other data collection instrument surveys are subject to limitations (Fife-Schaw, 2000). The limitations of surveys to illuminate participant perspectives are paralleled in experiments within the natural sciences that led to paradigm shifts. For example, the development of particle accelerators led to the elucidation of atomic structure. The problem that the technology for gathering data, the instruments, affects the data collected has given rise to many debates (Kaplan, 1964; Clark, 1998). Scientific progress made possible by technological advancement led the positivists to revise their position denying the existence or "truth" of un-observables. Until that point, truth was believed to be accessible only through the verification and replication of observable findings concerning directly perceivable entities (Wolfer, 1993). Kuhn's (1970) thesis that the generation of knowledge must be preceded by perceptual empirical data, the accepted doctrine for the positivists, had to be revised if the unobservable yet clearly real, as determined by sophisticated instrumentation, was to be admitted as truth.

Not only is this critical for the physical sciences but also for the behavioural and social sciences. For example, the implementation of the maze as an observational instrument from 1903 revolutionised the development of studies in animal intelligence (Herrnstein & Boring, 1976). Tolman (1937) put forward the idea of intervening variables, which, whilst they were not directly visible, nevertheless could be defined in terms of variables which were observable. For example,

the response following a stimulus would be mediated by motivation. Unobservable concepts could now be used for calculation and understanding of observable phenomena (Clark, 1998).

Surveys are limited by their own usefulness. The very reasons that make them useful, economy of design, restricted categorical choices for responses, the simple language of their construction, the selection of questions and the reduction of complex issues into variables for correlation purposes, also limit the insight they can give to the respondents' life world (Fife-Schaw, 2000). In a cross-sectional design survey such as the one used in this study, the collected data are unduly susceptible to time of measurement effects, that is, the influences on responses that are due to events immediately preceding the collection of data. Or, put another way, the unobservables of the physical sciences, corresponding to conscious and even subconscious influences in the behavioural sciences, are difficult to assess through surveys. There is a need for a qualitative approach alongside the quantitative, to access the social and behavioural unobservables in the phenomenon of interest.

The research questions of interest are underpinned by a belief in the validity of Bronfenbrenner's bioecological theory with specific references to parenting styles and their effect on adolescents' behaviours, future pursuits and agency in the context of schooling. Explication of these beliefs in the analysis stage will guide the interpretation process.

3.2.2 Bronfenbrenner's theory

I use an analogy borrowed from microscopy to explain my conviction that Bronfenbrenner's theory is important for the current study: the acceptance of a culturally determined construction of the self comprises the coarse adjustment of the project's orientation while Bronfenbrenner's bioecological model represents the fine adjustment of the perceptual lens.

In examining school failure in the USA, Richman and Bowen (1997), adopted an ecological perspective to understand the factors implicated in student resilience to failure. This approach is based on Bronfenbrenner's theory for studying human behaviour and development. "In capturing the process of mutual adaptation and accommodation that takes place between individuals and the environment, a person-environment fit perspective by definition reflects an ecological approach"(Richman & Bowen, 1997, p.103).

Development is thought to be the outcome of interaction between the individual and the environment (Sugarman, 2001). Sugarman likens the life course to a river system. The river is the body of water representing the person; the way the river flows is determined by the terrain over which it flows (environment). The water shapes the terrain in its course as well as being directed by it. In psychology this sort of analysis underpins the nature-nurture debate. For the study of development, a useful theory to examine some of the more perplexing issues, such as resilience (Rak & Patterson, 1996; Werner, 1995), coping (Randolph, 1995), and at-risk behaviours (Eron, Gentry & Sclegel, 1994), is Bronfenbrenner's bioecological theory. This theory is a useful lens with which to look at adolescents' behaviours and attitudes since it offers a way of classifying and understanding the influences bearing upon an individual. It also provides an insight into the relative strength of relationships through the narratives of participants (Sugarman, 2001).

Given that both quantitative and qualitative data are required to pursue the proposed research questions, what precedents have been set for their combined use in a single research project? In other words what philosophical paradigm is the most appropriate foundation for mixed methods research? The answer to this question is linked to the philosophical basis of mixed methods research, in terms of epistemology (how we know what we know), ontology (the nature of reality), axiology (the place of values in research), and methodology (the process of research) (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005).

3.3 Epistemological position – the need for pragmatism

Epistemology is a branch of philosophy concerned with questions about whether and how valid knowledge about reality can be achieved (Erzberger & Kelle, 2003). Kaplan (1964) holds epistemology to be a theory of knowledge that is often indistinguishable from methodology. His is a pragmatic view of methodology whose aim is to help us understand the process of scientific inquiry. He identified the "myth of methodology" (p.24) as the promise that if we can locate the one best method, we will reach our research goal rapidly. Any discussion therefore of an epistemological nature revolves around the "how", the methodology, used to generate knowledge.

Erzberger and Kelle (2003) separate epistemology into two broad camps, one categorised by an inductivist approach developed by seventeenth century philosophers such as Locke and Bacon, the other, a reaction to the former, the later twentieth century deductivist perspective based on the works of Popper, Hempel and Braithwaite. Qualitative methods have been used where the main

objective of inquiry is the generation of theory through induction. Qualitative inquiry is orientated towards exploration, discovery, and inductive logic according to Patton (2002). Inductive analysis begins with specific observations and uses these to build general patterns. Categories or dimensions of analysis emerge from open –ended observations as the researcher begins to see patterns in the phenomenon being studied. The hypothetico-deductive approach of experimental designs employed by positivist researchers requires the identification of experimental variables and the statement of specific test hypotheses before data collection begins; hence deductive analysis is used. The investigator decides in advance what variables are important and what relationships among those variables may be expected (Patton, 2002).

Burns (2000) proposes that inductive and deductive approaches are not as diametrically opposed as would be suggested by the paradigm wars, but are simply different ways of approaching the same goal. For example he quotes the practice of traditionally orientated positivists such as Skinner, whose work on reinforcement and learning used an inductive approach to generate his theory of operant conditioning. Bryman (1988) holds that “the distinction between qualitative and quantitative research is really a technical matter whereby the choice between them is to do with their suitability in answering particular research questions” (p.108-9). In sum, the significant differences between the two methodologies lie in the process of investigation and in the kind of questions being asked. Other theorists (e.g., Henwood & Pidgeon, 1992), argue that viewing qualitative and quantitative methods as deriving from incommensurable paradigms must be avoided because this would deny the possibility of strengthening research through the use of a mixture of methods.

The orientation that a scientist holds will determine the methods that will be employed in the research process. Even researchers who have no time for formal theories are actually working with implicit theories, making judgements and decisions about relationships between variables. Similarly, preconceived ideas render certain data inadmissible. Galileo’s colleagues refused to look through his telescopes at the moons of Jupiter which he discovered. Beliefs and values drive not only researchers but also respondents. An often found, deeply held, conviction revolves around the nature-nurture debate which has shaped many beliefs regarding human conduct. In a study examining causal attributions of university students (Gold & Ziegler, 1994) it was found that individuals who believed nature or genetics to be more important in determining behaviour were more authoritarian and racist than those persons who favoured the view that the environment is

more instrumental in shaping an individual. The Milgram experiment is another well known example of how beliefs shape behaviour.

Kelly (1955) based his theory of personal constructs on the belief that we all behave as naïve or informal scientists. Constructs are terms which we cannot observe but which may be defined on the basis of observation. Instantaneous velocity and government are two such examples (Kaplan, 1964). Kuhn's (1970) thesis is a similar idea applied to the scientific community. He maintained that knowledge within any discipline depends on a commonly shared commitment to a paradigm. A paradigm according to Kuhn consists of a number of assumptions of what exists (ontology), how it may be known (epistemology) and how scientific work ought to be carried out (ethics) and a set of activities held to be consistent with these assumptions. In his view, a commitment to a paradigm must precede the generation of knowledge. Furthermore, different paradigms will create different scientific realities and there is no means of standing outside a paradigm of some kind to adjudicate among them. This means that truth only exists within a paradigm. The scientific community acquires with a paradigm a criterion for choosing problems that, while the paradigm is taken for granted, can be assumed to have solutions. A paradigm can even insulate the community from those socially important problems that are not reducible to the puzzle form, because they cannot be stated in terms of the conceptual and instrumental tools that the paradigm supplies. This leaves a number of questions unanswered and necessitates the construction of a new paradigm. Kuhn likens this process to picking up the other end of the stick, handling the same data as before but placing them in a new system of relations with one another and giving them a different framework.

The debate surrounding the question of whether quantitative or qualitative data should be generated to inform inquiry in the social sciences has arisen because of Kuhn's rationale since the two forms of data typically belong to different, if not opposing, paradigms. In psychology, where it is acknowledged that "(empirically observed) social factors do operate in science, but that objective empirical data about the world play their part too" (Breakwell, & Rose, 2000, p.16) there is a sense that positivism is still considered more valid than constructivism. "...in the long run scientists are kept on the right path by some kind of objective reality operating via empirical observations" (Breakwell & Rose, 2000, p.16). Paradoxically, these same authors then go on to claim: "Our aims as psychologists therefore have to be to explain the particulars of mental life and behaviour we encounter in terms of the individual people we are observing, their constitutions and their

immediate and past circumstances. To do so, we have to use multiple methods, both rationalist and empiricist in nature” (p.16).

The conflict experienced by scientists in trying to come to an understanding of the complexities of human behaviour is aptly expressed by Wittgenstein:

The confusion and barrenness of psychology is not to be explained by calling it a young science.... For in psychology there are experimental methods and conceptual confusion... The existence of the empirical method makes us think we have the means of solving the problems which trouble us; though problems and method pass one another by. (Wittgenstein, 1953, p.232)

McGarland and Polgar (1994), argue that “the confusion and bareness of mainstream psychology is related to its exclusive commitment to empirical methodology” (p.26). They believe that the positivist approach is essential but not sufficient to produce a complete picture of the human “psyche” and its outputs. This stance is supported by Cronbach's (1975) conclusion that social phenomena are too variable and context bound to allow significant empirical generalisations, since “generalisations decay...at one time a conclusion describes a situation well...ultimately (it) is valid only as history” (p.122). Dyck (1994) concludes that since the subject matter of psychological inquiry is both the naturally determined behaviour of organisms and the socially meaningful action of persons it should be governed by a paradigm that embraces both perspectives. Patton (2002) also asserts that a pragmatic approach to research needs to be adopted using both quantitative and qualitative methods to minimise the trade-off of breadth versus depth in the study of a particular phenomenon.

Kaplan (1964) pleaded for a certain “catholicity” of outlook in behavioural science. The theoretician, the experimentalist, the field worker and the clinician all have their own perspective cores of inquiry. “All of them are right, what is wrong is only what they deny, not what they affirm” (p.30). Inquiry into subject matter that involves human beings uses methodology no different from that of any other science. However, human speech, human communication, confers to the behavioural scientist a technique denied to other scientists. As Kaplan illustrates:

“Kenneth Colby tells the fable of an object that arrives from outer space and that resists all efforts by the physicists and astronomers to determine its composition, structure or function, till at last a psychologist has the happy thought of asking: ““What is your name?” and the object replies “Ralph!”” (p.31)

Because of the subject matter of behavioural science, data for research scientists are actions performed in a context which has meaning or purpose. The behavioural scientist must work out what conduct a particular behaviour represents in context, its interconnections with other circumstances. For as Gergen (2003) showed, meaning is only possible in relationship; words by themselves may be meaningful if others in response grant the word meaning by an action, whether that is to support, ridicule, contest or ignore the words. If I say “look” and another shifts the line of gaze upon hearing the word, my utterance gains meaning. If my utterance does not elicit any action then it could be because it is meaningless to the other(s) or that, indeed, they chose to ignore it; the latter can only be confirmed through further supplementary action by the other(s). Interpretation, therefore, is a necessary feature of research methods in the behavioural sciences, making qualitative data generation more urgent. If, as Bruner (1990) claims, the self is “a product of the situations in which it operates”(p. 109), “acting is a barometer responding to the local cultural weather” (p.110), the need to explore the *emic* (Pike, 1966) perspective of participants becomes imperative.

This is particularly important if the process of comparison of the three groups of students in this project is to yield meaningful explanations. For just as meaning becomes apparent through interaction, in relationship, the characteristics of a social phenomenon (case) become clearer through comparison. “Thinking without comparison is unthinkable. And in the absence of comparison, so is all scientific thought and scientific research”(Swanson, 1971). For Ragin (1987) virtually all empirical social science research involves comparison of some sort. It is in this way that statements about empirical findings from specific cases may be made and evaluations and interpretations in relation to theoretical criteria can be proposed. Ragin (1987) also argues for combined strategies, including variable oriented analyses supplemented with case studies to improve the outcomes of research.

The pragmatic approach using mixed methods is based on the idea that what counts are not origins of paradigms but outcomes of the research (Kaplan, 1964). Pragmatism, first articulated by figures such as Dewey, James, and Pierce, and later by Murphy, Rorty, and West, draws on many ideas: ‘what works’, using diverse approaches, and valuing both objective and subjective knowledge (Hanson, Creswell, Plano Clark , Petska & Creswell, 2005). Rossman and Wilson (1985) who were among the first to link pragmatism with mixed methods research, differentiated between

methodological purists, situationalists, and pragmatists. The purists believed that quantitative and qualitative methods derived from different, mutually exclusive, epistemological and ontological assumptions about research. The situationalists believed that both methods have value but that certain methods are more appropriate depending on the circumstances. The pragmatists, by contrast, believed that, regardless of circumstances, both methods may be used in a single study. The usefulness of hybrid designs is dependent on the conclusions and the contribution of such research to the field of enquiry (Hardy, 1999). For many mixed methods researchers, then, pragmatism has become the answer to the question: what is the best paradigm for mixed methods research?

In conclusion, while it is clear that the researcher's philosophical understandings and beliefs are entangled with their views of the concepts they are exploring, there is a difference between making inquiry decisions so as to honour broad philosophical assumptions or to enhance substantive understanding of a particular set of concepts within a particular context (Greene & Caracelli, 2003). The pragmatist's aim is the latter.

3.4 Mixed method characteristics

Mixed methods can be used to overcome the weakness of the statistical methodology which tends towards "abstract and sometimes vacuous generalizations" (Ragin, 1987,p.69.) and the case study's main limitation of particularizing. More recently, mixed methods researchers (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005) suggest that mixed methods investigations may be used to:

1. better understand a research problem by converging numeric trends from quantitative data and specific details from qualitative data
2. identify variables/constructs that may be measured subsequently through the use of existing instruments or the development of new ones
3. obtain statistical, quantitative data and results from a sample of a population and use them to identify individuals who may expand on the results through qualitative data and results
4. convey the needs of individuals or groups of individuals who are marginalized or underrepresented.

Given that in this study three groups of students are compared to identify contextual interactions between parenting and school variables that give rise to differences in psychological constructs and

achievement outcomes, the use of mixed methods for the purpose identified in 4 above closely matches the study's requirements.

Examples of mixed method studies date back to as early as the 1920s. A combined approach such as the one proposed here was used by Paige (1975), and Stephens (1979). Both of these projects used interpretive case studies to support the findings of a quantitative investigation. Another example, (Hird, 2000) used both a questionnaire and focus groups and interviews with participants to investigate dating aggression and the 'symmetry of violence' theory. The study arrived at generalised measures of dating aggression as well as understandings of the meaning and context of aggressive acts. Similarly, McAdams' (1997) theory of identity as a personal narrative emerged primarily out of interviews with "real people, living and describing real lives" (McAdams, 1997, p.15), but also drew on data from standardised inventories and projective techniques.

The use of varied types of data concerning the same issue is one example of what has become known as triangulation. The term triangulation is taken from land surveying (Janesick, 1994), where three points as in a triangle are used to locate oneself at particular locations, and radio triangulation (Lincoln & Guba, 1985), whereby directional antennae set up at two ends of a known baseline are used to identify the point of origin of a radio transmission. Triangulation was used as early as 1928, when statistics and case studies were used together to verify data to give "mutual validation of findings" (Erzberger & Kelle, 2003, p.459). It took on a slightly different meaning when it was used in psychological testing; empirical results were thought to be validated by measuring the same traits with different instruments (Campbell & Fiske, 1959). In developing qualitative research techniques, Denzin (1978) adopted and modified the concept into one of combining methods, whether this means combining a qualitative and a quantitative approach or using several sources or kinds of data. He stated that "the logic of triangulation rests on the premise that no single method ever adequately solves the problem of rival causal factors. Because each method reveals different aspects of empirical reality, multiple methods of observation must be employed." (Denzin, 1978, p.28) Studies that use only one method of inquiry are more vulnerable to errors linked to that method than studies that use multiple methods in which different types of data provide cross-data validity checks.

Four types of triangulation have been identified by Denzin (1978):

1. data triangulation, the use of a variety of data sources in a study
2. investigator triangulation, the use of several different researchers or investigators
3. theory triangulation, the use of multiple perspectives to study and interpret a set of data, and
4. methodological triangulation, the use of multiple methods to study a research question.

A contrary position is adopted by Patton (2002) who claims that “when researchers operate from different frameworks, their results will not be readily interpretable or meaningful to each other” (p. 134). While admitting that no single framework is right or best, because the usefulness of each depends on the question explored, he goes on to add that the questions themselves are generated by the knowledge claims implicit in the frameworks used, echoing Kuhn’s thesis (1970). Therefore it is not possible to evaluate the validity or contribution of different research frameworks in terms of universal criteria, such as generalisability, predictability and meaningful understanding (Patton, 2002). As it has been argued, particular social phenomena need to be examined through multiple perspectives if a meaningful outcome is sought. Patton also recognizes this and goes on to advocate the use of ‘methodological mixes’. He does this whilst cautioning the researcher and quoting: “Guba and Lincoln (1988) have argued that the internal consistency and logic of each approach, or paradigm, mitigates against methodological mixing of different inquiry modes and data collection strategies” (Patton, 2002, p.252). Admitting that combined approaches have been used creatively and successfully, Patton concedes that pragmatic considerations that respond to the conditions of the real world are more important than epistemological arguments. Notably, the author of a textbook devoted to qualitative research methods (Patton, 2002) goes on to describe four mixed method approaches, “in the search for relevant and useful information” (p.251).

Upon examining several social science mixed method inquiries, Greene and Caracelli (2003) concluded that the complexity of the contemporary world demands multiple perspectives. Moreover, they reject the assumed incommensurability of different paradigms. Their concern remains however, that mixed method inquirers are insufficiently reflective in practice. Related to this is the problem of inference. That is the claim that conclusions based on findings are credible or valid. Inference, the term, is not however used in the same way by all mixed method practitioners (Miller, 2003). This is problematic since the type of inference structure used is reflected in the type of conclusions we make.

Miller (2003) proposes that in a quantitative-qualitative sequential design project primacy should be given to quantitative perspectives and analyses. He believes that the issue of inferences is best addressed by this approach on the grounds that assumptions of quantitative analyses are more systematic and complete. For example, a study looking at socioeconomic status and scholastic achievement may be chosen to investigate associations between these two factors. Does the addition of a qualitative phase add any insight to the study? Miller (2003) claims that it will only if the quantitative analysis is statistically significant and, then, only if the statistical analysis serves as a means to separate the sample into sub-categories for qualitative analysis. Theory generation can then be a function of the qualitative phase, giving rise to deductive inferences. For “...whenever we conceptualize data or develop hypotheses, we are interpreting to some degree. To us, an interpretation is a form of deduction” (Strauss & Corbin, 1998, p.136-137). This surely equates to the deductive inferences employed in hypothesis testing. But induction is more commonly applied to qualitative research: Field research equates with inductive social construction of theory while surveys and experimental designs are aligned with deductive theory tests (Hunter & Brewer, 2003, p.583).

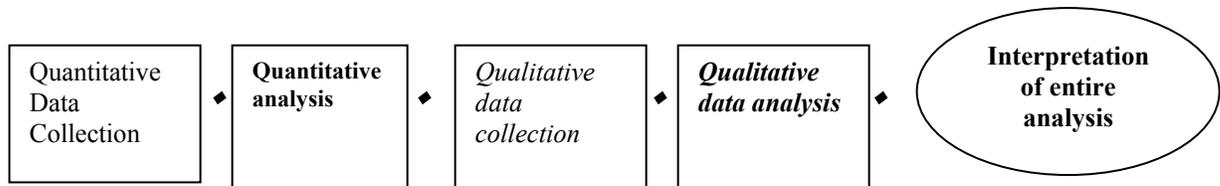
Reflection is thought to be the key to successful practice within the mixed methods perspective in order to relate quantitative and qualitative findings to each other and obtain valid inferences. Divergent findings, also possible from mixed methods research, while challenging original theoretical assumptions, may lead to new theoretical insights. To check that these are not artefacts of inadequately applied research methods, one needs to be certain of having applied correct method collection and analysis techniques and clear theoretical concepts (Erzberger & Kelle, 2003).

There are some unresolved issues and challenges in the use of mixed methods in the social sciences. The paradigmatic foundations of this approach lead to nomenclature and definition ambiguities which may, in turn, lead to inference drawing problems. The logistics of conducting this type of research is a major challenge for the inquirer since it demands a knowledge base which encompasses both qualitative and quantitative techniques. Whilst triangulation in the sense that Denzin proposed is an ideal support for any inquiry, it may be limited by several factors. In a project such as a PhD thesis which must be the work of the PhD candidate, investigator triangulation is not possible. Similarly, where there are time and financial constraints, also inherent in a PhD study, the amount of triangulation that is possible in terms of data gathering is also subject to limitations. In all, however, the utility of a mixed method approach in the social and behavioural

sciences means that a richer explanation of social phenomena may be possible than either a quantitative or qualitative framework alone can produce.

3.5 Design and sequencing of research

Mixed methods research has in the last ten years become more extensively studied and refined into typologies, giving this emerging methodology a theoretical basis (Cresswell, 2003). The design adopted in this study is of the sequential explanatory type, which is characterised by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The two sets of data are integrated during the interpretation phase of the study. This may be represented graphically:



The purpose of the sequential explanatory design is to use qualitative data to assist in explaining and interpreting the findings of the quantitative phase (Cresswell, 2003). At the same time, it is possible to explore issues which may be concealed in the quantitative data as outlined earlier. Furthermore, the data analyses are inter-connected since after the survey data are analysed, categorical variables that help explain the outcome variance are created, and then follow-up interviews are conducted with individuals who are thought to be representative of each of the categories.

The straight forward nature of this design is one of its main advantages, particularly since the steps involved fall into clear, separate stages. Its one draw back is the time involved in implementing the data collection. Examples of studies following this design are those carried out by Hird (2000) and Eggleston, Jackson and Hardee (1999).

A cross-sectional design is adopted for the survey which has the advantage of being ideally suited to correlational research (Shaughnessy, Zechmeister & Zechmeister, 2003), but the disadvantage that it is susceptible to time measurement effects (Fife-Schaw, 2000). In this case, the time of data collection was up to eight weeks after report cards were issued so some of the attitudes reported

may have been over-reported or under-reported due to some students' inability to remember their results accurately.

3.5.1 Quantitative sequence

3.5.1.1 Quantitative sampling strategies

The sampling adopted for the quantitative phase was cluster sampling. Government High Schools in the Townsville area were approached and used as clustering units. Parents of all students in Years 8, 9 and 10 in these schools were sent letters informing them of the study and requesting that they reply only if they did not permit their students to participate. Only 48 parents did not grant permission for their students to participate. The number of surveys obtained, 1127, represent 78% of the students eligible to participate and present on the days the data were collected. To minimize the possibility that schools were unrepresentative of student populations in terms of ethnicity and socioeconomic status the selected schools were located in geographically diverse parts of the city encompassing diverse demographic areas.

3.5.1.2 Participants and procedure

Participants include Year 8 to Year 10 students from three state high schools, in economically diverse school districts of Townsville, a small city in North Queensland. The surveys were administered during a single regular class period at the discretion of the participating schools to minimize subject disruption, 4 to 7 weeks after mid-year report cards were sent to students. The survey was completed by most students within 45 minutes. Students were given instructions by the administering teacher as per Appendix A, and assured that the information they were supplying was confidential. The questionnaires were placed in a sealed envelope upon completion.

3.5.1.3 Instrumentation

The self report questionnaire used in this project (Appendix 2) comprised a section on demographic data and five questionnaires previously developed by other researchers:

- a) Parenting Style Questionnaire (Lamborn et al, 1991).
- b) Patterns of Adaptive Learning Questionnaire (the goal orientation, academic self-efficacy and academic related perceptions beliefs and strategies) (Midgley et al., 2000).

- c) Life Orientation Scale (Scheier & Carver, 1985).
- d) The Quality of School Life Questionnaire (looking at student perceptions of teachers, school curriculum, and positive affect regarding attending school) (Williams & Batten, 1981).
- e) The Academic Coping Inventory (ACI) (Tero & Connell, 1984).

Demographic data were included because the literature indicates a significant association between socioeconomic status, values and agency (for example, Australian Centre for Equity through, Australia Department of Education Training and Youth, & University of Melbourne Australian Youth Research, 2001; Kohn, 1969, 1977). Additionally, an association between family structure and educational progress has been reported (Batten & Russell, 1995; McMillan & Marks, 2003; Zimiles & Lee, 1991). Furthermore, Townsville has a substantial mix of Indigenous persons which needs to be reflected in the collection data (ABS, 2001a).

The Parenting Style Questionnaire was developed by Lamborn, Mounts, Steinberg and Dornbusch (1991). The questionnaire measures adolescent perceptions of their parenting along two dimensions: acceptance/involvement and strictness/supervision (Lamborn et al., 1991). The acceptance/ involvement scale measures the extent to which the adolescent perceives his or her parents as loving, responsive and involved using 15 items: $\alpha = .72$, Mean = .81, SD = .11, Range = .25-1.0. The strictness/supervision factor assesses parental monitoring and supervision of the adolescent, 9 items: $\alpha = .76$, Mean = .74, SD = .13, Range = .30-1.0. For each of these scales several of the items are in a true/false format while others are scaled on a three-four point Likert scale. Four parenting categories were defined by trichotomising the sample on each dimension and examining the two variables simultaneously. Following Lamborn et al., (1991), parenting is defined by scores on the top tertile for both variables (authoritative), the bottom tertile for both variable (neglectful), top tertile for strictness/supervision and bottom tertile for warmth and involvement (authoritarian), and bottom tertile for strictness/supervision but top tertile for warmth and involvement (permissive). This questionnaire was used by the authors on a sample of 4,081 adolescents in the United States but to the best of my knowledge it has not been used in Australia.

The Patterns of Adaptive Learning Questionnaire (PALS) has been used extensively in the US and parts of it have been used in Australia (Smith, Sinclair & Chapman, 1999). PALS has been developed and refined over time by a group of researchers using goal orientation theory to examine the relation between the learning environment and students' motivation, affect, and behaviour.

Student scales assess student achievement goal orientations and achievement-related beliefs, attitudes, and strategies. The scales were developed by Midgley et al. (2000). Many of the scales are based on research showing that a differential emphasis on “mastery” and “performance” goals is associated with adaptive or maladaptive patterns of learning. In this study, 5 student sub-scales from the PALS questionnaire were used.

Sub-Scale	Number of Items	Cronbach's α	Mean	S.D.
The mastery goal orientation	5	.85	4.15	0.88
The performance approach goal orientation	5	.89	2.46	1.15
The performance avoid goal orientation	5	.74	2.40	1.04
Academic efficacy	5	.78	4.20	0.71
Academic self-handicapping strategies	5	.84	2.09	1.01

The rating was done on a five point Likert-type scale. Items on this scale are anchored at 1 = "Not at all true," 3 = "Somewhat true," and 5 = "Very true."

The Life Orientation Scale measures dispositional optimism defined in terms of generalized outcome expectancies (Scheier & Carver, 1985). The scale consists of eight items: $\alpha = .76$, Mean = 21.03, S.D. = 4.56 for males and Mean = 21.41 and S.D. = 5.22 for females. A five point Likert scale was used, from 4 = strongly agree to 0 = strongly disagree. Each of the pessimism and optimism items are added to produce individual total scores for both optimism and pessimism, with higher scores reflecting higher levels in each of these constructs. Samples of optimism and pessimism items are “I always look for the bright side of things” and “things never work out the way I want them to” respectively.

The Quality of School Life Questionnaire is concerned with obtaining student perceptions of the quality of school life. The survey instrument was developed by Williams and Batten (1981) as “a direct analogue of the more general “quality of life” measures found in the literature on social indicators” (Ainley, Reed & Miller, 1986, p.138). One reason for including this survey instrument is the idea that changing the curriculum to suit the student needs may help improve the outcomes of students at-risk (DETYA, 2001). The full questionnaire comprises 40 items in the form of a self-report Likert scale, however this project only utilized the sub-scales of items pertaining to teachers, positive affect and perceived opportunity (value of school curriculum). Each item was coded from

1(definitely disagree) to 4(definitely agree) and the subscale scores were calculated by adding the scores for all the items in that group. The questionnaire has been used many times in Australia (e.g., Ainley, Reed & Miller, 1986; Marks, 1998). The statistics associated with this instrument are as follows:

Sub-Scale	Number of Items	Cronbach's α	Mean	S.D.
Teachers	6	.83	17.6	3.4
Opportunity	6	.84	18.8	2.9
Positive Affect	5	.83	13.7	3.2

The Academic Coping Inventory (ACI) developed by Tero and Connell (1984), measures students' self-reported coping strategies. This inventory includes four scales assessing the "positive," "projective," "denial," and "non-coping" strategies. All items begin with the stem, "when something bad happens to me in school," and include the examples, "such as not doing well on a test, or not being able to answer a question in class." Items on scales measuring coping strategies were responded to on a four-point Likert scales with anchors of 1 ("not at all true") and 4 ("very true") to conform to the procedure used by the developers of the scales. The inventory was used by Kaplan and Midgley (1999) in a longitudinal study. They report internal consistencies for the four coping scales at the second, third, and fourth waves of data as follows: positive coping- .77, and .77; projective coping-.75, .77, and .74; denial coping- .71, .69, and .73; and noncoping-.72, .73, and .73.

3.5.1.4 Quantitative data analysis

Guided by the literature, three student groups were formed through the use of achievement and socioeconomic variables. English and mathematics mid-year grades were recorded as achievement levels. The grades were coded very limited (E) "0", limited (D) "1", sound (C) "2", high (B) "3" and very high (A) "4". An achievement score below 2 for each subject was used to classify students as at-risk. The resilient group was extracted from the remaining students according to their parental socioeconomic status: parents not educated above high school and one or both parents unemployed. The remainder of the students comprised the typical group.

Descriptive statistics are employed to compare the three groups of student in terms of ethnicity, outcome variables, parenting styles and family composition, as well as motivational orientation, disruptive behaviour, coping strategies, positive and negative affect, self- efficacy, attitudes to teachers and satisfaction with the school curriculum. To assess the differences between the students

at-risk and other students, analyses of variance (ANOVA) are employed. Any differences in self-efficacy, optimism/pessimism, parenting, school affect and curriculum satisfaction are examined.

The correlation between various factors, for example dimensions of parenting and self-efficacy, outcome variables, disruptive behaviours, coping strategies, school climate and optimism/pessimism are computed using Pearson's r .

An analysis of variance (ANOVA) assesses the difference between the three groups of students, (typical, resilient and at-risk) and parenting styles (Independent Variable) with regard to, for example, coping strategies, optimism, SES, quality of school life and motivational strategies. Similarly, gender differences and year level differences are assessed. The statistical program SPSS is employed to perform the statistical computations.

To test the hypothesis that parenting and school perceptions enhance achievement outcomes through their effects on optimism, self-efficacy and positive coping, structural equation modelling (SEM) is employed. Additionally, SEM is used to test the hypothesis that SES variables exert their influence via psychological constructs. The SEM rationale requires that theories are made explicit prior to the testing of the models proposed (Fife-Schaw, 2000). Many researchers have used SEM successfully to explore relations between parenting skills, low self-esteem, rejection by peers and academic failure (e.g. Patterson, 1986). Byrne, (2001) maintains that SEM techniques have an advantage over traditional multivariate regression models because:

1. SEM allows the researcher to explore relationships amongst dependent variables, e.g., self-efficacy, self-handicapping and optimism.
2. SEM allows the researcher to estimate latent constructs such as parenting or school climate by separating the measurement error and contribution of each indicator variable to the latent construct, for e.g., school climate perceptions, a latent construct, computed from teacher relationships, school opportunity and positive school affect may be more dependant upon positive school affect than teacher relationships. SEM shows the degree to which each indicator variable contributes to the latent variable.
3. Since SEM can estimate relationships between variables with the measurement errors removed, group difference testing can be accomplished. Thus, a test of the difference in scores on a latent variable is possible even though only data on the indicator variables pertaining to that latent variable are available. This is important when, for example, a

group difference is detected using a t-test or ANOVA, but the t-test or ANOVA does not discriminate whether the difference is a “true” difference in the latent construct or a difference in measurement errors.

In addition, SEM is very useful for multi-sample modelling, wherein a model is fitted simultaneously to sample data from different populations (MacCallum & Austin, 2000). By accounting for measurement errors, which have the effect of attenuating the estimation of relationships between observed variables (Kline, 1998; Maruyama, 1998), SEMs can detect underlying relations between constructs. Moreover, SEM techniques developed over the last two decades permit the use of ordinal or dichotomous categorical predictor variables in a model (Joreskog & Sorbom, 1984; Muthen, 1984) removing the need to employ more complicated logistic regression methods. Finally, the assumption of multivariate normality need not apply to the exogenous (measured) variables (Bollen, 1989, pp.126-28). In short, SEMs are very useful when mediating relationships as well as direct relationships between variables are sought.

In selecting a particular SEM model from a variety of possible models, the fit statistics, the χ^2 test, GFI (Goodness of fit index), AGFI (adjusted goodness of fit statistic), CFI (comparison fit index) and the RMSEA (root mean error of approximation) are examined to support the decision to retain or reject a particular model (Byrne, 2001).

3.5.2 Qualitative sequence

The purpose of the qualitative phase of the study is to examine how students perceive their schooling and its usefulness for their future, their aims and whether proximal microsystems are supportive of these aims. How students construct their identity is another objective, based on the foreshadowed notion that reciprocal microsystem interactions affect the construction of one’s identity. In these interviews I was looking for fleshed-out illustrations of the profiles indicated by the quantitative data analyses, i.e., exemplars of resilient, typical and students at-risk.

3.5.2.1 Issues of validity

The students selected represent instrumental case studies in order to gain insight into at-risk conceptualizations, in particular with regard to parenting and schooling. The aim is to refine theory and look for ideas for further investigation. “The process of justifying a case - as a case of something important - involves showing that the case belongs to a specific family of phenomena.

This family, in turn, is important because of its relevance to general social scientific thought (theory)”(Ragin, 1992,p.15). This raises the issue of generalisability which is not without tensions since the search for particularity competes with the search for generalisability.

Much concern about generalisability stems from the traditional positivist paradigm wherein causation and validity notions are debated (House, Mathison & McTaggart, 1989). The positivist criteria for evaluating the validity of a study, namely internal validity, external validity, reliability and objectivity are replaced by concepts related to the trustworthiness of qualitative data (Sugarman, 2001). These concepts are: credibility, the extent to which researchers and participants see the world from a shared standpoint; transferability, thick description providing the basis for comparison to other settings; dependability, relating to the stability of data over time and, confirmability, the process whereby the development of constructions by the researcher is made explicit, trackable and transparent so that it can be inspected and confirmed by outside reviewers (Sugarman, 2001). Since this study is a snapshot in time, no claim with regard to dependability is made.

The transferability criterion, although limited by the length of time that the researcher engages with each participant, is achievable through retaining the variety of participant perspectives, thus providing for a fuller picture of the phenomenon. Credibility is approached by clarifying the participants’ view point with the participant at frequent junctures. I tried to do this during each interview, as is evident in the transcripts. Confirmability is developed through the explication of the values and framework employed to analyse the data. Support for this rationale is widespread among qualitative researchers operating from a constructivist viewpoint.

Working from a constructivist, contextual, perspective imposes a rejection of criteria such as objectivity and reliability since this position assumes knowledge to be local, provisional and situation specific, with the corollary that the results will vary according to the collection and analysis context (Madill, Jordan & Shirley, 2000). It is accepted that the production of knowledge is affected by:

- participant’s own understandings
- researcher’s interpretations
- cultural meaning systems from which researcher and participant operate
- acts of judging particular interpretations as valid by the scientific community

(Pidgeon & Henwood, 1997).

Following this through means that all accounts, participant's and researcher's are subjective and thus not *prima facie* invalidated by conflicting with alternative versions (Madill et al., 2000). Triangulation within this framework aims for elaboration and completeness not convergence (Fielding & Fielding, 1986).

Stake, (2000) suggests that the transfer of knowledge from the researcher to the reader occurs by subtle often unconscious means. Associations become relationships and relationships become theory as the reader reconstructs the knowledge to make it more personally useful. The onus is on the researcher to make sure that the data and interpretations are faithfully representative of the context, for it is in this way that the case findings resonate with the reader (Stake, 2000). Patton (2002) echoes this view when he writes that "In qualitative research, the credibility of the methods hinges to a great extent on the skill, competence and rigor of the person doing the fieldwork" (p.14). Lastly, in narrative research, there are many possible readings of narratives, whether they are read to analyse discourse or reveal the construction of identity (Kirkman, 2002). "How general the implications for research may be depends on the recognition with which it is received" (Kirkman, 2002, p.34).

3.5.2.2 Selection of participants

Selection of the participants for the case studies is based on theoretical sampling. This type of sampling was used by Buckholt in 2001, quoted in Patton (2002, p.238), in a study looking at resilience among adult abuse survivors. The sample becomes by definition and selection representative of the phenomenon of interest. Strauss and Corbin (1998) define theoretical sampling as "sampling on the basis of emerging concepts, with the aim to explore the dimensional range or varied conditions along which the properties of concepts vary" (p.73). Lyons (2000), in describing qualitative research methods states that a random sample is not necessary (p.272). Since qualitative research is concerned with studying particular phenomena and social processes embedded in specific contexts, qualitative samples comprise a small number of cases chosen on a theoretical basis (Lyons, 2000).

Participants for this phase of the study consist of three groups of two Year 10 individuals:

1. Students at academic risk as defined by their academic results
2. Resilient students, as defined by their academic results and the literature

3. Typical students

These students were all selected from one of the participating schools in order to minimize school culture differences between the students. Also, as a former teacher in that particular school, there was a greater likelihood that invited students would consent to being interviewed since they knew me from the time they began at that school and would be more likely to feel comfortable talking with me. Ethnicity has been taken into account by selecting 3 Indigenous students. Gender however, was not used to guide the selection of students and as a result, only one female student was included. The interest in male students stemmed from the finding that a greater proportion of males were found to be at risk of academic failure. These 6 students comprise the case studies of the project. Green (2002) maintains that case studies can highlight meaning from the view point of the individual, thereby providing a window of meaning into the lives of the researched, and a means by which to examine multiple realities. Moreover, “case studies provide a mechanism for the transfer of knowledge from one setting to another” (Guba & Lincoln, 1994, p.114).

Stake (1994) describes the range or variety of case studies as intrinsic, instrumental and collective. The instrumental case study is undertaken because “one wants to provide insight or refinement of theory” (p.237); the case here is of secondary importance to the issue that it highlights.

Instrumental case studies show how the issue under investigation exists within particular cases. The collective case study, “which is not a study of the collective but instrumental study extended to several cases” (p.237) is an approach taken to investigate a phenomenon, population or general condition. He goes on to explain that individuals within the collective study may or may not manifest the same characteristics, however they are chosen because it is believed that understanding them will lead to a better understanding of the phenomenon of interest (Stake, 1994). The case studies here are part of a collective case study intended to highlight differences and similarities between students who are resilient, at academic risk and typical.

3.5.2.3 Interview strategies and questions

While the interview, particularly the semi-structured interview, is a very useful strategy to understand the world from the interviewee’s perspective (Sugarman, 2001), the quality of the data obtained this way is highly dependent on the interviewer’s skill and the motivation of the interviewee. Response effects, touched upon earlier, can be the source of misleading or misrepresentative answers. For example participant predispositions such as suspiciousness with regard to the purpose of the research, indifference or lack of motivation, a desire to present the self

in a favourable light, a lack of knowledge or a desire to please the interviewer can all lead to misrepresentations. Similarly, interviewer alignment and characteristics can also produce effects through a lack of rapport with the participants or a tendency to project personal views and hence inhibit the respondent, or simply through the way the interviewer speaks or dresses. Lastly, the way the interview is carried out can produce effects. These are related to the environment and way the interview is pursued (Borg & Gall, 1983); for example, fatigue if the interview is overly long, the relative privacy of the place where it is held and so on. Careful planning of the interview minimizes these effects.

More difficult to prepare for and prevent is the influence of the power relationship between the interviewee and the interviewer (Mishler, 1986). If the relationship is one where the interviewer holds all the power in terms of controlling the aims and structures of the interview, the result may be one where the respondent's narratives are stifled. A more collaborative approach, with power being shared, may result in a richer more insightful narrative. Recording of the interview helps to eliminate interviewer bias in recording responses and leaves the data open to verification by other researchers.

An interview schedule was used to ensure that questions were appropriate and ordered correctly. Open ended questions with long introductions to the topic and wording familiar to the participants obtains a higher level of responding than closed standard questions (Borg & Gall, 1983). Confidentiality was affirmed as questions became more personal and at the beginning of the interview. A response guided approach was adopted whereby "answers to questions are affirmed by queries designed to create multi-faceted data" (Murray Thomas, 2003, p.64).

A preliminary meeting with each student participant, introducing the study and its aims, encouraged them to reflect on their school experiences so that upon meeting with them for the interview session the participants were certain that they wanted to interact with me, the researcher; and not as anxious as they might be upon meeting a stranger. This was less important in this instance since most of the students knew me as their past teacher or as a teacher from their school. My prior history with the student interviewees was one that established considerable rapport between us because I had taught three of these students while the other three knew me from the first day they started at the school in Year 8.

The result of our prior association is reflected in the richness of the interview material obtained from the three students whom I had previously taught. These students related quite personal information without fear or reticence and confident in my discretion and confidentiality. Even “Nathan”, who is mistrustful of teachers, withdrawn and uncommunicative, spoke openly to me. I believe, this was due of our two-year-long student-teacher relationship. The prior relationship that I had with the other student at-risk and “Tess”, the resilient girl, permitted me to enter into their world. This was an issue of some importance in the case of “Kim” and “Tess” since I am not an Indigenous person and at first these two appeared suspicious of the research. The two typical students also knew me, my teaching, and relationships with other students, as the school is fairly small and most students encounter all the teachers in various roles in and out of the classroom.

The questions used in the interview schedule were designed to bring to light the influences that participants experience and the construction of identity/self that these influences may have resulted in. In other words, the aim was to find out how the participant makes sense of their world, of themselves and of their agency. This was based on the theoretical framework employed in this study which maintains that the identity of the individual is the negotiated product of interactions between the individual and their environment (Bronfenbrenner, 1979). The questions were designed to elicit narratives of personal experience that involved the students in reliving their past. The list of questions and the systems they relate to consist of:

1. Tell me about your experiences of school and how you feel about school (microsystem).
Possible prompts: How long have you been in this school? What subjects do you like most? What electives do you study? Why did you pick these electives? Did anyone help you decide what to study? What do your parents think of these subject choices? Do you remember your first day at school? Do you remember your first day at this school?
2. Tell me about your parents’ thoughts about your school (mesosystem links). Prompts: do your parents talk to you about what you have learnt at school each day? Do your parents check if you have done your homework? Do you ever ask your parents to check your homework? Do your parents impose any restrictions on your social life if you haven’t done your school work?
3. Tell me about the people most important to you (microsystem; prompts will include questions regarding parental occupation (macrosystem), family structure, including extended family, family communication, family activities (macrosystem). Who do you identify with most? Or who would you go to if you had a problem? Boy friend/ girl-friend?

4. Tell me about your plans for the future (exosystem connections). Prompts: what is an aim or dream for the future? What job would you like to do? Where would you like to live? How are you going to achieve this aim? Do you have all the information you need? All the support you need from your family?
5. Tell me about significant events in your life, both positive and negative (to show the importance and possible connections between systems). Prompts: have you had any family moves? Have you lost a good friend, or a family member? Did you move from a place that you liked to one you don't like as much? Did you get something (maybe a present) you really wanted? Did you ever expect something and it didn't happen?
6. Tell me about your greatest achievement and your greatest disappointment (to illustrate interactions between systems and highlight the importance of the four systems). Possible prompts: Did you ever stuff-up something and feel bad? If an article was about to be written about you, what would you tell them about yourself and who you are?
7. Tell me about what is important to you or some of your concerns (to illustrate possible microsystem deficits, and connections to exosystem). Prompts: How do you think you will do with your exams? Is getting a job important? Is doing well at your hobby, or sport important?
8. Do you intend to stay on at school to complete Year 12? (to access ontological perspectives). What do you like about this school? Would you go to a different school if you had a choice?
9. Is there anything you would like to add about how you feel about your schooling and how it (or anything else) is preparing you for your future?

The process remained flexible as each student's narrative unfolded, following that adopted by Lasser and Tharinger (2003) in their study of gay, lesbian and bisexual youths, as well as the approach advocated by McAdams (1997). After each interview, which took place in an empty school classroom, I recorded my views and made notes on the tone of the interview. As Kvale (1996) suggested, "The lived interview situation, with the interviewee's voice and facial and bodily expressions accompanying the statements, provides a richer access to the subjects' meanings than the transcribed texts will later" (p. 129).

3.5.2.4 Analysis of case study transcripts

“The analytic strategy employed is intended to summarize and interpret the data. The aim is not to discover finally and objectively “what is out there”. The intention is to engage with the data as ‘other’, as participant in a conversation in which the researcher also participates” (Ezzy, 2002, p.109).

Narrative analysis was employed to interpret the case study transcripts. Narrative research according to Lieblich, Tuval-Mashiach, and Zilber (1998) refers to any study that uses or analyses narrative materials. The data can be collected as a story from an interview or the narrative written by the researcher describing field observations. Reissmann (2000) concurs with this view, asserting that there is much variation in how researchers employ the concept of personal narratives and in the methodological assumptions they make in their analyses. Similarly, Bryman (2004) claims that the term narrative analysis refers to both an approach, emphasizing the storied nature of human recounting of events, as well as the sources themselves, the stories that form accounts.

Robinson and Hawpe (1986, p. 114) maintain that narrative analysis is an analysis of narrative thinking and “narrative thinking is a type of causal thinking: the stories we tell are accounts of experience, of how and why something happened.” There is no rigid recipe of what counts as a story. Stories can have many structures which are born out of cognitive analysis of action in its social context. A story might incorporate the feelings, goals, needs and values of the story teller. A historical episode, for example, will have a different meaning and impart a different experience for each person.

Narrative thinking consists of three parts: “the story schema, the story teller’s knowledge and experience and a diverse array of cognitive strategies” (Robinson & Hawpe, 1986, p.115). The schema defines what question is answered, what knowledge is employed and how this knowledge is incorporated into the story (cognitive processes). These characteristics permit extensive interpretation.

Narrative thinking is different from scientific thinking in that it is context based and related to personal perspectives whereas scientific thinking claims to be unambiguous and certain, applicable to all contexts, predictable and generalisable. The narrative approach does not assume objectivity;

rather, it privileges positionality and subjectivity. The individual chooses which story to tell and how to tell it. There is no definitive way of knowing whether the story is accurate, sincere or reflective or simply a familiar narrative construct chosen, consciously or unconsciously, to substitute for meaningful insight into the respondent's view. Moreover, since personal narratives are negotiated within a (interview) context it may be appropriate for a respondent to have different versions of narratives within concurrent or sequential contexts (Kirkman, 2002).

Narrative thinking organizes perception, thought, memory and action into illustrations of meaning; parables and anecdotes are such illustrations of individual experiences generalized in a social context. Lieblich et al. (1998), advocate that personal narratives are peoples' identities (p.7). "...stories imitate life, and present an inner reality to the outside world. At the same time, however, they shape and construct the narrator's personality and reality" (p.7). Rich narratives can give access not only to the teller's identity and systems of meaning, but also their culture and social world (Lieblich et al., 1998). Therefore narrative analysis is considered the most appropriate analytic tool with which to examine students' interview transcripts. Narrative material can be analysed along many dimensions: contents, structure, linguistics, beliefs, cognitive level of the narrator and so on (Franzosi, 1998). Reissman (1993) claims that narrative analysis permits the systematic study of personal experience and meaning, how events have been constructed by active subjects, and advocates the use of multiple cases, the use of comparative work, to show variations and "reach theoretical levels of abstraction" (p.70). This is the aim here.

3.5.2.5 Implications of the interview as a source of narratives

Narratives are defined by Goffman (1981) as "strips of personal experience from a teller's past which are replayed" (p.174). They are in a sense performed for an audience. Within an interview, however, Cortazzi (1993) argues that narratives are summaries of past events lacking performance. Reports are modified recollections fitted to the present view which the interviewee is willing to share. The interview itself produces speech which is formal since "speakers pay attention to how they speak" (p.56). Because participants know that they are answering questions, narratives are usually short and to the point unlike conversational narratives. Where spontaneous narratives are elicited in interviews, they are likely to be triggered off by previous utterances. This must be taken into account in an analysis of the transcripts.

Interviewees respond to interviewers according to who we are, our gender, social class, race, age as well as who we are in their lives (Miller & Glassner, 2004). When interviewing participants who do not share our group membership, practical as well as theoretical considerations are likely. For example, as a result of social distance interviewees may not trust the interviewer, may not understand the questions that are being asked or alternatively, the interviewer may not be asking pertinent questions because of not being an “insider”. Adolescent interviewing presents an example of such concerns since the meaning systems of adolescents are different of those of adults even though they are in a transitional period of life where they are becoming increasingly oriented to adult positioning (Miller & Glasser, 2004). The danger of positioning the respondents as adolescents in the interviews and using their membership of that group as a qualification to answer the questions is one that has to be guarded against since it is likely to result in responses guided by their positioning rather than their lived in experiences (Baker, 2004). In other words they may answer in what they believe is the expected way for an adolescent, irrespective of what they actually think. This might become obvious through the performance aspects of the interview.

Cortazzi (1981) argues that performance links interview narrative to narratives which occur in informal conversation. Signs of performance include intonation patterns, pitch range, iteration, in other words, how the story is told. The performance aspects of a narrative imply a degree of closeness to the original event. Analysts can ask many questions of a narrative segment in terms of performance. In what kind of story does a narrator place themselves? How are they located in relation to the audience and vice versa? How do they relate to themselves, and make claims about whom or what they are? (Bamberg, 1997). Mishler (1986) reinforces this: “whatever else a story is about, it is also a form of self-presentation, that is, a particular personal-social identity is being claimed; everything said functions to express, confirm, and validate this claimed identity” (p.243). The content of the identity, the way it is expressed through the particulars of the account and the ways it represents cultural themes and values are all located in the narrative.

If interview talk is unlike a narrative however, how does an investigator select segments for analysis? Reissman (2000) asserts that investigator’s decisions as to where to put boundaries around for analysis purposes depends on their analytical framework and theoretical interests.

In view of the above complexities inherent in obtaining narratives from an interview context, analysis of transcripts involved both identified narrative segments as well as wholistic-content

reading of short, non-narrative answers to the interview questions. Lieblich, Tuval-Mashiach and Zilber (1998) argued that a wholistic-content analysis approach is used in clinical case studies and is appropriate “when the investigator is primarily interested in similarities and differences in a group of individuals” (p.15). The study reported here represents such a quest, in that three groups of students were interviewed in order to explore their views and experiences with regard to school, parenting, and support. Therefore, the analysis of the transcripts represents a pragmatic approach suited to deriving an understanding of the *emic* perspective of the students. Given the scope of the research, the interviews were transcribed verbatim, to include pauses and hesitations. However I listened to the tapes as much as possible during the analyses because in this way it was much easier to recall and interpret the emotional content of whole interview situation.

Finally, as a narrative researcher, I am also the storyteller because I construct and represent each student’s story and its meaning. I speak for the six students in this context. As Mishler (1995) emphasises:

It is clear that we do not *find* (his italics) stories; we *make* stories. We retell our respondents’ accounts through our analytic re-descriptions. We too are storytellers and through our concepts and methods – our research strategies, data samples, transcription procedures, specifications of narrative units and structures, and interpretative perspectives – we construct the story and its meaning. In this sense *the* story is always co-authored, either directly in the process of an interviewer eliciting an account or indirectly through our representing and thus transforming others’ texts and discourses. (pp. 117–118)

In doing so, I draw upon my background knowledge, both consciously and unconsciously, to construct meaning. No “Knowledge is without foreknowledge” (Diesing, 1991, p.108). When the transcripts were read, different life experiences were employed to interpret them. Experience as a teacher, a mother, a daughter living with a single parent, a student at academic risk due to high mobility, truancy and family instability, and an émigré. This interlocking knowledge and resultant attitudes extracted various messages from the readings of the transcripts. I acknowledge that derived meanings were at all times filtered through my interpretive lenses even when Bronfenbrenner’s bioecological framework was employed in the analyses.

Analysis took place through two phases: a descriptive followed by an interpretive phase (Murray, 2003). The transcripts were read several times, until a pattern emerged. Initial and global

impressions were noted followed by short summaries to identify key foci and themes being raised. The next step involved connecting the narrative with the broader literature used to interpret the story, in this case Bronfenbrenner's bioecological model. Each narrative was then analysed at the *personal level*, how each student account reflected their personal experience, what picture of themselves they were portraying (Murray, 2003); and at the *societal level*, how each narrative is connected to the broader context of home and schooling. Thematic analysis, what is being said, and structural analysis, how it is being said, both models of narrative analysis (Reissman, 2004), were used to gain as much insight as possible into each student's perspective and attitudes.

Drawing on whole interviews rather than aggregations of replies to answers provides a way of explaining and expanding quantitative findings by putting information into a meaningful context. Convergence of each student's narrative with their survey results in relation to parenting and school climate formed a substantial aspect of the analytic process at the interpretive stage, in order to illustrate, complement and enhance quantitative findings as was done by Wajcman and Martin (2002) and Kirkman (2002).

3.6 Ethical considerations

Ethical codes relating to psychological research stress that researchers must consider the welfare of the participants and must protect them from being either physically or mentally harmed by the research process (Breakwell, & Rose, 2000). In this project there were no physical or psychological risks for the participants over and above those that the participants would encounter during the course of their normal lifestyle. Specifically, there would be fewer risks involved in the interview situation than students would encounter in the course of a typical day at school. Students and parents were told that at the conclusion of the research process they would have access to the findings of the research and to their own results should they wish to access them.

The procedures adopted to implement informed consent varied according to each participating school. A letter was posted to parents of students in schools P, N, outlining the research and its aims (**Appendix 1**). They were told that the study was confidential, that their student's name would not appear on any published research and that participation was entirely voluntary in either phase of the study. The right to withdraw from the investigation at any time during the research was also stressed. Parents were given a choice as to whether their student could participate in only one phase of the study or in both. Parents were required to return the letter of consent to school if they did not

wish their student to participate in the study. This was done at the suggestion of the principals who believed that a better response rate would be achieved in this way, particularly from the parents of students at-risk.

The taped interviews will be locked in a filing cabinet to which there will be no access to any person other than the principal researcher. After five years the tapes will be destroyed. James Cook University Ethics Committee and the Queensland Education Department granted ethics clearance for the project in April 2004.

3.7 Conclusion

Moghaddam, Walker and Harre (2003) argue that research methods not only are intimately connected with cultural practices but are cultural practices. There is however variation in the particular biases reflected by different research methods. Psychology is a science of human behaviour. Thus it entails an exploration of the similarities involved in cognitive procedures, both social behaviour and the neural mechanisms mediating these, across cultural boundaries.

“This involves the issue of levels of abstraction. To achieve anything like the kind of detailed understanding of the generation of psychological phenomena that we find in the natural sciences, we must drop to lower levels of abstraction. Inevitably this requires the adoption of a multi-methods approach.” (Moghaddam et al., 2003, p.131)

Chapters Four and Five following are records of the results and analytic procedures described in this chapter.

Chapter Four: Quantitative analyses and results

Introduction

Preliminary analyses were conducted to establish the validity of the measuring instruments employed in the study. Following these analyses the main analytical procedures for the study were performed. *A significance level of at least $p < .05$ was used for all statistical tests unless otherwise indicated.*

The study was designed to compare differences in perceptions of parenting, quality of school life (QSL), motivation, optimism and coping strategies between three groups of students: typical, resilient and students at-risk. As a result, chapter 4 is organised into four main parts: part 1 describes the demographic characteristics of the student groups; part 2 includes parenting style associations connected with differences between the three groups; part 3 reports on analyses concerning ethnicity associations with being at-risk, perceptions of parenting, QSL, motivational orientation, optimism and coping strategies; part 4 describes the structural equation models (SEM) proposed to explain the results. In particular, SEM is used to infer mesosystem links between two microsystems, home and school, in order to estimate the relative contribution of each to the psychological constructs that students employ.

Preliminary analyses of the measuring instruments employed in the study¹

Because the surveys were obtained from students in three schools, in order to examine if the data was clustered, the scatter plots of principal scores were examined (Johnson & Wichern, 2002, p. 426). No clustering of the data was found and hence analyses proceeded as planned.

To help to establish the validity of the a) Patterns of adaptive learning scales (PALS), b) Academic coping inventory (ACI), c) Life orientation scale (LOT), d) Quality of school life (QSL) and e) Parenting style scales, the data for each of the instruments were subjected to a confirmatory factor analysis (CFA) using the Amos 5.0 computer software program (Arbuckle, 2003). All estimates are based on a maximum likelihood method. The outcomes of the CFAs, showing goodness of fit statistics for each scale are shown in Tables 4(a), (b), (c), (d) and (e).

¹ Full questionnaires can be found in Appendix 2

Table 4 (a) CFA results for PALS One factor congeneric models (n=1050)

<i>Subscale</i>	<i>df</i>	χ^2	χ^2/df	P	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>RMSEA</i>
academic self-efficacy	2	2.65	1.33	.265	.999	.994	.999	.018
mastery goals	2	6.24	3.12	.044	.997	.985	.997	.045
self-handicapping	2	4.46	2.22	.108	.998	.990	.997	.034
performance approach *	5	157.25	31.45	.001	.938	.813	.927	.170
performance * avoidance	2	47.07	23.54	.001	.978	.889	.927	.147

*these two scales were not subsequently used in the analyses

Debate continues about the fit statistics employed to justify any CFA or SEM model. The most commonly cited statistics are the χ^2 test, the GFI (goodness of fit index), the AGFI (adjusted goodness of fit index), CFI (comparison fit index) and the RMSEA (root mean error of approximation) (Byrne, 2001). Comment about appropriateness and meaning follow.

The χ^2 test compares the model implied by the relationships among the empirical variables with the model specified by the investigator. A low χ^2 test with a high probability value indicates a good fit between the model and the data. But low χ^2 test values are rare with sufficiently high sample numbers and models of even moderate complexity. To account for model complexity CMIN/DF (χ^2/df) is computed and values are regarded as acceptable if they are between 1-3. However, values as high as 5 have been considered as adequate when the models examined are complex and the samples are large. So other indices less influenced by sample size need to be examined (Cohen, Cohen, West, & Aiken, 2003; Byrne, 2001). GFI estimates the amount of variance and covariance in the sample S that is jointly explained by the population covariance matrix, Σ . AGFI adjusts for the number of degrees of freedom in the model. GFI and AGFI should be $>.90$ for adequate fit and should be close in value to each other (Loehlin, 1998). RMSEA allows the probability of obtaining the same results if a similar sample was taken from the population to be calculated. For example, a RMSEA of $>.027$ would yield a probability of (100-2.70) 97.3%. RMSEA values of $<.05$ - $<.10$ are considered adequate (Byrne, 2001; Diamantopoulos & Siguaw, 2000). CFI compares the model to a baseline model. Generally, it should be $>.95$, though values of $>.90$ have been considered

acceptable in the literature, and values close to 1 indicate excellent fit (Byrne, 2001). A judgment as to whether fit statistics indicate poor, good or excellent fit is based on evaluations of all the above indices simultaneously.

Table 4 (b) CFA results for the ACI, LOT, QSL and parenting style measuring instruments (n=1050)

<i>Instrument / scale</i>	<i>df</i>	χ^2	χ^2/df	<i>P</i>	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>RMSEA</i>
ACI	59	284.61	4.82	.001	.960	.938	.940	.060
LOT	19	52.89	2.78	.001	.987	.976	.981	.041
Teacher relationships (one factor congeneric model)	2	7.88	3.94	.019	.997	.978	.997	.053
Positive school affect (one factor congeneric model)	4	14.92	3.73	.005	.994	.979	.994	.051
School opportunity (one factor congeneric model)	8	23.29	2.91	.003	.993	.981	.994	.043
Parenting Style : strictness (one factor congeneric model)	3	6.35	2.11	.096	.998	.988	.999	.033
warmth (one factor congeneric model)	4	3.70	.926	.447	.998	.992	1.000	.000

CFA yielded good fit indices for three of the PALS subscales: self-efficacy, mastery goals and self-handicapping goals, but performance approach and avoidance goals yielded poor fit indices and were not used further in any analyses. The ACI inventory and the one factor congeneric models for the QSL measuring instrument similarly yielded good fit indices upon CFA. However, LOT was best described by a two-factor solution, comprising of a pessimism and an optimism factor, while the parenting style questionnaire was found to be best described by two factors, strictness and warmth only when some of the items were deleted from each of the subscales as developed by Lamborn et al., 1991. The factor loadings for the individual items of ACI, LOT, and parenting scales are shown in tables 4(c), (d), and (e) respectively. They show acceptable to good loading on the target factors. As a result of these analyses, the use of these instruments, as prescribed by their developers, are now supported.

Table 4 (c) Item factor loadings for each of the four ACI factors

Item factor loadings for each of the four factors		Estimate
DENIAL_B	denial coping	.686
DENIAL_A	denial coping	.723
DENIALCO	denial coping	.594
POSITIVE	positive coping	.698
POSITI_B	positive coping	.761
POSITI_A	positive coping	.647
NONCOPIN	non-coping	.610
NONCOP_A	non-coping	.643
NONCOP_B	non-coping	.744
NONCOP_C	non-coping	.814
PROJECTI	projective coping	.628
PROJEC_A	projective coping	.745
PROJEC_B	projective coping	.641

Table 4 (d) Item factor loadings for each of the two LOT factors

Item factor loadings for each of the three factors		Estimate
PESSIM6	pessimism	.674
PESSIM7	pessimism	.749
PESSIM8	pessimism	.749
PESSIM3	pessimism	.557
OPTIMI_A	optimism	.596
OPTIMI_C	optimism	.598
OPTIMI_D	optimism	.647
OPTIMI_B	optimism	.526

Table 4 (e) Item factor loadings for each of the three parenting style factors

Item factor loadings for each of the two factors		Estimate
NEWWARM1	warmth	.733
NEWWARM2	warmth	.391
NEWWARM3	warmth	.411
NEWWARM4	warmth	.699
NEWWARM5	warmth	.594
STRICT19	strict/supervision	.330
STRICT21	strict/supervision	.438
STRICT22	strict/supervision	.444
STRICT23	strict/supervision	.464
STRICT24	strict/supervision	.546

4.1 Demographic characteristics

The sample comprised of 1127 students. Of the 1127 surveys received, 1050 were used in the analysis as the others, 6.8% of the total sample, were identified as missing various sections after missing values analysis was performed by SPSS. Since the missing values analysis indicated that the values were missing at random, these surveys were not used. Table 4.1 shows the background characteristics of the sample (N=1050) used in the analyses. Typical and resilient students are categorised as those students who have achieved at least a sound (pass) grade for both mathematics and English, and, in addition, resilient students are students whose parents are both non-graduates and who have at least one parent unemployed, following the rationale of previous studies (e.g., Richters & Martinez, 1993). Students at-risk of dropping out of school are defined as having a mathematics and/or English grade below average (pass) following the procedure used in other studies to classify students at-risk of dropping out of school (e.g., Battin-Pearson et al., 2000; Horn & Chen, 1998, Kaufman & Bradby, 1992). Tests of independence² indicate that there is a significant association between being Indigenous and being at-risk of academic failure $\chi^2=15.96$, $df = 1$, $p < .001$, the proportion of variance in achievement associated with ethnicity is 12% (Phi statistic). For this reason some analyses have been conducted separately for each group of students (Tables 4.1.1 and 4.1.2).

Table 4.1 Student background characteristics (N=1050)

<i>Student background</i>		<i>at-risk</i>	<i>typical /resilient</i>	<i>N</i>	χ^2 (<i>df</i>)	<i>p</i>	<i>% variance</i>
Indigenous	Count	37	66	103			
	% within ethnic background	35.9	64.1	100.0			
non-Indigenous	Count	181	766	947			
	% within ethnic background	19.1	80.9	100.0			
Total	Count	218	832	1050	16.95(1)	.001	12.3
	%	100.0	100.0	100.0			

² When using 2x2 or greater contingency tables, the expected frequency in each cell must be at least 5, for the use of the χ^2 test. If this is not the case, Fisher's exact test statistic is reported (Pagano, 1994, p.461).

A primary interest of this study is to examine the links between students at-risk and structural/behavioural factors. Therefore descriptive characteristics of two groups are shown below, those students who are at academic risk compared to typical/resilient students. This is because the resilient category was constructed by the researcher based on theoretical considerations derived from the research literature.

Table 4.1.1 Non-Indigenous student characteristics (N=947)

<i>student characteristic</i>		<i>at-risk</i>		<i>typical/resilient</i>		χ^2	<i>df</i>	<i>p</i>	<i>% variance (Phi statistic/contingency coefficient)</i>
		<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>				
Achievement (Mean)			2.31		5.63				
gender	male	97	20.7	371	79.3	1.55	1	.212	(NS)
	female	84	17.5	395	82.5				
family	non-intact family	98	27.8	254	72.2	27.6	1	.001	17.1
	biological intact family	83	13.9	512	86.1				
Year level	Year 8	45	13.2	296	86.8	16.5	2	.001	13.1
	Year 9	54	18.9	232	81.1				
	Year 10	82	25.6	238	74.4				
father 's education	non-graduate	161	22.3	561	77.7	20.0	1	.001	14.5
	graduate	20	8.9	205	91.1				
mother's education	non-graduate	156	23.1	519	76.9	24.3	1	.001	16.0
	graduate	25	9.2	247	90.8				
overall suspension	never	103	13.0	687	87.0	113.8	1	.001	35.0
father's work	once/many times unemployed/don't know	78	49.7	79	50.3				
	employed	39	29.5	93	70.5	10.8	1	.001	11.0
mother's work	unemployed/don't know	142	17.4	673	82.6				
	employed	65	28.4	164	71.6	16.8	1	.001	13.3
Total		181	19.1	766	80.9				

Table 4.1.2 Indigenous student characteristics (N=103)

<i>student characteristic</i>	<i>at-risk</i>		<i>typical/resilient</i>		χ^2 <i>/Fisher's exact test</i>	df	p	% variance <i>(Phi statistic/Contingency coefficient)</i>
	N	%	N	%				
Achievement (Mean)		1.97		5.12				
gender	male	15	37.5	25	62.5	.07	1	.790 (NS)
	female	22	34.9	41	65.1			
family	non-intact family	29	46.8	33	53.2	7.97	1	.005 28.0
	biological intact family	8	19.5	33	80.5			
Year level	Year 8	11	28.9	27	71.1	3.34	2	.188 (NS)
	Year 9	15	34.1	29	65.9			
	Year 10	11	52.4	10	47.6			
father 's education	non-graduate	35	37.6	58	62.4	1.22*	1	.324 (NS)
	graduate	2	20.0	8	80.0			
mother's education	non-graduate	35	39.3	54	60.7	3.30	1	.069 18.0
	graduate	2	14.3	12	85.7			
overall suspension	never	18	25.0	54	75.0	12.4	1	.001 35.0
father's work	once/many times unemployed/don't know	19	61.3	12	38.7			
	employed	16	50.0	16	50.0	4.0	1	.046 20.0
mother's work	unemployed/don't know	21	29.6	50	70.4			
	employed	18	43.9	23	56.1	1.9	1	.170 (NS)
Total		19	30.6	43	69.4			
		37	35.9	66	64.1			

*Fisher's exact test used for cells with expected count of less than 5.

Results shown in Tables 4.1, 4.1.1 and 4.1.2 indicate that students at-risk are more likely than typical students to be Indigenous. In addition, independence tests of association indicate that within both Indigenous and non-Indigenous student groups student gender is not significantly linked with being at-risk. Family structure is a significant factor associated with being at-risk for both groups with non-intact families being linked with students at-risk while intact families being linked with typical or resilient students, the effect explaining 17% of the variance for non-Indigenous groups and 28% of the variance in Indigenous students. While Year level is not a statistically significant

factor for Indigenous students, indicating that Indigenous students are as likely to be at-risk in Year 8 as in Year 9, the proportion of at-risk students in Year 10 almost doubles (28.9% rising to 52.4%). By contrast, non-Indigenous students are statistically more likely to be at-risk in Year 10 than in either of the lower Years (13.2% of students at-risk rising to 25.6%) explaining 13.4 % of the variance in student grouping. Father's education is statistically linked to being at-risk in non-Indigenous students, explaining 14.5% of the variance in student grouping, with father's not having graduate level education being significantly associated with students at-risk. Father's education level however, was not statistically linked to Indigenous student grouping at $p < .05$. Mother's education was linked with being at-risk in both Indigenous ($p < .07$) and non-Indigenous students explaining similar variances in student grouping (18% and 16% respectively), with students whose mother's education was limited to less than graduate level being more likely to be at-risk. Suspension rates explained the highest proportion of variance in being at-risk for both groups, 35% respectively, with never being suspended being statistically associated to being typical/resilient. If a father is unemployed both non-Indigenous and Indigenous students are likely to be at-risk, with paternal employment explaining 11% and 20% of the variance in being at-risk in the two groups respectively. Finally, it seems that maternal employment is associated with being at-risk in non-Indigenous students but not in Indigenous students.

Based on tests of independence above, a student at-risk is most likely to be Indigenous, live in a non-intact i.e., a blended family, where both parents are non-graduates, and perhaps unemployed. Additionally, students are more at-risk of academic failure as they approach Year 10 and particularly if they have a history of suspensions.

4.2 Parenting style associations

The CFA of the parenting scale suggested that the scale is best considered as consisting of two factors, warmth and strictness/supervision. This necessitated the heuristic grouping of the four parenting styles in accordance with each of the two factors. Following Lamborn et al.'s (1991) rationale the score of each dimension was trichotomised, with students who scored in the top 33.3% or the bottom 33.3% of each dimension being considered in the pure parenting analyses. Thus, a student whose reported warmth and strictness scores were within the top 33.3% was deemed to be reporting authoritative parenting. Neglectful parenting was indicated by students whose scores on the dimensions were within the bottom 33.3%. If the strictness dimension was within the top 33.3% but the other dimension was within the bottom 33.3% then that student was placed within the

authoritarian category, while those students whose strictness dimension was within the lowest 33.3% but the warmth dimension was in the top 33.3% were placed in the permissive parenting category. This treatment of the parenting scale ensures that only those students whose scores are situated in the opposite ends of the scale are placed into the parenting categories.

It is to be noted at all times that these categories are not thought of as confirming an absolute, rigid parenting typology but rather a heuristic device to permit a comparison between students whose parental perceptions are relatively distant from each other in this sample. The characteristics of students in each category of parenting style are summarized in Table 4.2. Since the sub-sample consists of 379 students, the majority of whom fall within the two diametrically opposed categories, neglectful and authoritative, patterns that emerge from these two categories are considered to be most important.

The most striking trends connected to parenting style are:

- students within the authoritative group have the highest achievement mean (5.49)
- the highest proportion of students who were never suspended occurs in the authoritative category (47.5%) in contrast to the highest proportion of students who have had many suspensions falling within the neglectful category (55.0%)
- Indigenous students are over represented in the neglectful category (61.1%)
- there are two times as many males as females within the permissive category
- 51.9% of students living within a blended family report neglectful parenting while 57.1% of students living with both biological parents report authoritative parenting
- 47.8% of students at academic risk report neglectful parenting while 22.2% report authoritative parenting
- one-way analyses of variance for each of the independent variables within parenting style showed that the highest association with parenting style was family structure, $\eta^2 = .19$, a large size effect, a finding that might be expected. Other medium size effects were found for mathematics achievement, $\eta^2 = .10$, suspension level, $\eta^2 = .09$, English achievement, $\eta^2 = .10$, and father's employment $\eta^2 = .08$.

Table 4.2 Demographics of students reporting a pure parenting style (N=379)

		<i>Parenting style</i>								Total
		neglectful		permissive		authoritarian		authoritative		
		N	%	N	%	N	%	N	%	
achievement (mean)		4.00		4.54		4.43		5.49		4.71
ethnic background	Indigenous	22	61.1	2	5.6	6	16.7	6	16.7	36
	non-Indigenous	112	32.7	35	10.2	50	14.6	146	42.6	343
gender	male	66	35.1	24	12.8	23	12.2	75	39.9	188
	female	68	35.6	13	6.8	33	17.3	77	40.3	191
suspension	never	90	30.1	26	8.7	41	13.7	142	47.5	299
	once/many times	44	55.0	11	13.8	15	18.8	10	12.5	80
Year level	Year 8	42	30.2	13	9.4	21	15.1	63	45.3	139
	Year 9	44	37.3	9	7.6	19	16.1	46	39.0	118
	Year 10	48	39.3	15	12.3	16	13.1	43	35.2	122
student group	at-risk	43	47.8	10	11.1	17	18.9	20	22.2	90
	typical	75	29.4	23	9.0	32	12.5	125	49.0	255
	resilient	16	47.1	4	11.8	7	20.6	7	20.6	34
family	non-intact	84	51.9	13	8.0	37	22.8	28	17.3	162
	biological intact	50	23.0	24	11.1	19	8.8	124	57.1	217
fathers education	non-graduate	110	37.4	27	9.2	51	17.3	106	36.1	294
	graduate	24	28.2	10	11.8	5	5.9	46	54.1	85
mother's education	non-graduate	101	37.5	26	9.7	42	15.6	100	37.2	269
father's employment	unemployed/ don't know	33	30.0	11	10.0	14	12.7	52	47.3	110
	employed	36	51.4	4	5.7	19	27.1	11	15.7	70
	Total	98	31.7	33	10.7	37	12.0	141	45.6	309
mother's employment	unemployed/ don't know	134	35.4	37	9.8	56	14.8	152	40.1	379
	employed	48	46.6	11	10.7	19	18.4	25	24.3	103
	Total	86	31.2	26	9.4	37	13.4	127	46.0	276
Total		134	35.4	37	9.8	56	14.8	152	40.1	379

The percentage of resilient students within the pure parenting styles is 9% of the total (Table 4.3). It is of interest that the largest proportion of resilient students occurs within the neglectful category, 47.1%. It is apparent that the authoritative parenting category has the highest proportion of typical students, 49.0%, while the relative proportions of at-risk and resilient students are similar within the four categories. This is a counter-intuitive result since it would be expected that the majority of

resilient students would occur within the authoritative parenting category. The explanation may lie in the link between parenting style and parental education, or might be due to the small sample of resilient students in this study.

Table 4.3 Percentage of students reporting a pure parenting style by student group (N=379)

	<i>Parenting style</i>									
	neglectful		permissive		authoritarian		authoritative		Total	
	N	%	N	%	N	%	N	%	N	%
at-risk	43	47.8	10	11.1	17	18.9	20	22.2	90	23.7
typical	75	29.4	23	9.0	32	12.5	125	49.0	255	67.3
resilient	16	47.1	4	11.8	7	20.6	7	20.6	34	9.0

4.2.1 Dimensions of parenting

The parenting dimensions of warmth and strictness-supervision were investigated to explore the hypothesis that a greater perceived level of warmth and supervision is experienced by typical and resilient students compared to students at-risk, irrespective of the four parenting style categorisations.

A multivariate analysis of variance, MANOVA, was conducted investigating the differences between the three groups of student (3) by the two dimensions of parenting (2), using the whole sample (N=1050). A statistically significant difference between the three groups was detected, Wilk's lambda, $F(4,2092)=14.8, p<.001$, partial eta squared³ (η_p^2) = .03, indicating a small size effect. Table 4.2.1 shows the three groups' means, standard deviations (S.D.) and sample size (N). All dimensions of parenting are statistically significantly different across the three groups, warmth $F(2,1047)=20.4, p<.001$, partial eta squared (η_p^2) = .04, and strictness and supervision, $F(2,1047)=17.3, p<.001$, partial eta squared (η_p^2) = .03. Between group comparisons (Bonferroni)

³ Partial Eta squared, η_p^2 , is the statistic produced by the software SPSS to account for the effect of an independent variable upon a dependent one. It is not dependent on how many factors, or independent variables, there are, as it gives the contribution of each factor or interaction, taken as if it were the only variable, so that it is not masked by any more powerful variable. Partial eta-squared is defined as the proportion of total variation attributable to an independent factor, partialling out, or excluding, other factors from the total non error variation (Cohen, 1988). It is computed as follows: $\text{Partial } \eta^2 = \text{SSfactor} / (\text{SSfactor} + \text{SSerror})$, where SSfactor is the variation attributable to the factor and SSerror is the error variation. (Pierce, Block, & Aguinis, , 2004). Values of .01, .06 and .14 represent small, medium and large sizes respectively (Burns, 2000).

show that resilient students report significantly higher levels of strictness than students at-risk, though there is no significant difference between resilient students and those at-risk on their dimension of warmth (Figure 4.2). Typical students report significantly higher levels than the other two groups on all three dimensions, $p < .001$. The frequencies of pure parenting style reported by students are shown in Table 4.2.2. These frequencies are of the same order as the frequencies of pure parenting found by Lamborne et al. (1991) in their study involving over 10,000 American students.

Table 4.2.1 Means, standard deviations (S.D.) of the two dimensions of parenting in the three groups of student

<i>Constructs</i>		<i>at-risk (N=218)</i>	<i>typical (N=735)</i>	<i>resilient (N=97)</i>
Strictness	Mean (S.D.)	.78 (.19)	.86 (.15)	.84 (.13)
Warmth/involvement	Mean (S.D.)	.83 (.13)	.88 (.11)	.83 (.13)

Figure 4.2 Means of strictness and warmth for the three groups of student

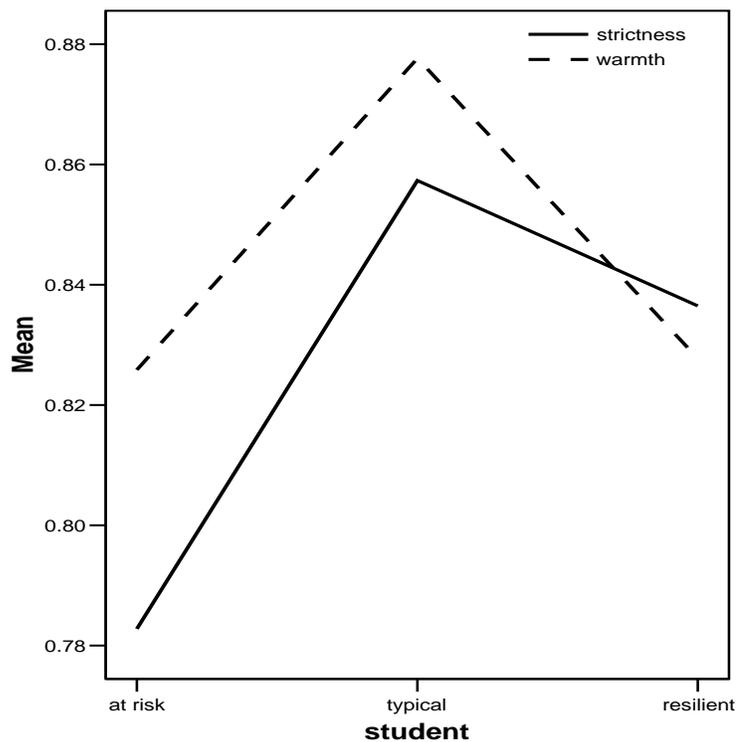


Table 4.2.2 Frequencies of parenting style in the sample

<i>Parenting style</i>	<i>Frequency</i>	<i>Percent (%)</i>
not-pure	671	63.9
neglectful	134	12.8
permissive	37	3.5
authoritarian	56	5.3
authoritative	152	14.5
Total	1050	100.0

4.2.2 Associations between parenting style and parental education

To explore the possibility that parenting style is connected to parental education, association tests of independence between parenting style and paternal education and parenting style and maternal education were performed (N= 379). When a 2 x 4 contingency table (Table 4.2.3) analysis was performed for paternal education and parenting style, a statistically significant relationship emerged, with a $\chi^2=13.3$, $df = 3$, $p < .005$. The proportion of variance in paternal education associated with parenting style is 18% (contingency coefficient). Thus authoritative parenting style is associated with higher paternal education while neglectful parenting is linked to a lower paternal education. Permissive or authoritarian parenting is linked to lower paternal education.

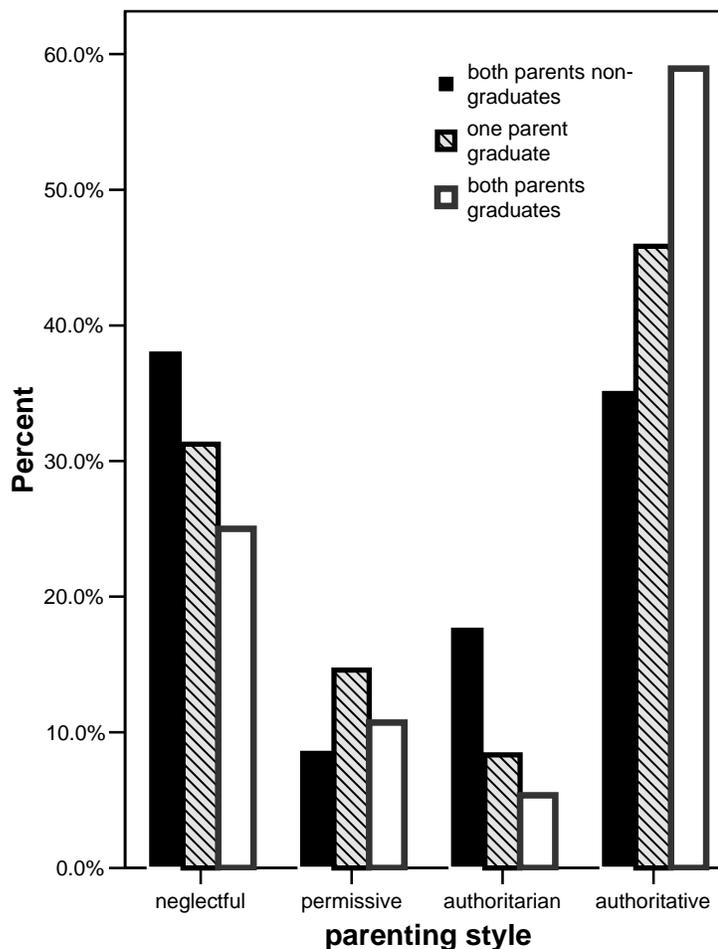
Table 4.2.3 Chi squared (χ^2) independence test between parenting style and paternal education (N=379)

<i>Parenting style</i>		<i>Non-graduate</i>	<i>Graduate</i>	<i>Totals (N)</i>
neglectful	Count	110	24	134
	%	82.1	17.9	100.0
permissive	Count	27	10	37
	%	73.0	27.0	100.0
authoritarian	Count	51	5	56
	%	91.1	8.9	100.0
authoritative	Count	106	46	152
	%	69.7	30.3	100.0
Totals		294	85	379

The same analysis was repeated for maternal education and parenting style however, no statistically significant relationship was detected at the 5% level.

Figure 4.2.1 shows the percentage composition of each parenting group in relation to parental education. It seems that higher paternal education is linked to a greater likelihood that the parenting style adopted will be authoritative, while lower paternal educational levels are linked to a higher probability that parenting processes will be closer to the neglectful parenting style.

Figure 4.2.1 Parenting style and parental education



4.2.3 Associations of parenting style with suspensions

Because externalising behaviour is associated with academic underachievement a test of independence between parenting style and suspension level was carried out next through a 3 x 4 contingency table analysis (N= 379). A statistically significant relationship was detected, with a

$\chi^2=33.1$, $df = 3$, $p<.001$. The proportion of variance in suspension level associated with parenting style is 28% (contingency coefficient). The results show that the authoritative parenting style is associated with fewer suspensions while the converse is the case for neglectful parenting (Table 4.2.4).

Table 4.2.4 Chi squared (χ^2) independence test between parenting style and suspensions (N=379)

<i>Parenting style</i>	<i>Row %</i>	<i>never</i>	<i>once/ many times</i>	<i>Total N</i>
neglectful	%	23.7	11.6	134
permissive	%	6.9	2.9	37
authoritarian	%	10.8	4.0	56
authoritative	%	37.5	2.6	152
Total N		299	80	379

4.2.4 Association of parenting style with achievement

In order to detect associations between parenting style and being a typical, resilient or student at-risk chi-square analyses were performed. These analyses include only those students reporting a pure parenting style (N = 379). A statistically significant relationship was detected, with a $\chi^2=26.4$, $df = 6$, $p<.001$. The proportion of variance in being a typical, resilient or student at-risk associated with parenting style is 26% (contingency coefficient). Based on statistical probability, there is a larger than expected number of typical students in the authoritative category, a larger than expected number of resilient students in the authoritarian category and, finally, a larger than expected number of students at-risk in the neglectful category, (Table 4.2.5).

Table 4.2.5 Chi squared (χ^2) independence test between parenting style and being at-risk, typical or a resilient student (N=379)

<i>Parenting style</i>	<i>at-risk</i>	<i>typical</i>	<i>resilient</i>	<i>Total N</i>
Neglectful %	32.1	56.0	11.9	134
Permissive %	27.0	62.2	10.8	37
Authoritarian %	30.4	57.1	12.5	56
Authoritative %	13.2	82.2	4.6	152
Total N	90	255	34	379
Total %	23.7%	67.3%	9.0%	100.0%

To further illustrate the links of parenting style to academic achievement a chi square analysis was repeated upon the whole sample (N=1050). Results show that a non-pure parenting style is not associated with the incidence of the three groups of students since their expected count compared to their actual count are not significantly different (Table 4.2.6).

Table 4.2.6 Chi squared (χ^2) independence test between parenting style and being a typical, resilient or student at-risk (N=1050)

<i>Parenting style</i>		<i>Student at-risk</i>	<i>Typical student</i>	<i>Resilient student</i>	<i>N</i>
not-pure	Count	128	480	63	671
	Expected	139.3	469.7	62.0	671.0
	Count				
	%	19.1	71.5	9.4	100.0
neglectful	Count	43	75	16	134
	Expected	27.8	93.8	12.4	134.0
	Count				
	%	32.1	56.0	11.9	100.0
permissive	Count	10	23	4	37
	Expected	7.7	25.9	3.4	37.0
	Count				
	%	27.0	62.2	10.8	100.0
authoritarian	Count	17	32	7	56
	Expected	11.6	39.2	5.2	56.0
	Count				
	%	30.4	57.1	12.5	100.0
authoritative	Count	20	125	7	152
	Expected	31.6	106.4	14.0	152.0
	Count				
	%	13.2	82.2	4.6	100.0
Total	Count	218	735	97	1050
	%	20.8	70.0	9.2	100.0

A statistically significant relationship was detected, Fisher's exact statistic of 31.1, $df = 8$, $p < .001$, when the analysis was performed on the whole sample. The proportion of variance in being a typical, resilient or student at-risk associated with parenting style is 17% (contingency coefficient). The results suggests that neglectful parenting is a risk factor and authoritative parenting is a protective factor since both of these parenting styles appear to be connected with statistically significant lower or higher numbers of students at-risk respectively than would be expected based on statistical probability alone.

Because a great deal of power is lost when variables are trichotomised, as with the parenting dimensions to derive pure parenting style sub-groups, and because this procedure can produce spurious effects (Cohen, Cohen, West & Aiken, 2003) the analyses henceforth will be applied to the whole sample, using the two dimensions of parenting as covariates to investigate their links with other constructs in this study.

A univariate analysis of variance (ANOVA) was conducted to investigate the effects of the two parenting dimensions upon achievement using the whole sample (N= 1050). A statistically significant effect was found to exist for the model $F(2, 1047) = 46.9, p < .01, (\eta_p^2) = .08$, showing a moderate size effect (Figure 4.2.2). The effect of the two parenting dimensions upon achievement was thus demonstrated when the model specified was: achievement = constant + β_1 warmth + β_2 supervision + error. The effects of the parenting dimensions are conceived as additive in their impact upon achievement because each parenting style is comprised of the two dimensions, with variations between the dimensions describing different parenting styles.

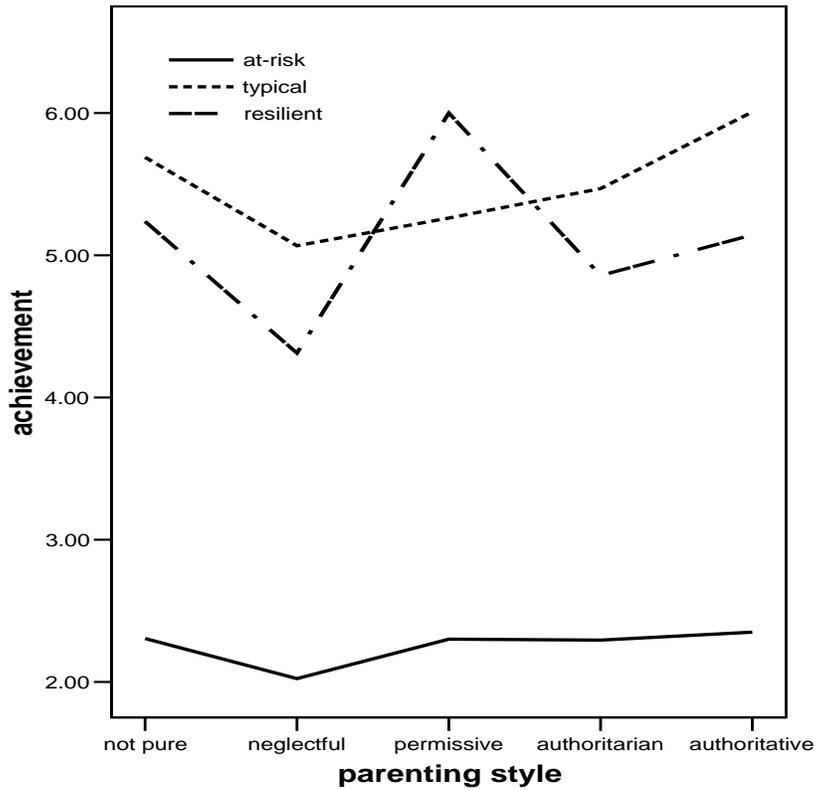
Parenting style effects were found to be different for each group. Authoritative parenting was linked to higher achievement levels in typical and students at-risk but not in resilient students. Resilient students were more likely to have higher achievement if their parenting was permissive. Caution is to be exercised however when interpreting the results of authoritarian and permissive parenting as the sample size for those categories is small (Table 4.2.7).

Table 4.2.7 Student achievement means, S.D. and sample size (N) by parenting style (N=1050)

Parenting style	<i>at-risk</i>		<i>typical</i>		<i>resilient</i>		<i>N</i>
	Mean	S. D.	Mean	S. D.	Mean	S. D.	
neglectful	2.02	1.06	5.07	1.19	4.31	.60	134
permissive	2.30	1.06	5.26	1.33	6.00	1.41	37
authoritarian	2.29	1.05	5.47	1.32	4.86	1.07	56
authoritative	2.35	.81	6.01	1.31	5.14	1.46	152
not -pure	2.30	.94	5.69	1.35	5.24	1.25	671

Therefore, achievement appears to be moderated by certain parenting styles within each group of students: authoritative parenting is associated with higher achievement while neglectful parenting is linked to lower achievement levels in all groups. Authoritative parenting seems to be a protective factor since the results within this group are higher than those for the non-pure parenting style.

Figure 4.2.2 Achievement mean by each student group and parenting



4.2.5 Associations between parenting style and optimism

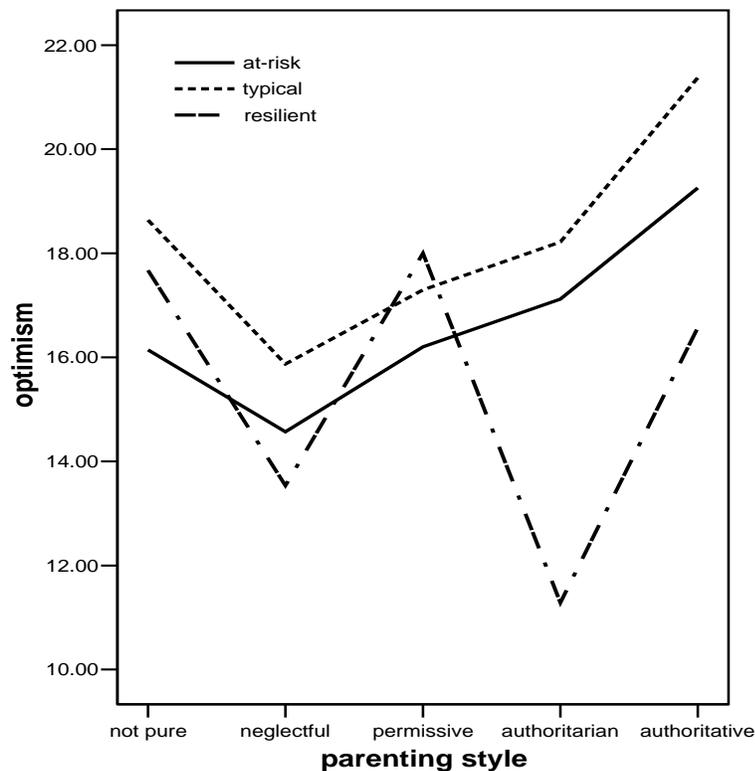
Parenting style influences upon optimism levels in the three groups were examined next, by conducting a univariate ANOVA: first testing for differences between the three groups (N=1050) and then testing for interaction effects between parenting style and the three groups (N=379). A statistically significant difference between the three groups was detected $F(2, 1047) = 24.8$, $p < .001$, partial eta squared (η_p^2) = .05, indicating a small size effect. Table 4.2.8 shows the three groups' optimism means, standard deviations (S.D.) and sample size (N).

Table 4.2.8 Optimism means, standard deviations (S.D.) and sample size (N) for the three groups of students

		<i>Optimism</i>		
		Mean	S. D	N
	at-risk	16.20	4.64	218
	typical	18.76	5.32	735
	resilient	16.46	5.86	97

Typical students are more optimistic than either resilient or students at-risk but there is no statistically significant difference between resilient and students at-risk. Main effects of parenting dimensions on the whole sample revealed that there is statistically significant effect upon optimism, $F(4, 1045) = 47.69, p < .001, \eta_p^2 = .15$, showing that this is a large size effect. Thus the three parenting dimensions are strongly linked with optimism, such that if they are all high as in authoritative parenting, or all low as in neglectful parenting the within group differences in student optimism will be augmented. This is illustrated in Figure 4.2.3.

Figure 4.2.3 Optimism mean by parenting style by student group



4.2.6 Associations between parenting style and motivational goals

A multivariate analysis of variance (MANOVA) conducted to examine the motivational goal differences between the three groups of students (N=1050) shows statistically significant differences between the three groups, $F(6, 2090) = 21.2, p < .001$, partial eta squared (η_p^2) = .06, with a moderate size effect. These differences are connected to self-efficacy, $F(2, 1047) = 51.84$,

$p < .001$, partial eta squared (η_p^2) = .09, self-handicapping, $F(2,1047)=21.00$, $p < .001$, partial eta squared (η_p^2) = .04, and mastery goals, $F(2,1047)=17.35$, $p < .001$, partial eta squared (η_p^2) = .04. Bonferroni multiple comparisons indicate that significant differences in self-efficacy arise in all the three groups, with typical students having higher self-efficacy than resilient students who in turn have higher self-efficacy than at-risk students; self-handicapping is significantly lower in typical students than in the other two groups, but no significant difference was detected between resilient and students at-risk. Mastery goals are lowest in students at-risk, being significantly different from both of the other groups (Table 4.2.9).

Table 4.2.9 Means and standard deviations (S.D.) for motivational goals in the three groups of students

<i>Construct</i>	<i>Student at-risk (N = 218)</i>		<i>Typical student (N = 735)</i>		<i>Resilient student (N = 97)</i>	
	Mean	S.D.	Mean	S. D.	Mean	S.D.
academic self-efficacy	3.12	.92	3.79	.85	3.46	.91
mastery goals	3.39	.92	3.84	.93	3.83	.98
self-handicapping	2.57	.88	2.14	.93	2.47	1.03

Main effects of parenting dimensions upon motivational goals were examined next using a model that includes each of the parenting dimensions plus group membership additively i.e. Model = intercept + strictness + warmth +three groups. A statistically significant effect for warmth was detected, $F(3, 1043)=13.8$, $p < .001$, partial eta squared (η_p^2) = .04, indicating a small size effect, for strictness, $F(3, 1043) = 22.9$, $p < .001$, partial eta squared (η_p^2) = .06, indicating a moderate effect size, and membership of the three groups, $F(6,2086)=15.1$, $p < .001$, partial eta squared (η_p^2) = .04 showing a small size effect. Thus, the differences in motivational goals between the three groups of students may be further moderated by parenting dimensions, such as might be experienced within a pure parenting style, the moderation between strictness and motivations having the strongest effect. The motivational goals of the three student groups moderated by parenting are graphically represented in Figures 4.2.4-4.2.6.

The graphs show that neglectful parenting acts as a risk factor for each group of students, since the self-efficacy and mastery goals of students within this parenting style, whether at-risk, or typical, are lower than those experiencing a non-pure parenting style, while the self-handicapping strategies of students within this parenting style are higher. The converse is shown within the authoritative

parenting category. Permissive parenting shows some unexpected trends; however, in view of the very small sample size of this group these effects are likely to be non-significant.

From these graphs it appears that the strictness dimension alone, most evident in authoritarian parenting is connected with higher levels of self-handicapping in students at-risk, something which perhaps might be expected.

Figure 4.2.4 Self efficacy of student groups within each parenting style

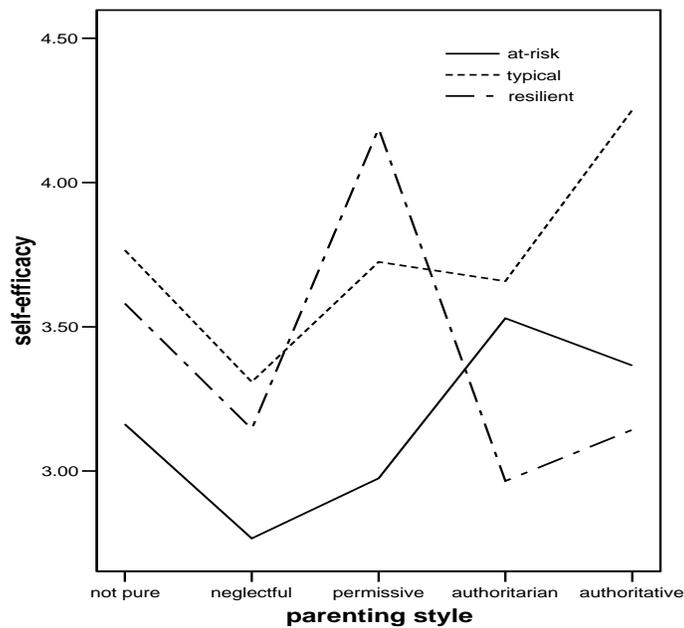


Figure 4.2.5 Self-handicapping of student groups within each parenting style

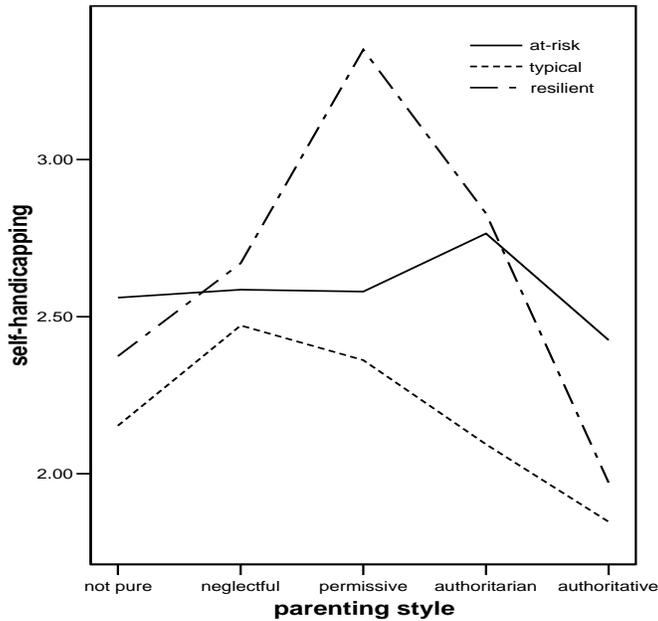
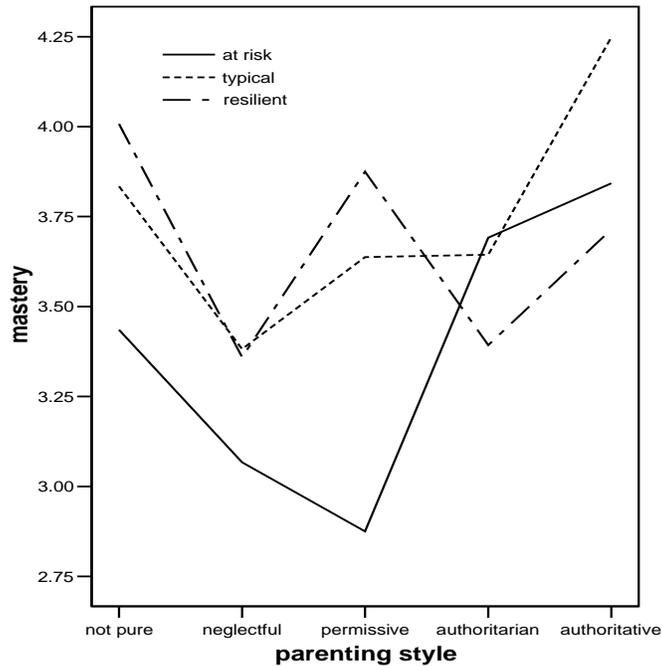


Figure 4.2.6 Mastery goals of student groups within each parenting style



4.2.7 Associations between parenting style and coping strategies

A multivariate analysis of variance (MANOVA) conducted to examine the coping strategy

differences between the three groups of students (N=1050) shows statistically significant differences between the three groups, $F(8, 2088) = 12.44, p < .001$, with a small size effect, partial eta squared (η_p^2) = .05. These differences are statistically significant for all coping strategies, however, positive coping, $F(2, 1047) = 31.88, p < .001$, partial eta squared (η_p^2) = .06, and projective coping, $F(2, 1047) = 15.37, p < .001$, partial eta squared (η_p^2) = .03, showed the biggest differences between student groups (Table 4.2.11). Students at-risk had the highest projective, denial and non-coping strategies, and the lowest positive coping strategies. There were no significant differences in any of the coping strategies of typical and resilient students.

Table 4.2.11 Means and standard deviations (S.D.) for motivational and coping strategies employed by the three groups of students

<i>Construct</i>	<i>Student at-risk (N = 218)</i>		<i>Typical student (N = 735)</i>		<i>Resilient student (N = 97)</i>	
	Mean	S.D.	Mean	S. D.	Mean	S.D.
projective coping	1.91	.72	1.64	.62	1.63	.70
denial coping	2.19	.70	2.04	.70	2.10	.75
non-coping	2.14	.73	1.97	.73	1.97	.88
positive coping	2.38	.71	2.82	.72	2.68	.78

In examining parenting dimension links, (model = intercept + strictness + warmth + group membership) with coping strategies a significant effect was found with strictness, $F(4, 1042) = 14.4, p < .001$, partial eta squared (η_p^2) = .05, indicating a small size effect, warmth, $F(4, 1042) = 9.00, p < .001$, partial eta squared (η_p^2) = .03, a small size effect, and group membership, $F(8, 2084) = 7.47, p < .001$, partial eta squared (η_p^2) = .03, a small size effect. Figures 4.2.7 – 4.2.8 show the positive and projective coping strategies of the three student groups by parenting style since these were the coping strategies most different between the three groups. As with the motivational strategies of the three groups of students, authoritative parenting appears to act as a protective factor since within this category students of all groups have elevated positive coping, and depressed projective coping, while the converse is evident for neglectful and permissive parenting.

Figure 4.2.7 Positive coping strategies of the three student groups by parenting style

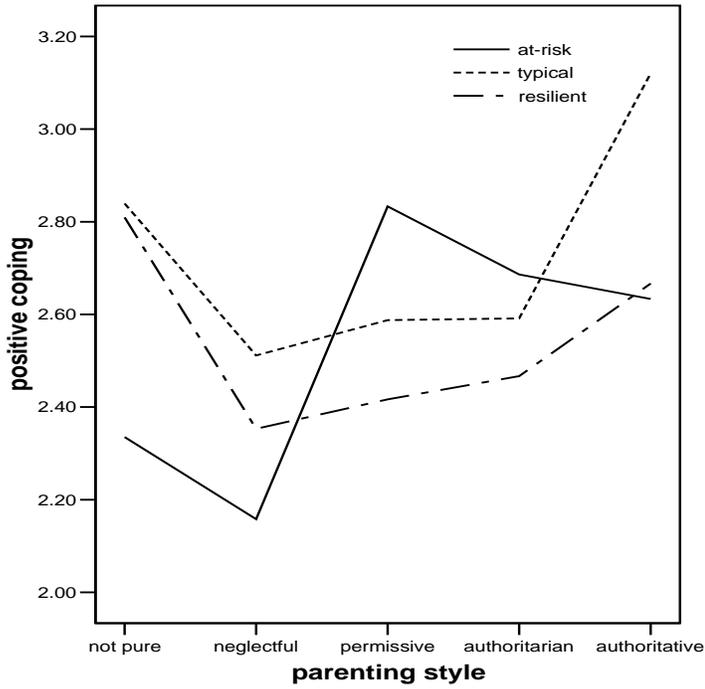
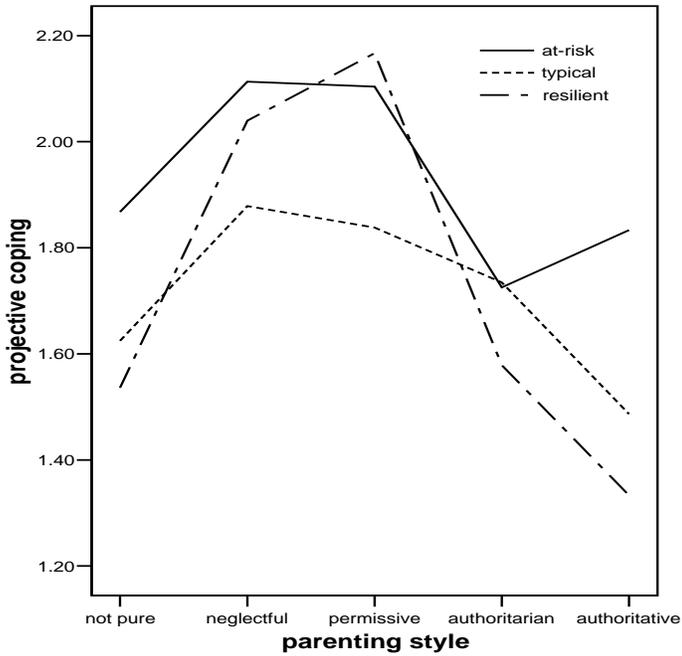


Figure 4.2.8 Projective coping by parenting style



4.2.8 Associations between parenting style and quality of school life perceptions

School life perceptions were examined next. A comparison of the three groups revealed a significant but small size effect, Wilk's lambda, $F(6, 2086) = 8.9, p < .001$, partial eta squared (η_p^2) = .03, a small size effect. All three indices contributed towards these differences (Table 4.2.12), with perceived school opportunity showing the smallest between group differences. Multiple (Bonferroni) comparisons indicate that resilient students are not significantly different from students at-risk in their reports of positive school affect and perceived school opportunity. However, their teacher relationship mean was significantly higher than that of students at-risk, though not significantly different from typical students. Typical students had significantly higher means in all school perceptions compared to students at-risk, at $p < .001$, and significantly higher means than resilient students in their perceptions of positive affect, at $p < .05$ (Table 4.2.12).

Table 4.2.12 Perception of school life means, S.D. and sample size (N) for three groups of students

	<i>at-risk</i> (N= 218)	<i>typical</i> (N= 735)	<i>resilient</i> (N= 97)
	Mean (S.D)	Mean (S.D)	Mean (S.D)
Positive school affect	12.00 (3.4)	13.45 (3.15)	12.60 (3.6)
Perceived school opportunity	16.70 (3.7)	17.65 (3.66)	16.90 (3.7)
Teacher relationships	14.98 (3.6)	16.78 (3.5)	16.08 (3.7)

Parenting dimensions were significantly linked with school perceptions, strictness $F(4, 1042) = 9.73, p < .001$, partial eta squared (η_p^2) = .06, a medium size effect, warmth, $F(4, 1042) = 9.73, p < .001$, partial eta squared (η_p^2) = .04 a small size effect while group membership effects diminished, $F(8, 2084) = 4.70, p < .001$, partial eta squared (η_p^2) = .02, a small size effect.

Inspection of Figures 4.2.9-4.2.11 illustrates parenting associations with the three school constructs; authoritative parenting is linked to higher teacher relationships, positive affect and perceived school opportunity in all 1050 students. Neglected parenting style on the other hand is linked to lower school life perceptions. In comparison to non-pure parenting authoritative parenting appears to act as a protective factor as it elevates the means of all school constructs, while neglectful parenting might be considered a risk factor, since it is associated with depressed means for all three constructs.

Figure 4.2.9 Perceived teacher relationships by parenting style

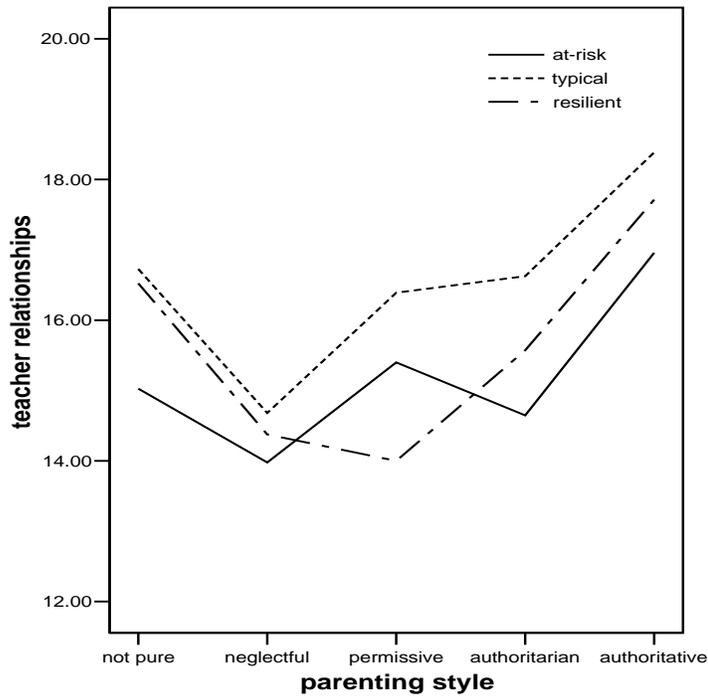


Figure 4.2.10 Perceived school opportunity by parenting style

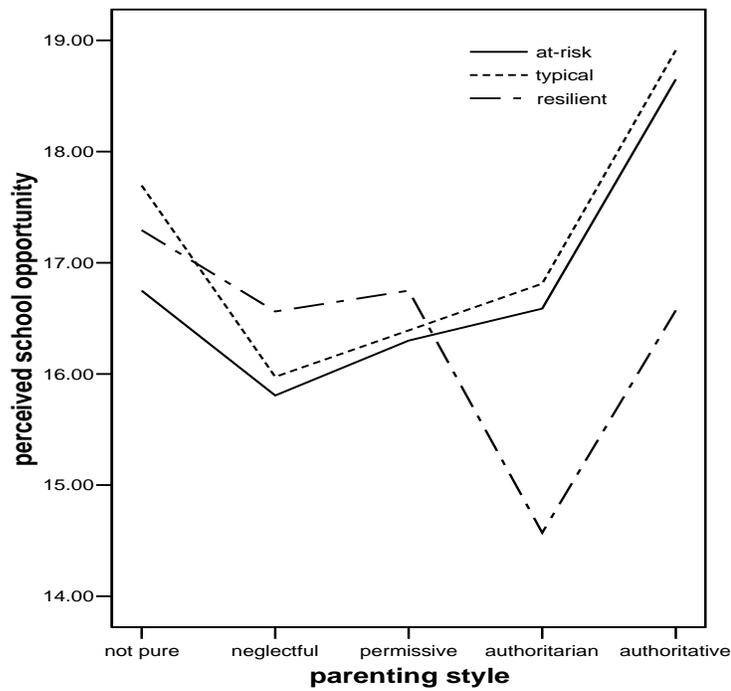
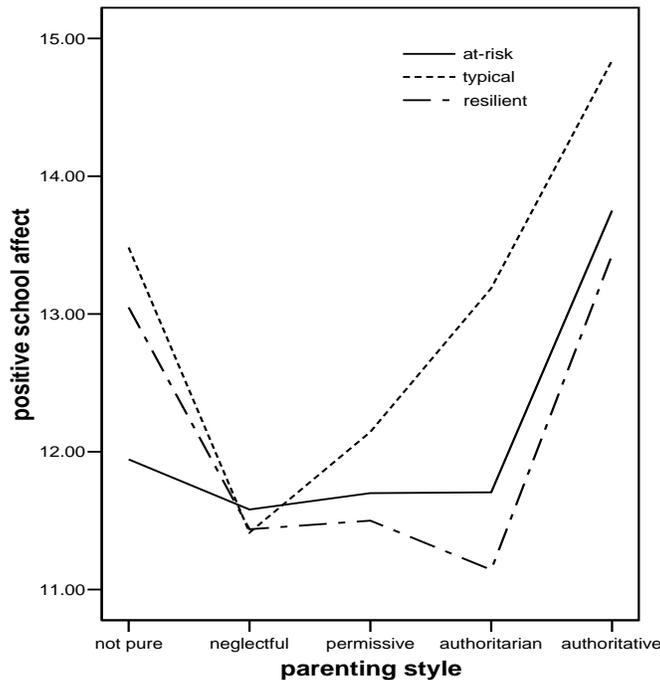


Figure 4.2.11 Positive school affect by parenting style



4.3 Ethnicity associations⁴

4.3.1 Associations between ethnicity, achievement and suspensions

Ethnicity is linked with being at-risk (N=1050) (Table 4.3) $\chi^2 = 15.96$, $df = 1$, $p < .001$, accounting for 12% (contingency coefficient) of the variability found in students who are failing mathematics/English. 35.9% of Indigenous students are at-risk of academic failure compared to 19.1% of non-Indigenous students (Table 4.1). Higher suspension rates (N=1050), (Table 4.3.1), $\chi^2 = 11.55$, $df = 2$, $p < .001$, accounting for 10.5% (contingency coefficient) of the variability associated with suspensions, are also reported by Indigenous students. Nearly twice as many Indigenous as non-Indigenous students have experienced one or more suspensions (Table 4.3.1). It is, therefore, considered important to perform independent analyses for ethnicity to explore possible differences

⁴ SPSS software uses Type III SS method to deal with unbalanced models with unbalanced sample sizes, as are observed here with regards to Indigenous and non-Indigenous students. Type III SS method calculates the reduction in Error SS by adding the effect after all the other effects are adjusted.

between Indigenous and non-Indigenous students in their optimism, motivational goals, coping strategies and perceptions of school and within group differences for Indigenous students who are resilient, at-risk or typical.

Table 4.3.1 Associations between ethnicity and suspension level

		<i>Suspension</i>		<i>Total N</i>
		never	Once/many times	
Indigenous	% within ethnic background	69.9	30.1	103
Non-Indigenous	% within ethnic background	83.4	16.6	947
Total	Count	862	188	1050

4.3.2 Within-group associations for parenting dimensions

As was shown earlier, (Tables 4.1.2 and 4.2) there is a significant link between family structure and being at-risk for Indigenous students and there is a disproportionate representation of Indigenous students within the neglectful parenting category. A multivariate analysis of variance (MANOVA) was conducted to examine parenting dimension differences in typical, resilient and students at-risk within the Indigenous group (N= 103). Results show statistically significant differences between the three groups, Wilk's Lambda $F(4,198)= 2.99, p<.01$, with a moderate size effect, partial eta squared (η_p^2) = .06. This difference is related to warmth, $F(2,100)= 3.07, p<.05$, partial eta squared (η_p^2) = .06 and strictness, $F(2,100)= 4.9, p<.001$, partial eta squared (η_p^2) = .09, both moderate size effects. Post hoc comparisons (Bonferroni) indicate that significant differences occur between typical and students at-risk in the warmth dimension and between students at-risk and the other two groups in the strictness dimension (Table 4.3.2).

Table 4.3.2 Parenting dimension means and standard deviations (S.D.) for three groups of Indigenous students

<i>Parenting dimension</i>	<i>at-risk (N=37)</i>		<i>Typical (N=52)</i>		<i>Resilient (N=14)</i>	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
warmth	.77	.12	.83	.10	.81	.14
strictness	.74	.18	.83	.17	.89	.15

4.3.3 Associations between ethnicity and optimism

ANOVAs were performed to examine differences between Indigenous and non-Indigenous

students' optimism levels (N=1050). Results of the analysis examining the association of ethnicity with optimism indicates that ethnicity has a small but significant effect upon optimism levels, (Table 4.3.3) $F(1,1048)=7.99, p<.005$, partial eta squared (η_p^2) =.01, with Indigenous students having lower levels of optimism.

Table 4.3.3 Mean, SD and sample size of optimism levels in Indigenous and non-Indigenous students

<i>Background</i>	<i>Mean</i>	<i>S.D.</i>	<i>N</i>
Indigenous	16.60	5.13	106
non-Indigenous	18.17	5.36	947

ANOVAs were performed to examine differences between the three groups of Indigenous students' optimism levels (N=103). Results of the analysis indicates that there are no significant differences between the three groups at $p<.05$.

Table 4.3.4 Optimism, mean, S.D. and sample size for three groups of Indigenous students

	<i>at-risk</i>			<i>typical</i>			<i>resilient</i>		
	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
optimism	15.50	4.43	37	17.00	5.18	52	18.07	6.36	14

4.3.4 Associations between ethnicity and motivational goals

A multivariate analysis of variance (MANOVA) conducted to examine the motivational goal differences between the two groups of students (N=1050) shows statistically significant differences between the two groups, $F(3,1046)=6.44, p<.002$, partial eta squared (η_p^2) = .02, with a small size effect. This difference is related to self-handicapping, $F(1,1048)=16.61, p<.001$, partial eta squared (η_p^2) = .02 which is higher in Indigenous students than in non-Indigenous students and academic self-efficacy $F(1,1048)=3.33, p<.05$, partial eta squared (η_p^2) = .04 which is lower in Indigenous students (Table 4.3.5).

Table 4.3.5 Means, SD and sample size (N) of motivational goals of Indigenous and non-Indigenous students

	<i>ethnic background</i>					
	Indigenous			non-Indigenous		
	Mean	S. D.	N	Mean	S. D.	N
academic self- efficacy	3.48	1.00	103	3.67	.89	947
mastery goals	3.72	1.05	103	3.75	.94	947
self-handicapping	2.62	1.03	103	2.22	.93	947

A multivariate analysis of variance (MANOVA) conducted to examine the motivational goal differences between the three groups of Indigenous students. Results show no statistically significant differences between the three groups, at $p < .05$.

Table 4.3.6 Means, SD and sample size (N) of motivational goals of three groups of Indigenous students

	<i>at-risk</i>			<i>typical</i>			<i>resilient</i>		
	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N
academic self efficacy	3.19	1.05	37	3.60	1.00	52	3.79	.65	14
mastery	3.36	.99	37	3.89	1.07	52	4.07	.96	14
self- handicapping	2.58	.90	37	2.69	1.10	52	2.43	1.15	14

4.3.5 Associations between ethnicity and coping strategies

A multivariate analysis of variance (MANOVA) was conducted to examine any coping strategy differences between the two groups of students (N= 1050). Results show statistically significant differences between the two groups, Wilk's Lambda $F(4,1045) = 2.7, p < .03$, with a small size effect, partial eta squared (η_p^2) = .01. This difference is only due to positive coping, $F(1,1048) = 9.6, p < .003$, partial eta squared (η_p^2) = .01 which is significantly lower in Indigenous students than in non-Indigenous students (Table 4.3.7).

Table 4.3.7 Means, standard deviation (S.D.) and sample size (N) of coping strategies in Indigenous and non-Indigenous students

	<i>Ethnic background</i>	<i>Mean</i>	<i>S. D.</i>	<i>N</i>
non-coping	Indigenous	2.02	.74	103
	non-Indigenous	2.01	.75	947
projective coping	Indigenous	1.78	.69	103
	non-Indigenous	1.69	.66	947
denial coping	Indigenous	2.12	.74	103
	non-Indigenous	2.07	.70	947
positive coping	Indigenous	2.50	.81	103
	non-Indigenous	2.75	.82	947

A MANOVA test for differences between the three groups of Indigenous students (N=103) showed no significant differences at $p < .05$.

4.3.6 Associations between ethnicity and perceptions of school life

In order to test whether school life perceptions account for the association found between failing mathematics/English and Indigenous students, a multivariate comparison of the two groups (2) by teacher relationships, perceived school opportunity and positive school affect (3) was conducted (N=1050). However, no significant differences between the two groups were detected (Table 4.3.8). This suggests that positive or negative school perceptions are not dependent on ethnicity in the sample of this study.

Table 4.3.8 Means, S.D. and sample size (N) of perceptions of school life in Indigenous and non-Indigenous students

<i>School life perceptions</i>	<i>ethnic background</i>					
	Indigenous			non-Indigenous		
	Mean	S.D.	N	Mean	S.D.	N
positive school affect	13.06	3.57	103	13.07	3.27	947
perceived school opportunity	17.22	4.33	103	17.40	3.61	947
teacher relationships	15.83	3.92	103	16.40	3.58	947

Analyses of the school perceptions differences between the three groups of Indigenous students revealed no significant differences at $p < .05$, perhaps because the sample sizes are too small. It appears therefore that school perceptions are the same for both Indigenous and non-Indigenous students. Moreover, within the Indigenous group of students school perceptions are similar irrespective of whether the student is at-risk, resilient or typical. Perhaps this suggests that there are other more relevant non-school factors associated with the development of at-risk status in Indigenous students.

4.4 Summary of comparisons and student profiles

Graphical representations of all differences between student groups are shown in Figures 4.4.1, 4.4.2, 4.4.3 and 4.4.4.

Figure 4.4.1 Optimism and school life perceptions by student group

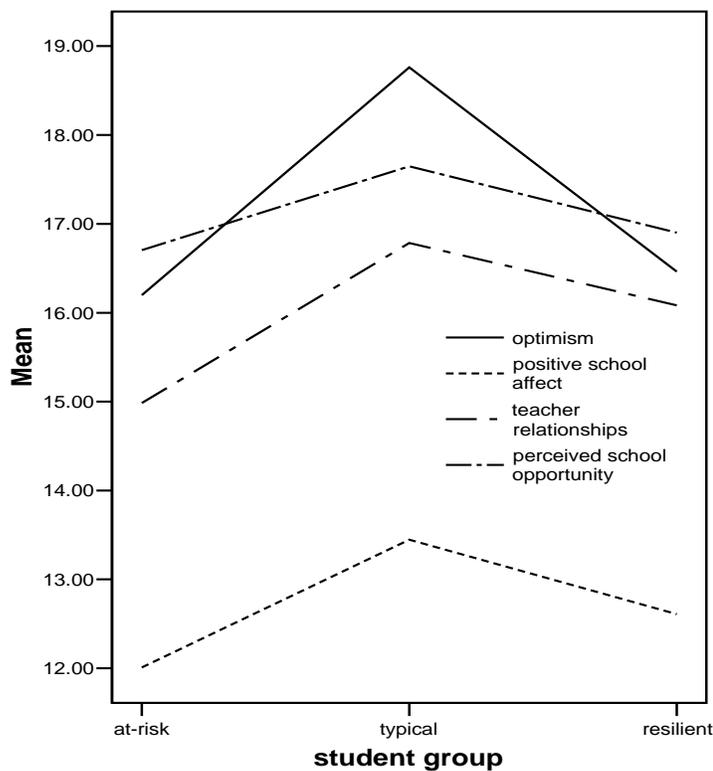


Figure 4.4.2 Parenting dimensions by student group

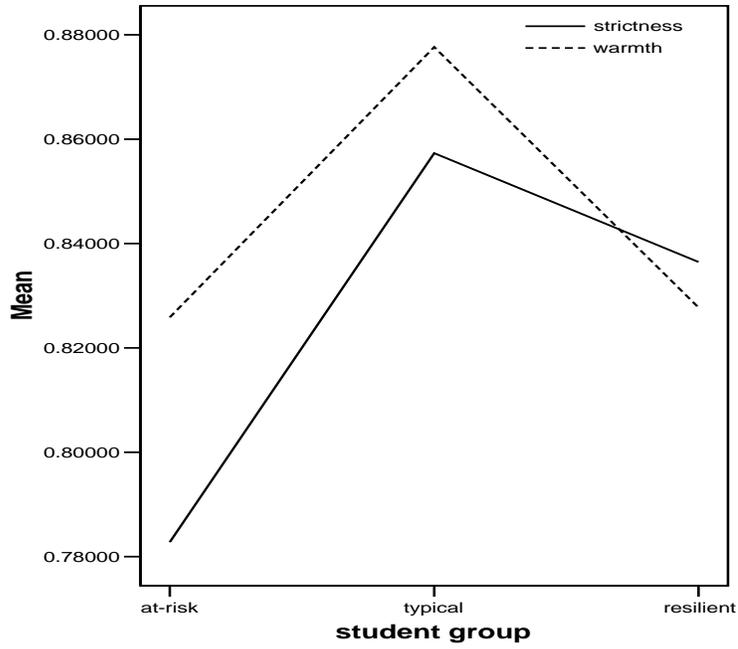


Figure 4.4.3 Motivations by student group

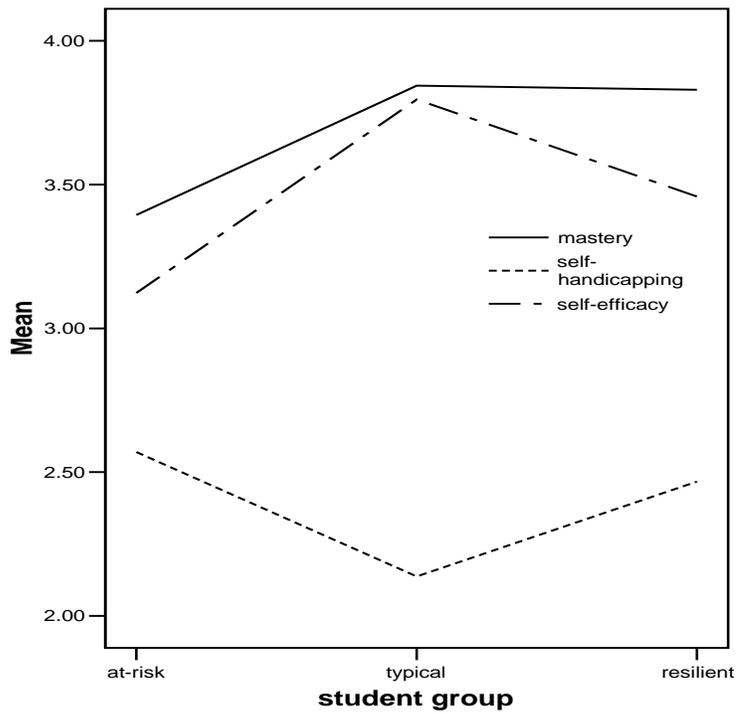
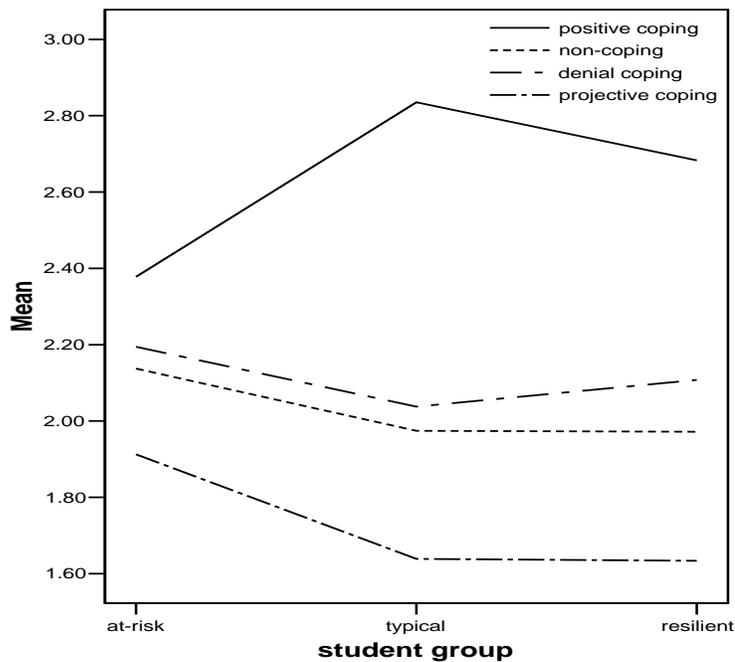


Figure 4.4.4 Coping strategies by student group



Regressions (Table 4.4) were performed to find the strongest predictor for achievement for each group of students and aid in the construction of student profiles.

Table 4.4 Stepwise regression analyses for achievement for the different groups of students

Step and predictor variable		<i>B</i>	<i>S. E.</i>	β	R^2	ΔR^2	<i>p</i>
Resilient students (N=97)	1. academic self-efficacy	.404	.133	.298	.089	.089	.003
	2. academic self-efficacy warmth	.328 3.959	.136 1.836	.242 .216	.132	.043	.005 .017
Typical students (N= 735)	1. academic self-efficacy	.629	.054	.395	.156	.156	.001
	2. academic self-efficacy self-handicapping	.565 -.277	.054 .052	.356 -.174	.184	.032	.001 .001
Students at-risk (N=218)	1. optimism	.042	.014	.204	.042	.042	.003
	2. optimism	.037	.014	.179	.070	.029	.008
Indigenous students (N=103)	projective coping	-.229	.089	-.172			.01
	1. academic self-efficacy	.711	.173	.379	.144	.144	.001
	2. academic self-efficacy strictness/supervision	.500 4.114	.187 1.589	.267 .259	.198	.054	.009 .011

NB. *B*, unstandardised coefficient; *S.E.*, the standard error; β , standardized coefficient; R^2 , variance explained by the model; ΔR^2 , change in variance explained at each step of the regression model; *p*, probability .

The regression results above suggest some within group differences in regards to higher academic achievement. In other words, while there are significant differences between student groups in the constructs examined, there are additional differences within each group between those students who attain lower and higher academic achievement. Thus, achievement related nuances suggest that:

Typical students who report a greater level of academic self-efficacy and employ fewer self-handicapping strategies, achieve higher grades;

Resilient students who report higher levels of academic self-efficacy and parental warmth, achieve higher grades;

Indigenous students who report higher academic self-efficacy and parental strictness, achieve higher grades;

Students at-risk who report higher optimism and lower projective coping strategies, have the highest grades in the group.

In sum, academic self-efficacy seems to be the most important predictor of achievement for students not at-risk of academic failure. Self-handicapping and projective coping are significant strategies that are inversely related to achievement. Optimism seems to play a significant role in students at-risk' achievement outcomes while parenting variables may be thought of as bringing to bear additional support for achievement in resilient and Indigenous students.

4.4.1 Resilient student profile (N=97)

Table 4.4.1 Resilient students' demographics

<i>Demographics</i>		<i>Resilient student</i>	
		Count	%
Year level	Year 8	43	44.3
	Year 9	29	29.9
	Year 10	25	25.8
ethnic background	Indigenous	14	14.4
	non-Indigenous	83	85.6
overall suspension	never	81	83.5
	once/many times	16	16.5
father's work	unemployed/don't know	50	51.5
	employed	47	48.5
mother's work	unemployed/don't know	83	85.6
	employed	14	14.4
father's education	non-graduate	97	100.0
mother's education	non-graduate	97	100.0
family structure	blended family	52	53.6
	both biological parents	45	46.4

Incidence: numbers decline from Year 8 to Year 10

Achievement: increased academic self-efficacy levels enhance achievement within the group, as well as increased levels of the warmth dimension of parenting

Gender mix: 49% male, 51% female; no significant links with gender

Suspensions: low levels, similar to typical students

Family structure: a higher proportion of blended family structures than typical students, fewer students living with biological parents compared to typical students; in general, family structures of resilient students resemble those of students at-risk.

Parenting perceptions: perceived strictness/supervision dimension mean of parenting is not significantly different to that reported by typical students, while the perceived warmth dimension is lower than typical students but similar to that reported by students at-risk. Of the 97 resilient students in the sample, 34 reported a pure parenting style, with higher than expected (based on statistical probability) neglectful parenting incidences.

Optimism: reported mean is lower than that of typical students but above that of students at-risk. Parenting dimensions were linked to optimism levels, with higher means of parenting dimensions being linked with higher optimism, such that students experiencing authoritative parenting are the most optimistic.

Motivational goals: academic self-efficacy and mastery goals are higher than that of students at-risk. *This might be a key difference between resilient students and students at-risk.* Self-handicapping levels are lower than that of students at-risk but above that of typical students. High levels in the two parenting dimensions such as might be experienced in authoritative parenting contexts are linked to higher self-efficacy and mastery goals and lower self-handicapping strategies.

Coping strategies: resilient students use similar coping strategies to those of typical students. Positive coping is lower than that reported by typical students but higher than student at-risk levels. High levels of the two parenting dimensions, as might be experienced through authoritative parenting, are linked to higher positive and lower projective coping strategies within the group.

School life perceptions: positive school affect mean is in between that of the other two groups, however, teacher relationships and perceived school opportunity means are the same as that of typical students. High levels of the two parenting dimensions, such as might be experienced through authoritative parenting are linked to the highest levels of all school perceptions.

4.4.2 Student at-risk profile (N=218)

Table 4.4.2 Students' at-risk demographics

<i>Demographics</i>		<i>Student at-risk</i>	
		Count	%
Year level	Year 8	56	25.7
	Year 9	69	31.7
	Year 10	93	42.7
ethnic background	Indigenous	37	17.0
	non-Indigenous	181	83.0
overall suspension	never	121	55.5
	once/many times	97	44.5
father's work	unemployed/don't know	55	25.2
	employed	163	74.8
mother's work	unemployed/don't know	83	38.1
	employed	135	61.9
father's education	non-graduate	196	89.9
	graduate	22	10.1
mother's education	non-graduate	191	87.6
	graduate	27	12.4
family ecology	blended family	127	58.3
	both biological parents	91	41.7

Incidence: numbers increase from Year 8 to Year 10 in non-Indigenous students, but there is no such trend in the Indigenous sample.

Achievement: this is highest within the group when there is a high level of optimism and a lower level of projective coping. Achievement levels are higher in authoritative and authoritarian parenting contexts.

Gender mix: 51.4% male, 48.6% female; no significant links with gender in either Indigenous or non-Indigenous groups

Suspensions: highest rates of all students.

Family structure: these students have a significantly higher proportion of blended family structures than typical students.

Parenting perceptions: these students reported the lowest warmth and strictness parenting dimensions. They also represent the highest numbers of neglected perceived parenting.

Optimism: students at-risk are the most pessimistic of all students. However, high levels of parenting dimensions, such as might be experienced through authoritative parenting, are associated with higher optimism.

Motivational goals: these students have the lowest self –efficacy and mastery goals and the highest self-handicapping levels of all groups. Lower levels of parenting dimensions, such as might be experienced through neglectful parenting, are linked to even lower self-efficacy and mastery and higher self-handicapping while high levels of these dimensions are linked to higher self-efficacy and mastery goals and depressed self-handicapping within the group.

Coping strategies: projective coping strategies are the most commonly employed coping strategies in this group, while positive coping is least employed. High parenting dimensions are linked with elevated positive coping strategies and lower projective coping.

School life perceptions: this group reported the lowest positive school affect, teacher relationships and perceived opportunities. Depressed parenting dimensions are linked with even lower positive school affect, teacher relationships and perceived school opportunity. It is significant that, once again, parenting moderated school perceptions, such that authoritative parenting was linked to school perceptions as high as those of typical and resilient students.

4.4.3 Indigenous student profile (N = 103)

Table 4.4.3 Indigenous students’ demographics

<i>Demographics</i>		<i>Indigenous student</i>	
		Count	%
Year level	Year 8	38	36.9
	Year 9	44	42.7
	Year 10	21	20.4
ethnic background	Indigenous	103	100.0
overall suspension	never	72	69.9
	once/many times	31	30.1
	father's work	unemployed/don't know	32
mother's work	employed	71	68.9
	unemployed/don't know	41	39.8
father’s education	employed	62	60.2
	non-graduate	93	90.3
mother’s education	graduate	10	9.7
	non-graduate	89	86.4
family ecology	graduate	14	13.6
	blended family	62	60.2
	both biological parents	41	39.8

In comparison to non – Indigenous students, Indigenous students are more likely to be at-risk of failing mathematics and English and have higher suspension rates.

Achievement: for Indigenous students this is highest when higher academic self-efficacy and parental strictness/supervision levels are present.

Family structure: Indigenous students reported more blended family structures than non-Indigenous students and this was significantly linked to being at-risk within the group.

Parenting perceptions: Indigenous students reported significantly lower levels of warmth and strictness dimensions than non-Indigenous students. Considering pure parenting incidence, 61.1% of Indigenous students reported neglectful parenting. Within group differences indicate that resilient students have significantly higher means in the strictness dimension of parenting than those students at-risk.

Optimism: Indigenous students are more pessimistic than non-Indigenous students though higher parenting dimension means are linked to higher optimism in the group. There are no within group differences in optimism.

Motivational goals: Mastery goals of Indigenous students are the same as those of non-Indigenous students however, a greater tendency to self-handicap was reported by Indigenous students. The Indigenous students' self-handicapping mean, 2.62, is comparable to that of students at-risk of academic failure, 2.57. Self-efficacy beliefs were lower in Indigenous students than in non-Indigenous students. No within group differences were discerned at $p < .05$ due to the small sample size of the at-risk and resilient groups.

Coping strategies: Indigenous students report lower positive coping than non-Indigenous students but other coping strategies were similar in the two groups. No within group differences were discerned at $p < .05$ due to the small sample size of the at-risk and resilient groups.

School life perceptions: no differences were detected between Indigenous and non-Indigenous groups with regards to these perceptions and there were no within group differences discerned at $p < .05$ due to the small sample size of the at-risk and resilient groups.

4.5 Structural Equation (SEM) models unifying results

The questions that SEM modelling techniques are employed to answer are:

1. Are school perceptions related to motivational goals, coping strategies and/or parenting perceptions?
2. Are parenting perceptions connected to motivational goals and if so are they mediated by optimism?
3. Are mesosystem interactions evident/ absent in each group of students?

4. Are socioeconomic status (SES) variables, including Indigenous status, linked to achievement outcomes directly or via their links with psychological constructs?
5. Does parenting predict achievement (or student at-risk status) independently or is it mediated by an expectancy orientation? Do any of the variables assessed in this study act as protective factors?

The above questions relate to relationships amongst hypothetical constructs (or latent variables) that are not directly measurable or observable. Complex latent variables, such as motivation, optimism and school life perception, are typically measured using a larger number of indicator variables and, as a means of data reduction, it is commonplace to compute these complex latent or composite variables by combining the indicator variables in some additive manner. Often, such composites have been computed using a simple, unit-weighted, addition of the indicator variables regardless of either the measurement properties of the constituent variables, or their relative contribution to the composites. The derived composite variables are then treated as continuous variables in omnibus general linear models techniques (e.g., multiple regression), which assume that such composites are measured without error. This technique leads to at least two problems when trying to model complex relationships amongst the composite scales. First, the unit-weight addition of indicator variables in the formation of composite scales ignores the possibility that some indicators may contribute more to the measurement of the underlying latent trait than others. Second, unit-weight addition of indicator variables may lead to the creation of composites with low construct validity.

Baron and Kenny (1986) recommend the use of latent-variable structural modelling techniques (SEM) to help overcome the problems associated with the effects of measurement errors and correlated measurement errors on the outcome variables, particularly where mediators are proposed in a cross-sectional study such as the present one. Moreover, SEM techniques minimise unreliability and account for measurement error in both the observed and latent variables, while simultaneously estimating the measurement properties of latent variables and the structural relationships among them. The measurement part of these models allow for unequal contributions of indicator variables towards the measurement of latent variables and the models will fit only when the indicator variables associated with any one latent variable are valid indicators of that trait. Consequently, a SEM approach has been adopted.

Following the founders of SEM who declared that “prior knowledge of the causal relations is assumed as prerequisite” (Wright, 1923, p.240) in the theory of path coefficients, interpreting each

structural equation as a statement about a hypothetical controlled experiment (Haavelmo, 1943), the theoretical models are *drawn* as causal, based on the assumptions that:

1. exogenous (independent) variables precede endogenous (dependent) variables,
2. some mechanism whereby this causal effect operates can be proposed,
3. a change in the value of an exogenous variable is accompanied by a change in the value of an endogenous variable,
4. the effects of exogenous variables on the endogenous variables can be isolated from the effects of other potential variables on the endogenous variable.

However, since social scientists of today see SEM as summaries of covariance matrices (Pearl, 2000) and since the data of this study are not longitudinal causality is not claimed; rather the models are used for their predictive utility in the case where interventions may be applied (Freedman, 1997). Theory has determined model construction. The relationships proposed in the models are based upon relationships hypothesized from prior research findings, which imply that parenting factors are likely to socialize for other constructs, because, in general, parenting influences precede other socializing influences. For example, recent longitudinal research on the effects of parenting upon motivation indicates that parenting precedes motivation, though the effects noted were only supported over one year (Guay, Senecal, Marsh & Dowson, 2005). The same study, which was based on older adolescents, purports that the effects between parenting and motivation are reciprocal. However, the results reported show a negligible effect from motivation to parenting relationships (Guay, Senecal, Marsh & Dowson, 2005). Because these researchers measured motivation by the Academic Motivation Scales, designed to measure self-concept rather than self-efficacy, the scale used here, their results may not be pertinent to the current research. Theorists in motivation research differentiate between self-concept and self-efficacy in that self-efficacy revolves round questions of “can”, e.g., “Can I solve this problem?” whereas self-concept is typically concerned with beliefs about “being” and “feeling” e.g., “How do I feel about myself as a mathematician?” (Pajares & Schunk, 2001)

Regarding achievement and motivational goals, previous studies purporting reciprocal effects between the two have not met the strict methodological criteria that researchers in the field recommend (Marsh, Byrne & Yeung, 1999) though some researchers contend that a reciprocal relationship between motivation and achievement exists (Guay, Marsh & Boivin, 2003; Marsh & Yeung, 1997).

Causal reciprocal relations between motivation and achievement have not however, been clearly and unequivocally determined when self-concept measures are used. For example, a study designed to assess the effects of motivation upon achievement early and later in a semester, showed that general mathematics self-concept (based on algebra) did not directly predict achievement in a new geometry course. Instead its relation to achievement later in the semester was via topic-specific self-efficacy beliefs (Pokay & Blumenfeld, 1990). That is, the study showed that after exposure to the mathematics topic in question (geometry), self-concept⁵ for that topic predicted achievement late in the semester.

The causality issue has not been contentious in self-efficacy research because the causal influence of self-efficacy upon academic performance has been repeatedly demonstrated in experimental studies showing that increases in self-efficacy were accompanied by increases in performance (e.g., Schunk, 1982a, 1982b, 1983a, 1983b, 1984a, 1984b, 1984c, Schunk et al., 1987; Schunk & Swartz, 1993) even when general mental ability was controlled (Pajares & Kranzler, 1995). Furthermore, self-efficacy in the current study tested global academic competence beliefs rather than subject specific ones since the outcome variable used is based on both mathematics and English grades. Because there is significant evidence for the correlation of self-efficacy across subject areas (Borg, 2001; 1997), it is hypothesized that the self-efficacy measures obtained thus relate to students' general academic competence beliefs and as such are not subject to specific immediate prior achievement, although prior academic achievement throughout school might have had a cumulative effect in shaping those beliefs.

Since Ames (1992) argued that the most important influences on student motivation is anticipated evaluation, the temporal variability of motivational goals was tested by Butler (2005). Butler (2005) showed that a particular motivational goal orientation is most likely to be linked to achievement if it is measured immediately prior to an evaluation task. Butler observed that improvements on achievement were associated with mastery rather than a performance goal orientation. Moreover, if, as a result of an assessment task, teacher evaluation was not anticipated, both mastery and performance motivational goals were low (Butler, 2006).

⁵ Self-concept was measured by items that would best be defined as self-efficacy for geometry.

It is hypothesized therefore, that the data gathered about achievement motivation in this study, which were obtained on a single occasion 4 - 7 weeks after a mid-year break following the first school semester, are indicative of the orientation students adopt when removed from the prospect of an imminent evaluation. As such, they are more likely to reflect students' dispositional goal orientation or typical approach to school work, and less likely to be moderated by immediate prior achievement. This view however, as well as any arguments about the reciprocal nature of the relations between self-efficacy and achievement, cannot be confirmed in a cross-sectional study. Cross-sectional studies can only examine associations between variables.

The AMOS software program, using maximum likelihood estimation, generated all SEM models. The models proposed are based on theoretical considerations arising from the literature reviewed. The underlying hypotheses are:

- 1 Parenting will be linked to achievement via its links with mastery, self-handicapping and self-efficacy
- 2 SES factors will be linked to parenting dimensions
- 3 Parenting and school dimensions will be positively associated for typical students (based on Bronfenbrenner's postulates)
- 4 Optimism will be positively associated with parenting and school dimensions in typical students and will act as a moderator of self-handicapping
- 5 School dimensions will be positively linked with mastery, and positive coping

Correlations between the predictor variables, (Table 4.5.1), the results of the analyses computed using MANOVAs and regression analyses, informed decisions as to which variables should be included in the SEM models. As positive coping is highly correlated with achievement and its use discriminates between the groups of students only this coping strategy is used in the SEM models.

Latent variables (LV) included in the models are:

1. School life perceptions (QSL), 3 indicators, teacher relationships, perceived school opportunity and positive affect at school
2. Parenting, 2 indicators, parental warmth and strictness, each having 5 item indicators
3. Mastery goals, 4 item indicators
4. Self efficacy, 4 item indicators
5. Self handicapping, 4 item indicators

6. Positive coping, 3 item indicators
7. Achievement, 2 indicators, mathematics and English achievement, each having 5 possible categories

Observed variables included mother's employment and graduate status, father's employment and graduate status, ethnicity, optimism, and family structure. Family structure was included because a significant association has been identified between family structure and being at-risk, based on a chi square independence test with a $\chi^2 = 27.6$, $df = 1$, $p < .001$, accounting for 17.1% of the observed variance validating previous research (Astone, & McLanahan, 1991).

Before SEM procedures were undertaken, a number of regressions were performed to examine the separate effects of each variable on the achievement of Indigenous, typical, resilient and students at-risk. The results of these regressions were summarised in Table 4.4. Results show that academic self-efficacy is most likely to be associated with achievement in all but students at-risk, with parental warmth being significant for resilient student's achievement, self-handicapping and mastery goals being negatively connected with typical students' achievement, and strictness/supervision being positively related to Indigenous students achievement. Student's at-risk achievement was positively related to optimism and negatively related to projective coping.

Correlation results reveal that academic self-efficacy has the largest connection with achievement. Mastery goals are highly correlated with academic self-efficacy, while optimism is highly correlated with academic self-efficacy, mastery goals and positive coping. At the same time achievement is positively correlated to teacher relationships, which in turn are positively correlated to optimism, mastery goals, academic self-efficacy, positive coping, parental warmth and strictness. Thus there are potentially several relationships working to support achievement. SEM permits the simultaneous estimation of the strength of these relations by providing estimates of the regressions between the outcome variable and those associated with it both directly and indirectly using a rationale similar to that recommended by Baron and Kenny (1986). Whether a factor is mediated by another can be tested by following Baron and Kenny's (1986) procedure. Consider factors A and B impacting upon C. A test of mediation of B between A and C is confirmed if the impact of A on C is reduced after controlling for B. A multiple regression with C as the dependent variable and A and B as predictors confirms the mediation of B if the partial correlation between A and C is much lower than the raw (Pearson's) correlation between them.

In all structural equation models the exogenous variables are allowed to be correlated and for the sake of clarity the double headed arrows showing these correlations and the error terms associated with endogenous variables and/or measured variables have been omitted from the figures. The first SEM model tested to fit the data, (Fig. 4.5.1) Model A, accounts for socio-economic structural variables predicting achievement. This model accounts for 24% of the variance (R^2)⁶ in achievement. All regressions (regression beta weights) (β) are significant $p < .001$ level. Fit statistics indicate that the data are well described by this model (Table 4.5.1). The variables employed in the SEM and their coding is:

Variable name	Coding
Family structure	0= non-biological or blended family 1= living with both biological parents
Father's Graduate status	0 =non-graduate 1= graduate
Mother's Graduate status	0 =non-graduate 1= graduate
Father's work status	0= unemployed 1= employed
Mother's work status	0= unemployed 1= employed
Ethnicity	0= non-Indigenous 1= Indigenous
Suspensions	0= never 1= once/many times

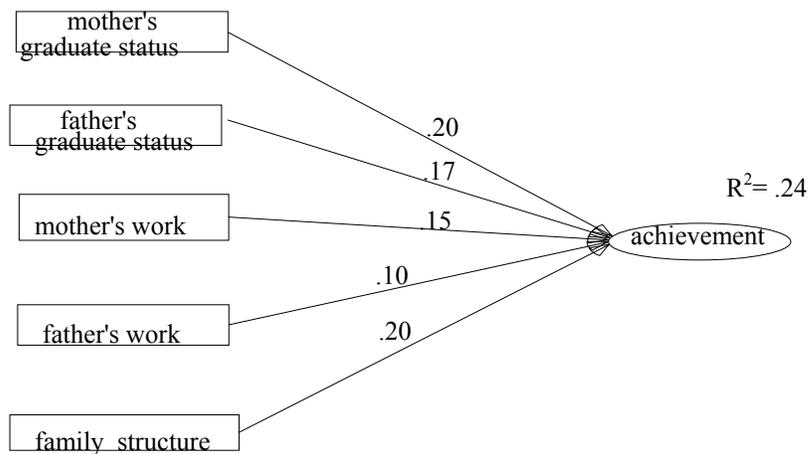
⁶ NOTE: There is one R-squared (R^2) or squared multiple correlations (smc) for each endogenous (dependent) variable in the model. It is the percentage variance explained in that variable.

Table 4.5.1 Pearson correlations between predictor variables and achievement (N = 1050)

	1	2	3	4	5	6	7	8	9	10	11	12
1. achievement	1	.27*	.23*	.16*	.28*	-.22*	.26*	.22*	.25*	.24*	-.27*	.43*
2. optimism	.27*	1	.46*	.38*	.40*	-.28*	.37*	.31*	.29*	.37*	-.29*	.41*
3. positive school affect	.23*	.46*	1	.63*	.63*	-.26*	.41*	.24*	.31*	.48*	-.21*	.39*
4. perceived school opportunity	.16*	.38*	.63*	1	.61*	-.22*	.35*	.22*	.25*	.48*	-.12*	.38*
5. teacher relationships	.28*	.40*	.63*	.61*	1	-.39*	.36*	.27*	.29*	.39*	-.23*	.36*
6. projective coping	-.22*	-.28*	-.26*	-.22*	-.39*	1	-.19*	-.13*	-.19*	-.22*	.37*	-.19*
7. positive coping	.26*	.37*	.41*	.35*	.36*	-.19*	1	.22*	.28*	.50*	-.19*	.45*
8. warmth	.22*	.31*	.24*	.22*	.27*	-.13*	.22*	1	.33*	.22*	-.17*	.28*
9. strictness	.25*	.29*	.31*	.25*	.29*	-.19*	.28*	.33*	1	.30*	-.22*	.30*
10. mastery	.24*	.37*	.48*	.48*	.39*	-.22*	.50*	.22*	.30*	1	-.12*	.55*
11. self handicapping	-.27*	-.29*	-.21*	-.12*	-.23*	.37*	-.19*	-.17*	-.22*	-.12*	1	-.19*
12. self efficacy	.43*	.41*	.39*	.38*	.36*	-.19*	.45*	.28*	.30*	.55*	-.19*	1

* Correlation is significant at the 0.01 level (2-tailed).

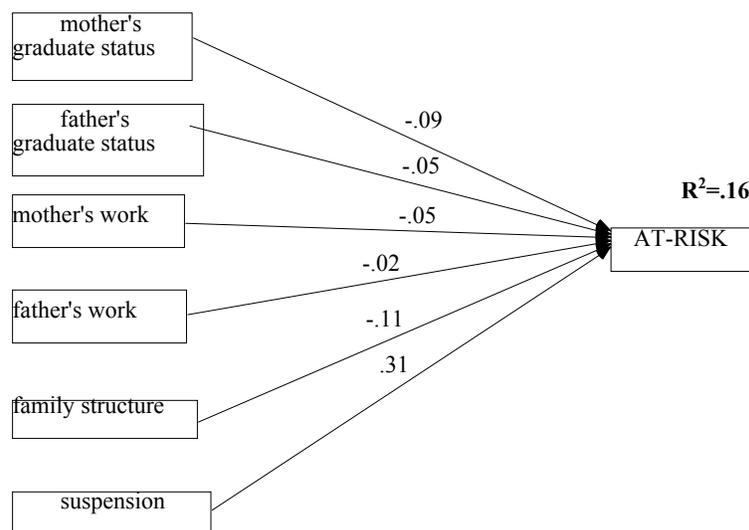
Figure 4.5.1 Model A (N = 1050)



Thus it appears that SES variables are directly linked to achievement. In order to improve the amount of variance accounted for by the model, ethnic background was added as an observed predictor. However, the results, though significant did not increase the amount of variance accounted for by the model and the fit of the data to the model indicated by the fit statistics was decreased (GFI = .998, CFI = .997, RMSEA = .026, $\chi^2/df = 1.69$). Family structure and maternal education are the strongest predictors of academic success in this sample of students.

Do SES variables predict at-risk status is the next question that SEM is used to test. Figure 4.5.2 Model A(a) shows the relationship between SES factors and at-risk status. Fit statistics indicate that the model fits the data adequately (GFI= 1.00, CFI = 1.00, RMSEA= .162). Since however, such a small variance in being at-risk is predicted by the model (8%) it seems likely that factors additional to SES are linked with at-risk status. When suspension was added as an observed predictor to the model, the variance accounted for being at-risk doubled to 16%, $\beta = .31$ for suspensions to at-risk, and father's and mother's work status no longer reached significance in predicting at-risk status. Fit statistics for this model (GFI = 1.00, CFI = 1.00 and RMSEA = .179) indicate adequate fit to the data. This confirms prior findings that externalising behaviour is an important indicator of the at-risk trajectory, overriding SES variables. Since behaviour is likely to be linked to a person's perceptions, parenting and school perceptions were added to the models to assess the links between them and achievement or at-risk status.

Figure 4.5.2 Model A (a) (N = 1050)

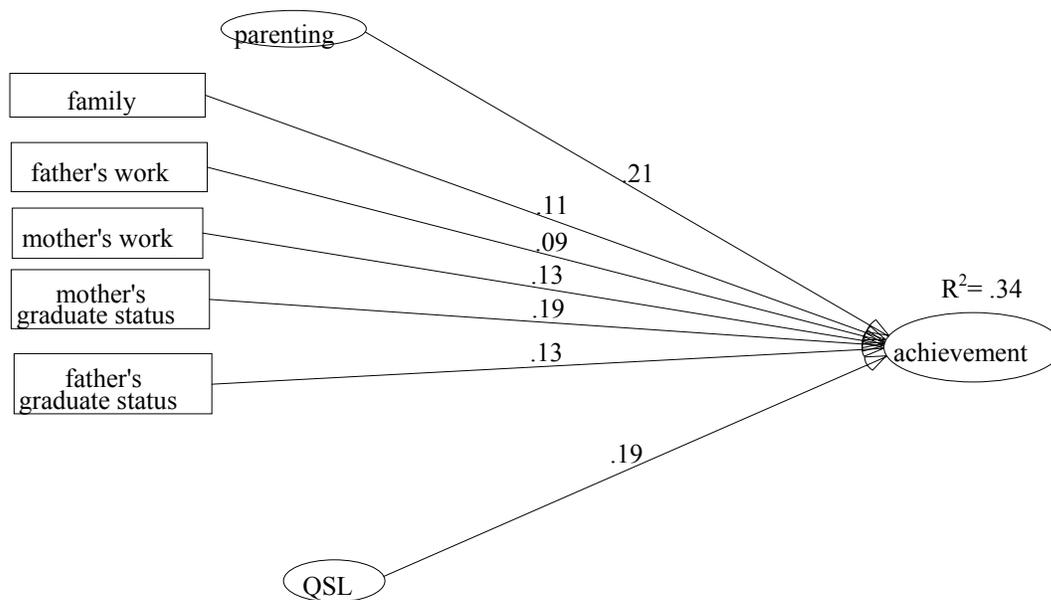


Model A (b) (Figure 4.5.3) assesses SES and the links of the two microsystem thought to be influential to student achievement, the school and home. The predictive power of the model has increased by 10%, fit statistics shown in Table 4.5.2. The strongest predictors of achievement are parenting, QSL and mother's education. All regression Beta weights are significant at $p < .001$ except for paternal work status which is significant at $p < .01$.

Table 4.5.2 Model fit statistics summary

<i>Model</i>	<i>Sample size (N)</i>	<i>df</i>	χ^2	χ^2/df	<i>P</i>	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>RMSEA</i>
Model A	1050	4	4.99	1.28	.288	.999	.991	.999	.015
Model A(b)	1050	31	95.5	3.08	.00	.985	.963	.977	.045
Model B	1050	7	26.4	3.79	.00	.992	.975	.988	.051
Model C	1050	162	577.59	3.57	.00	.947	.945	.945	.049
Model C(a)	1050	162	460.55	2.84	.00	.958	.946	.961	.042
Model D	1050	218	570.88	2.62	.00	.954	.942	.960	.039
Model E	1050	237	611.27	2.58	.00	.953	.941	.960	.039
Model F	1050	318	776.97	2.42	.00	.950	.936	.953	.037

Figure 4.5.3 Model A (b)



When at-risk status is the outcome variable, Model A (b) above predicts 11% of the variance in being at-risk. The strongest predictor of at-risk status in the model being parenting, beta weight from parenting to at-risk $\beta = -.12, p < .005$, with mother's education and school perceptions being the next strongest predictors ($\beta = -.11$ respectively) while family structure school perceptions were third strongest, beta weight from QSL to at-risk $\beta = -.10, p < .05$; fit statistics GFI = .988, CFI = .979,

RMSEA= .045, indicating good model fit to the data. The links to at-risk status that did not reach significance at $p < .05$ were father's work and education. This suggests that parenting perceptions and school perceptions are both strongly linked to at-risk status or *alternatively parenting that approximates authoritative parenting may act as a protective factor against failing in school*. The correlations between exogenous variables for the model predicting achievement are presented in Table 4.5.3. It is of note that the highest correlation occurs between parenting and school perceptions while school perceptions do not seem to be related to SES variables. The other positive correlation of note is that of family structure with parenting, being moderate, showing higher parenting perceptions are associated with intact biological families.

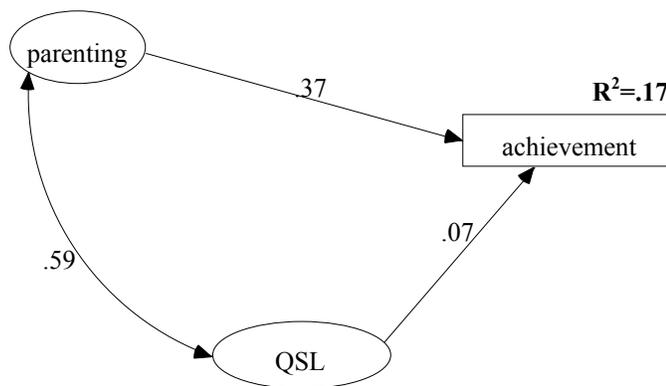
These results imply that parenting perceptions and school perceptions are not linked to SES variables and hence *the link between SES factors and achievement or at-risk status is direct, not mediated by parenting or school perceptions*. Parenting however, is highly positively correlated with school perceptions and both are linked with achievement or at-risk status. Therefore it is important to examine these associations more closely and separately from SES variables.

Table 4.5.3 Correlations between exogenous variables

<i>Exogenous variable</i>	<i>Exogenous variable</i>	<i>Estimate</i>
Mother's graduate status	Father's graduate status	.421
Father's graduate status	Mother's work	.107
Father's graduate status	Father's work	.155
Mother's graduate status	Mother's work	.189
Mother's graduate status	Father's work	.081
parenting	Mother's work	.166
parenting	Mother's graduate status	.104
parenting	Father's graduate status	.147
school perceptions	Mother's work	.039
school perceptions	Father's work	.014
Father's work	Family structure	.233
Mother's work	Family structure	.141
Mother's graduate status	Family structure	.100
Father's graduate status	Family structure	.181
school perceptions	parenting	.569
school perceptions	Mother's graduate status	.061
school perceptions	Family structure	.103
parenting	Family structure	.302
parenting	Father's work	.175
Mother's work	Father's work	.323
school perceptions	Father's graduate status	.079

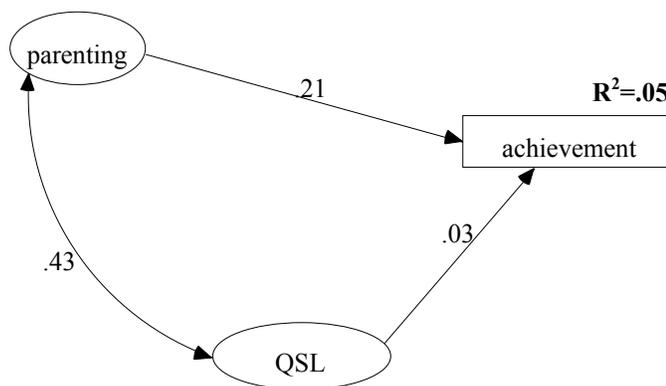
SES variables were removed to see how the two microsystems are linked to each other and to achievement. The resultant model, Model B (Figure 4.5.4) shows that perceptions of the two microsystem account for 17% of the variance in measured achievement, with parenting links being three times as strong as school links in predicting achievement. All regression weights were significant at $p < .001$, except for school to achievement which was significant at $p < .05$. There is a high correlation between the two microsystem perceptions (.59).

Figure 4.5.4 Model B: All students (N =1050)



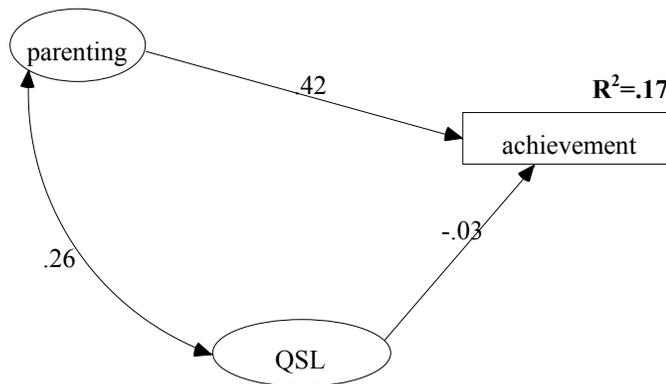
In relation to students at-risk, it seems that parenting perceptions are more closely associated with at-risk status than school perceptions; the link between school perceptions and achievement did not reach statistical significance at the $p < .05$ level. (Figure 4.5.5). Fit statistics for this model are very good, $\chi^2/df = 1.7, p < .115, GFI = .983, CFI = .981, RMSEA = .055$.

Figure 4.5.5 Model B: Students at-risk (N =218)



When this model was applied to resilient students, Figure 4.5.6 (N =97), the variance in achievement accounted for increased to 17%; the link between QSL and achievement was not significant. Fit statistics indicate that this model has excellent fit to the data ($\chi^2 / df= 1.01, p<.385$ GFI= .976, CFI = .998, RMSEA = .026).

Figure 4.5.6 Model B: Resilient students (N = 97)



Whilst this is a graphical representation of relations between parenting and school perceptions and achievement, it does appear to show that parenting is highly linked to achievement independently of SES variables. To test this notion more specifically measurement invariance was tested for the three groups of students.

The unconstrained model had excellent fit statistics ($\chi^2 / df= 1.7, df=21, p<.018$, GFI= .989, CFI = .990, RMSEA = .027), showing that the model applied equally well to the three groups. The ability to interpret multiple group analyses with latent variables requires that relations among measures in a study and their corresponding latent variables are identical across groups, an assumption formally known as measurement invariance (Byrne, 2001). To examine this assumption, covariances, factor loadings, measurement weights and uniqueness for measures of all of the latent constructs in the SEM were constrained to be identical across the groups for Model B. This resulted in poorer model fit for the structural covariance model and the measurement residual model, Table 4.5.4. This confirms that *differences between the student groups are derived from the strength of association between the latent constructs, parenting and school perceptions, QSL.*

Table 4.5.4 Model B constrained comparisons

<i>Model</i>	<i>df</i>	χ^2/df	<i>P</i>	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>RMSEA</i>
Unconstrained	21	1.746	.018	.989	.966	.990	.027
Measurement weights	31	1.529	.030	.986	.971	.989	.022
Structural covariances	37	1.701	.005	.980	.967	.983	.026
Measurement residuals	49	3.014	.000	.953	.939	.934	.044
Saturated model	0			1.000		1.000	.178
Independence model	45	34.294	.000	.628	.480	.000	.188

To identify in which group the difference occurs, a three-way comparison was conducted next, whereby the covariance was constrained to be equal between two groups while allowing the third group's covariance to be unconstrained. The three way comparisons involved:

1. typical students' covariances being constrained to equal at-risk students' covariances, while resilient students covariance was free, resulting in fit indices of $\chi^2/df= 2.9$, $df=48$, $RMSEA = .043$;
2. typical students' covariances being constrained to equal at resilient students' covariances, while students' at-risk covariance was free, resulting also in fit indices of $\chi^2/df= 2.9$, $df=48$, $RMSEA = .043$;
3. resilient students' covariances being constrained to equal at-risk students' covariances, while typical students' covariance was free, resulting in fit indices of $\chi^2/df= 2.6$, $df=48$, $RMSEA = .040$.

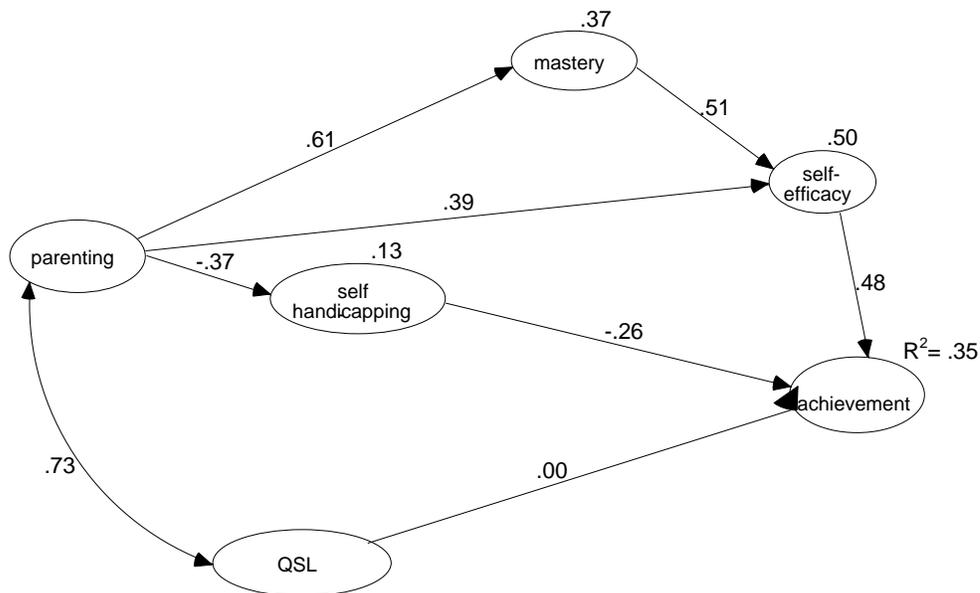
These results show that there are significant differences between typical students' correlations of parenting and school perceptions and those of the other two groups, since the best fitting model occurs for the third comparison above, resulting with typical students having a high positive correlation, .65. By contrast, the other two groups have a much smaller positive correlation, .27, between these two microsystems. *This finding is highly supportive of the main hypothesis of the thesis, namely, mesosystem relations, if strong and positive, enhance achievement outcomes.* Results show that there is high congruence between home and school perceptions for typical students, but not for resilient or students at-risk.

In regard to the Indigenous group, the beta weight between parenting and school was .21, showing a small relationship between the two sets of perceptions. The lack of congruence in the two microsystem contexts might be due to other intervening factors, such as peer relations and their effects on the resilient, at-risk and Indigenous groups, however this is not possible to ascertain from measures

obtained in this study. These results support Bronfenbrenner’s theory by providing empirical evidence hitherto unattained.

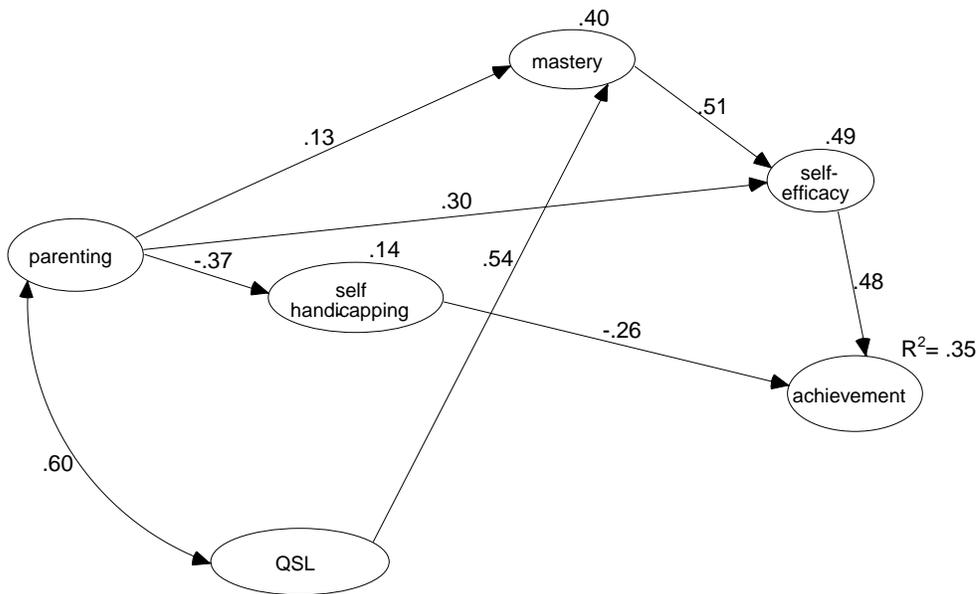
Because the variance in achievement accounted for by SES, parenting and school perceptions is not very large, it is proposed that parenting and school perceptions are mediated via motivational constructs. To test the hypothesis that parenting enhances mastery motivation and self-efficacy and moderates self-handicapping to facilitate achievement, Model C was developed. When QSL is linked directly with achievement in this model there is nil contribution to achievement (Figure 4.5.7). Since it has been shown that QSL is linked to achievement (Model B) this association might be mediated by mastery goals and/or self-efficacy. Model C (a) shows these hypotheses (Figure 4.5.8). Fit statistics for this model, which are better than those for Model C (Table 4.5.2), show good model fit, all standardized (beta, β) regression weights⁷ are significant at $p < .001$ and the variance in achievement accounted for by this model is 35%. Therefore, parenting appears to be positively linked to achievement via mastery and self-efficacy while protecting against self-handicapping, since it is negatively linked to self-handicapping ($\beta = -.37$). Similarly, school perceptions support achievement via a positive link with mastery goals.

Figure 4.5.7 Model C (N =1050)



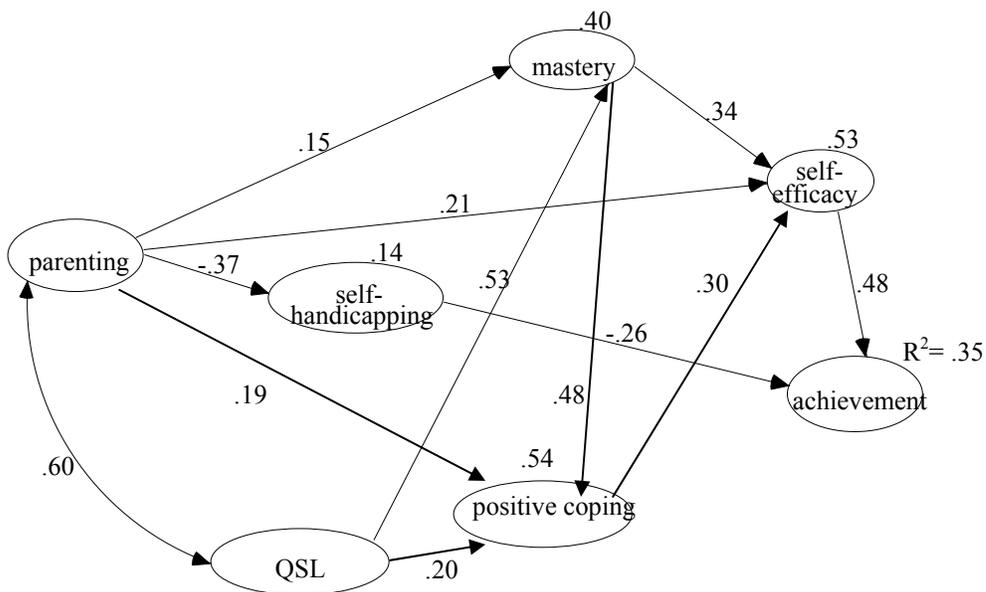
⁷ Standardized estimates (Beta weights) imply that when coefficients are equal the effects on the endogenous variable (dependent variable) will be equal relative to the differences in means and variances.

Figure 4.5.8 Model C(a) (N =1050)



The literature (e.g., Kaplan & Midgley, 1999) and the correlations between the variables in the study suggest that positive coping is significantly linked with mastery goals and school dimensions. This was tested next (Model D, Figure 4.5.9). The fit statistics for this model indicate that Model D has a very good fit to the data (Table 4.5.2), in accounting for the possible relationship between mastery goals, positive coping and parenting and school perceptions and their link with achievement.

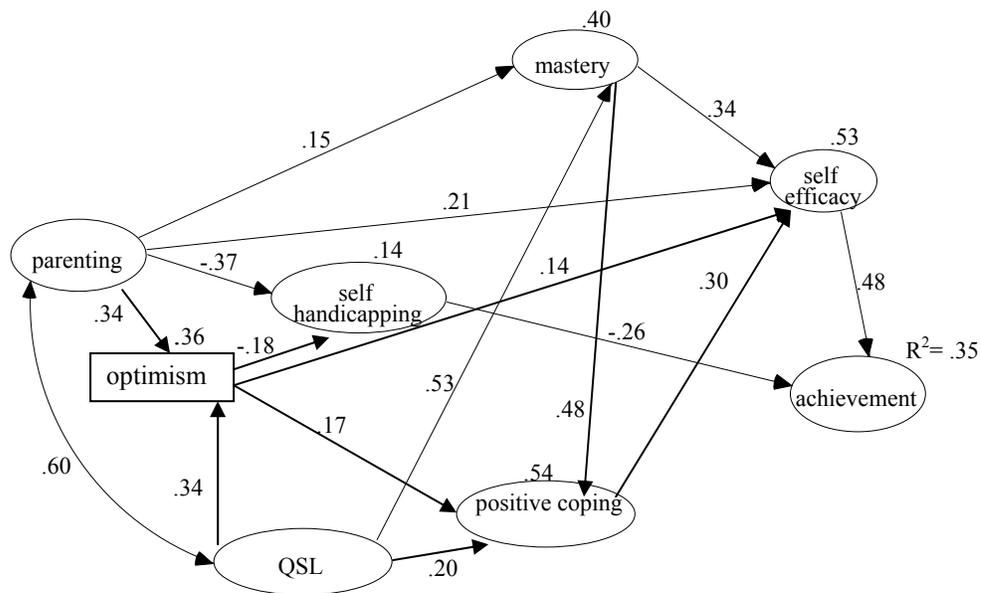
Figure 4.5.9 Model D (N=1050)



Model D illustrates that authoritative parenting, which is highly positively linked to school perceptions, protects against self-handicapping via a moderate negative association, and has small positive links to positive coping, mastery and self-efficacy. School perceptions are indirectly positively linked with achievement via the mediation of mastery goals, with which they are highly positively related, and positive coping with which they positively connected. This model is congruent with prior findings that posit certain learning environments can enhance mastery goals and positive coping strategies which support enhanced achievement (Kaplan & Midgley, 1999). It accounts for 35% of the variance in achievement for the whole sample and 44% of the variance for typical and resilient students (N = 832).

One of the questions the study aimed to address was whether optimism mediated the associations between parenting and achievement. To this end, a model was tested to see if optimism had a mediating role. Model E Figure 4.5.10 was developed, consistent with the correlations found in this study (Table 4.5.1) and the literature which suggests that optimism is positively linked with authoritative parenting, negatively linked with self-handicapping and positively linked with self-efficacy.

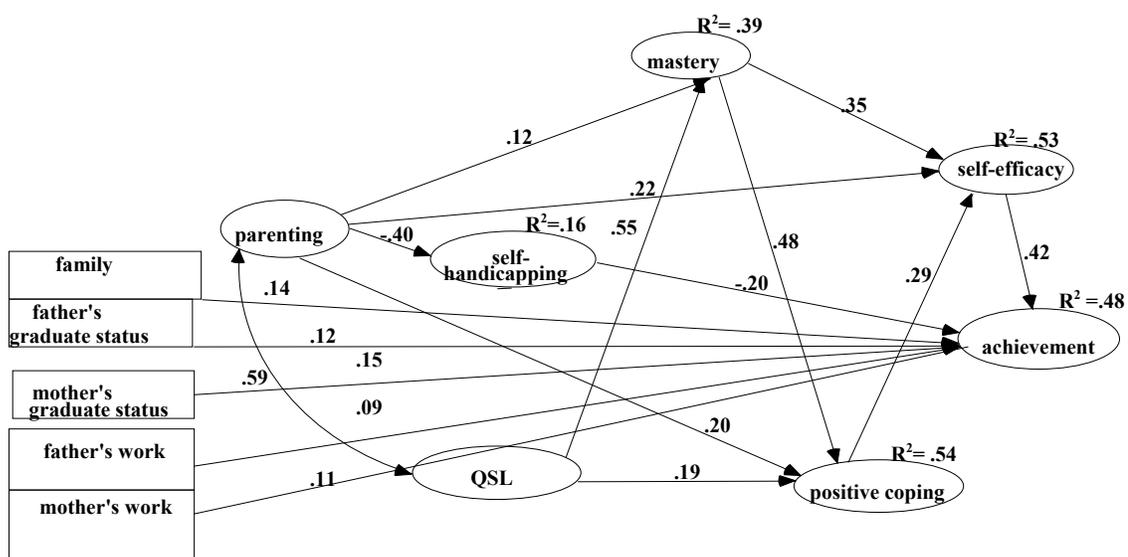
Figure 4.5.10 Model E (N = 1050)



The fit statistics for this model (Table 4.5.2) are as good as those for Model D, without the mediation of optimism. However, because this model does not increase the amount of variance accounted for in mastery, self-handicapping, positive coping and self-efficacy and because the AIC value of this model is 737.3 compared to AIC of 686.9 for Model D, Model D is considered to be the preferred model on the grounds of parsimony⁸. While 36% of the variance in optimism seems to be accounted for by parenting and school perceptions, consistent with earlier findings of this study, the subsequent links between optimism and other constructs do not support significant mediation via self-efficacy, self-handicapping and coping to achievement. The model implies a positive perception of a microsystem context is moderately linked to an optimistic disposition. Longitudinal data are needed to confirm whether student temperament variables lead to positive perceived contexts or positive contextual parameters enhance the development of an optimistic disposition.

The final model, Model F, combines SES, microsystem and motivational constructs to see how much of the variance in achievement may be accounted for (Figure 4.5.11).

Figure 4.5.11 Model F (N=1050)



⁸ The Akaike Information Criterion (AIC) was used to compare the two models because this statistic is preferred for comparing nonhierarchical models. The model with the lowest AIC is preferred (Kline, 1998).

Model F accounts for 48% of the variance in achievement for the whole sample (N= 1050), while for typical and resilient students (N = 832) the model accounts for 55% of the variance, making it a very good model. SES factors contribute 10% of the additional variance accounted for with fit statistics being very good (Table 4.5.2). The four strongest predictors of achievement are self-efficacy ($\beta = .42$), mother's education ($\beta = .15$), family structure ($\beta = .14$) and self-handicapping comprising a small negative relationship ($\beta = -.20$). Authoritative parenting appears to act as a protective factor against self-handicapping ($\beta = -.40$). Self-efficacy is directly linked to mastery goals, parenting and positive coping, accounting for 53% of the variance in self-efficacy. Underpinning mastery goals and positive coping are parenting and school perceptions. The strongest predictor of self-efficacy is a mastery goal orientation ($\beta = .35$) whose 39% variance is strongly and mainly related to school perceptions ($\beta = .55$), with parenting taking a minor role ($\beta = .12$). Positive coping is strongly and positively connected with mastery goals ($\beta = .48$) and is linked to school perceptions ($\beta = .19$) and parenting ($\beta = .20$), a result anticipated by the hypotheses of the study which were based on Bronfenbrenner's theory. Positive coping has a small direct relationship with self-efficacy ($\beta = .29$).

School perceptions (QSL) are highly allied to parenting ($\beta = .59$) though there are between group differences (Model F). It is proposed that typical students' school perceptions are congruent with parenting perceptions because values and attitudes between home and school contexts are in concert. Students at-risk may be exposed to values and attitudes at home which are incongruent with those observed at school. Perhaps for students at-risk, whose mean parenting dimensions are lower, and who have a high incidence (38 of 218 students, or 17.4%) of neglectful parenting, a non-transmission of values may be the cause of the incongruence. Resilient students' school perceptions were also not congruent with their parenting. Given that this group has been constructed from non-graduate homes with one parent unemployed, it might be that parental values with regard to schooling differ from student values, hence, the resilient status of these students. *The two contexts may be incongruent because these students have a high mean for the strictness dimension of parenting, coupled with a relatively low mean for the warmth dimensions, while their school perceptions were characterized by a high level of teacher relationships. This very incongruence might act as a protective factor enhancing resilience.*

Results suggest therefore that students' perceptions for the contexts they participate in are important correlates of the psychological constructs that they employ. For resilient students, these perceptions actually supersede the powerful effects of SES factors that define their families.

4.6 Summary and discussion

Before proceeding to summarize the main findings, acknowledgment of the limitations of a single SEM study is a priority. All SEMs of any complexity are likely to be only approximations of more complex and perhaps not fully linear developmental processes. Even in well-designed studies where analyses are conducted properly, conclusions may be limited to the particular sample, variables, and time frame represented by the design. Results are subject to selection effects with respect to: individuals, measures, and occasions of measurement (Nesselroade, 1991). However, it is worth noting that “SEM relates the (latent) constructs to each other and to covariates in a system of linear regressions thereby purging the “structural regressions” of biasing effect of measurement error” (Muthen, 2002, p.82). Thus it is a very powerful statistical technique.

Because a structural equation model is a hypothesis about the structure of relationships among multiple variables in a specific sample, generalization of a model beyond that sample might be uncertain. To address this issue, a multi-sample SEM, focusing on the evaluation of model fit and parameter estimates across samples from distinct populations would be necessary. The occasion of measurement is another problematic issue. In a study such as this one, where the effects are thought to operate and develop over time, longitudinal data would be required. From this perspective, there is no single true effect of one variable on another, unless the variables themselves, for example achievement and parenting, do not change over time. Directional effects studied using cross-sectional designs, cannot incorporate assumptions about causality stated earlier. To justify the study of directional influences in a cross-sectional design it must be assumed that the causal variables are stable over time. Whilst it might be reasonable to suppose that for example, achievement and parenting are stable over time, no data have been gathered to confirm this assumption either in the case of achievement or parenting. A more theoretically revealing analysis would be one where cross-sectional and longitudinal data attend to the same model.

With respect to model fit, a perfect fit of a model to real data is not to be expected even when theory is reasonably veridical (Cohen, Cohen, West & Aiken, 2003). There is no absolutely true model (Browne & Cudeck, 1993; Cudeck & Henly, 1991); all models are inadequate to some degree, even in the sample, and the best one can hope for is to identify a parsimonious, substantively meaningful model that fits observed data adequately well. At the same time, one must recognize that there may well be other models that fit the data to approximately the same degree. Therefore, finding of good fit does not imply that a model is the only correct one, but simply one of many possible, plausible models.

Acknowledging the above limitations, the models applied to the cross-sectional data herein do provide some elucidation of the processes likely to be important for adolescent academic achievement, by graphically displaying significant associations between the outcome variable and other constructs.

4.6.1 Research questions - quantitative sequence

Results obtained are used to address the questions of the study one by one.

1) How do students at-risk differ from other students in relation to socio-economic, family structure and ethnicity variables?

Socio-economic, family structure and ethnicity variables appear to be linked with being at-risk of failing academically, as predicted by the literature (e.g., McMillan & Marks, 2003; Duncan, Yeung, Brooks-Gunn & Smith, 1998, Batten & Russell, 1995, Rumberger, 1995). The 218 students at-risk identified in the study are more likely than typical students to be Indigenous, to have high suspension rates, to live in a step, blended or single parent family where neither parent has a university education and at least one parent is unemployed. The higher than expected number of resilient Indigenous students detected is something that may have a parallel in research conducted before (Catterall, 1998) showing that African American resilient students are less subject to SES variables.

2) Are there significant differences in the motivational goals, coping strategies, perception of the quality of school life, optimism and parenting perceptions between the three groups?

Students at-risk and Indigenous students reported higher self-handicapping and lower mastery goals and self-efficacy than both other groups. Since data for student goal orientation were obtained in the absence of a contingency condition, i.e., the data were not gathered as part of an assessment or skill building exercise, the differences in mastery goals that were detected are likely to reflect the students' dispositional goal orientation. In agreement with previous prior research findings linking a mastery goal orientation to achievement (e.g., Church, Elliot & Gable, 2001; Linnenbrink, 2005) typical and resilient students' goal orientations supported expectations. Indigenous students' mastery goals were found to be similar to other Australian students', a result supporting prior findings in NSW (McInerney, Hinkley, Dowson & van Etten, 1998).

Self-efficacy beliefs of the students showed the anticipated trends, with typical students having higher self-efficacy than resilient students, who in turn have higher self-efficacy than students at-risk.

Repeated investigations have shown the links of high self-efficacy with academic achievement (e.g., Pintrich, 2003; Pajares, 1996; Zimmerman, Bandura, & Martinez- Pons, 1992). Conversely, the self-efficacy beliefs of students with learning difficulties are depressed (Tabassam & Grainger, 2002). Of particular interest here is the link that was found between mastery goals and self-efficacy, showing that mastery goals are mediated upon achievement through self-efficacy beliefs. Bouffard et al. (2005) used experimentally induced conditions to show that mastery goals were mediated upon achievement through self-efficacy, confirming previous findings (Kaplan & Midgley, 1997).

Self-handicapping strategies have been negatively correlated with mastery goals (Midgley & Urdan, 2001), and achievement (e.g., Martin, Marsh, & Debus, 2003; Midgley & Urdan, 2001; Zuckerman, Kieffer & Knee, 1998) even after controlling for prior achievement (Urdan, 2004). Results here therefore support prior findings. Indigenous students' self-handicapping may be related to these students not speaking English as their first language, since Urdan (2004) found that students who were first generation immigrants to the United States tended to have a higher level of self-handicapping. Indigenous students' self-handicapping reflects prior findings that showed the cultural dilemmas faced by minority students from collectivist cultures, when placed in an Anglo academic environment that emphasises competition and independence (Arroyo & Zigler, 1995; Bergin & Cook, 1995). Self-handicapping is also connected to poor coping (Zuckerman, Kieffer & Knee, 1998) and an external attributional orientation (Martin, Marsh & Debus, 2003), results that concur with the findings here, showing that projective coping is linked to self-handicapping. In turn, it was found that projective coping is negatively related to optimism.

Optimism supports proactive, positive coping strategies (Brissette, Scheier & Carver, 2002; Scheier, Weintraub & Carver, 1986). Higher levels of both were observed in typical students compared to students at-risk, while resilient students' coping strategies were no different from those of typical students. Students at-risk have lower positive and higher projective coping than other students, results parodying the relationships found by other researchers above, linking these constructs to the lower achievement that defines students at-risk. The mechanism through which optimism supports achievement might be related to the results of Boman and Yates, (2001) who found that optimism was linked to greater classroom involvement and lower hostility at school, both associated with fewer externalising behaviours resulting in suspensions. However, from the SEMs developed it was not clear whether optimism's relation to achievement was significant.

In this study, suspensions, which Kaplan and Maehr, (1999) found to be negatively correlated with mastery goals, were highest for students at-risk. Suspensions are usually the result of externalising behaviours and are correlated to projective coping (Friedel, Marachi & Midgley, 2002) a strategy reported consistently by students at-risk in this study. Friedel, Marachi and Midgley, (2002) showed that projective coping was highly negatively correlated with perceived teacher support, concurring with present findings that show a negative correlation between projective coping and teacher relationships. Hagen, Myers, and Mackintosh, (2005) discovered externalising behaviours to be more common in students at-risk who perceived less social support, while Ackerman, Brown and Izard (2003) showed that harsh parenting and parental maladjustment were connected to externalising problems in their children. On the whole, prior research supports results of this study which shows that neglectful parenting is linked to significantly higher suspension levels. Thus the role of parenting appears to be important, perhaps through the perceived support that students feel as a result of authoritative parenting.

Parenting may be the key to the problematic result of low optimism reported by resilient students. Based on prior research in resilience and optimism, it was expected that resilient students would exhibit higher optimism than students at-risk. In this study resilient students reported a relatively low level of the warmth dimension of parenting, and a higher than expected number of neglectful parenting contexts which may be allied to their lower optimism. This assertion is supported by recent findings (Jackson, Pratt, Hunsberger & Pancer, 2005) showing that the effects of authoritative parenting upon positive adjustment are mediated through optimism. It is argued therefore that the converse, neglectful parenting might result in no enhancement of optimism, if not directly predict pessimism.

Parenting perceptions in the three groups of students were significantly different both along the dimensions of parenting and the perceptions of a pure parenting style. Typical students reported higher means than the other two groups for all three parenting dimensions. Since these dimensions are unique to this study there are no prior results to compare. However, authoritative parenting, characterised by the highest means in the dimensions measuring parenting, has been associated with higher achievement while the converse has been observed with neglectful parenting (for reviews see: Desforges & Abouchaar, 2003; Darling & Steinberg, 1993). The perceived pure parenting style of the student groups confirmed prior research findings with authoritative parenting being connected with typical students and neglectful parenting being linked to students at-risk both for achievement and suspensions, which are related to academic failure. Even after controlling for SES, parenting style has been connected with achievement (Astone, & McLanahan, 1991) a finding replicated here (Models

A(b) and B show the effects of parental style independent of SES). A high degree of parental strictness/supervision was discovered in resilient students, a finding that has been noted before in relation to resilience (Rutter, Giller & Hagell, 1998). Contextual variability might be responsible for the parenting style associations with achievement in Indigenous students (Darling & Steinberg, 1993). Empirical studies have linked authoritative parenting with higher school achievement in European and Hispanic American adolescents but not in Asian and African American adolescents. The lower links between authoritative parenting and academic achievement in Indigenous students might reflect cultural dimensions, such as a communal, cooperative approach to child rearing. The higher level of neglectful parenting reported by Indigenous students might be related to the higher frequency of step, single and “other” family configurations reported by the students, since parenting style has been shown to vary with ethnicity, socioeconomic status and family structure (Astone, & McLanahan, 1991).

School perception comparisons in the three groups of students showed that typical students had the most positive views of school. Students at-risk’ views were the lowest but were not significantly lower than resilient students’ views except for teacher relationships. Teacher relationships of resilient students were as high as typical students, a finding that was expected for resilient students based on prior research (e.g., Howard & Johnson, 2000). Equally, Australian research has shown that the most often cited reason for student disaffection and subsequent drop-out is poor student-teacher relationships (Australian Centre for Equity through Education & Australian Youth Research Centre, 2001). In support of the more positive school perceptions found in typical students, recent Australian research exploring the relations between students’ attitudes to school, retention and dropping out of school, (Khoo & Ainley, 2005) has linked positive attitudes to school with greater school engagement and participation leading to a higher probability of a student entering higher education. Therefore, results of this study concur with expectations that students at-risk have less positive perceptions of school than typical students.

A surprising result is the discovery that their attitudes are similar to those of resilient students in regards to value of schooling and positive emotional connections with school. Perhaps, as Bronfenbrenner would argue, their attitudes are due to socializing influences that are subject to SES contexts. In this study, students at-risk and resilient students share similar SES contexts. There were no differences in school perceptions based on ethnicity.

3) Do academic outcomes correlate with other variables such as motivational goals, coping strategies, school perceptions and challenging behaviour in the three groups?

Academic achievement was most highly correlated with academic self-efficacy, an expected result based on extensive previous research in to the predictive power of competence beliefs and performance (Pajares & Schunk, 2001). Conversely, low academic self-efficacy, characterizing Indigenous and students at-risk in this study, has been shown to be linked to school disengagement and lower academic achievement (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). At the same time, academic failure is most parsimoniously predicted by suspension level, family structure, parenting and low SES, results anticipated by earlier research (e.g., McEvoy, & Welker, 2000; Duncan et al., 1998). Self-handicapping was a significant negative predictor of achievement, validating prior research (e.g., Midgley & Urdan, 2001). Overall, students' school perceptions were moderately correlated with a mastery goal orientation and self-efficacy, a perhaps self-evident result.

4) Does perceived parenting style underpin other constructs such as optimism, motivational goals, coping strategies school perceptions and achievement outcomes in the three groups?

Parental moderation of student perceptions, behaviours and outcomes were found to be considerable. Whilst parenting processes were obtained from the student's point of view, rather than the parents', there are at least two strong reasons for doing so. As Steinberg et al. (1992) noted, due to social desirability, parents may tend to represent themselves as effective, leading to less accurate assessments. Additionally, adolescent's reported perceptions of their parents may be as important as parents actual behaviours, as Paulson (1994) found that adolescents' reports of their parenting better predicted adolescent outcomes than did their parents self-reports of their parenting.

Parenting style was found to be connected with suspension level; neglectful parenting was associated with more suspensions and lower achievement than authoritative parenting. Various other researchers have made the same links between parenting and suspensions (e.g., Piko, Fitzpatrick & Wrigth, 2005; Ary, Duncan, Duncan & Hops, 1999; Patterson, Forgatch, Yoerger & Stoolmiller, 1998; Patterson, 1986; Lamborne et al. 1991), and parenting and achievement (see reviews, Steinberg, 2001; Sputa, 2005).

Optimism showed a very clear relationship with parenting style in all student groups, with authoritative parenting supporting high optimism and neglectful parenting leading to low optimism. While healthy development in children was shown to be supported by an authoritative parenting style, (Lamborn et al., 1991) the only study known to have examined optimism in relation to parenting style is the one

conducted by Jackson et al. (2005). They showed that authoritative parenting led to higher self-esteem, lower depression and better adjustment through the mediation of optimism.

Motivational goals were moderated by parenting style. Authoritative parenting was connected with higher mastery and self-efficacy goals and lower self-handicapping goals, with the converse being the case for neglectful parenting. Similar results were reported by Gonzalez, Doan Holbein and Quilter (2002) for authoritative parenting and mastery goals and Grolnick, Ryan and Deci (1991) for self-efficacy. Self-handicapping links to parenting style appear not to have been examined previously.

Coping patterns were also moderated by parenting style, higher positive and lower projective coping being alternately linked to authoritative parenting while the converse taking place in neglectful parenting contexts. Parental rearing practices have previously been associated with coping strategies (Meesters & Muris, 2004), relations between parenting and higher achievement mediated via adaptive coping (Aunola, Stattin, & Nurmi, 2000). In addition, Wolfradta, Hempelb, and Miles (2003) found that parental warmth, high in authoritative contexts, enhanced positive coping strategies. Shulman (1993) and Frydenberg (1999) also related nurturing parenting to adaptive coping, however, the body of literature relating coping to parenting style is limited.

School perceptions were subject to mediation by parenting style perceptions in all student groups. As has been the pattern in this study, authoritative parenting was linked to more positive attitudes for all school descriptors while neglectful parenting shows the converse patterns. Interestingly, permissive parenting patterns follow authoritative ones while authoritarian patterns follow neglectful ones demonstrating that the warmth dimension of parenting may be the important moderator of school perceptions. This might be achieved through enhanced social receptiveness in students who have experienced warm nurturing relationships with their parents. When, in 1998, Katherine Wentzel assessed the motivations of students and their relations to perceived family cohesion and teacher support, she found a small correlation between perceived parental cohesion and teacher support. There are no other studies known to the author that have reported relations between student perceptions of parenting and school. More often, even where both contexts are examined in a single project, studies link the effects of each context to student outcomes separately (e.g., Kumar & Hruda, 2001; Marjoribanks, 2002).

5) Are there mesosystem interactions evident in the three groups?

The connection found between parenting perceptions and school attitudes was of particular interest, illustrating Bronfenbrenner's mesosystem interactions, and showing that where parenting processes approximate authoritative parenting their influence on school attitudes is stronger. As in another study aimed to assess mesosystem congruence (Marchant, Paulson & Rothlisberg, 2001) parenting and school microsystem effects were mediated upon achievement via self-efficacy and other motivational goals.

Some differences between students were noted. The links between parenting and school perceptions were high for typical students whereas for the other two groups they were low. Based on Bronfenbrenner's theory this was an anticipated result, demonstrating that the home environment provides the foundation of perceptions of other socializing contexts; when home perceptions are positive so are school perceptions, reinforcing academic socializing processes. In the case of students at-risk, whose parenting dimensions are lower than those of typical students, the links between parenting and school were weaker yet their school attitudes were less positive than those of typical students, which implies as a group they show greater variability in their perceptions. This concurs with Bronfenbrenner's assertions that when contexts containing the developing child complement each other in terms of their relations with child outcomes, i.e., have mesosystem interactions, they reinforce their effects in predictable ways (Bronfenbrenner & Crouter, 1983).

Although home environments are key academic socialization contexts, the relative impact of school climate on school achievement above and beyond the home context should not be underestimated since it may provide resilience. Results obtained here lend support to this notion.

Resilient students shared the same patterns of association between parenting and school perceptions as students at-risk but their parental monitoring was higher than students at-risk', while their teacher relationships were as positive as those of typical students. Resilient students' higher academic outcomes are possibly connected with the power that these two microsystem dimensions have in reinforcing each other and boosting academic outcomes through their various links with mediating constructs such as mastery goals. Although few researchers have employed a mesosystem design to examine associations between parenting and school, complementary results to those found in this study were arrived at by Paulson, Marchant, and Rothlisberg, when, in 1998, they examined the congruence of school and home influences on middle school student outcomes, and later, (Marchant, Paulson &

Rothlisberg, 2001) in linking parenting and school influences to achievement via motivational mediators. The role of optimism and coping was not assessed in their research however.

6) Are socioeconomic status (SES) variables linked to achievement outcomes directly or via their effect upon other variables?

Family SES was linked to achievement directly comprising a very powerful association. Family SES variables alone were found to have a large predictive power for achievement, confirming previous research results regarding socio-economic variables placing students at-risk. Of note is that parenting style was also found to be connected to paternal education and to family structure. A higher educational level in the father is connected with a greater incidence of authoritative parenting but SEMs examining SES and parenting showed a stronger link between family structure and parenting. Fisher et al. (2003) showed that the level of parental supervision varied as a function of family structure, results confirming findings here. Additionally, being Indigenous was linked to being at-risk. This result may be a consequence of the SES of these students and the higher number of Indigenous students reporting neglectful parenting, in itself linked to a blended family structure. For example, a single mother may have fewer economic resources and less emotional and structural support from her social environment leading to greater personal stress which is in turn passed on to her offspring, since parent-child interactions exist within the context of multiple relationships and milieus (Bronfenbrenner, 1989).

This contention is further supported because when parenting and school perceptions were entered into the models, the explained variance in achievement increased. Marjoribanks' (2003) findings in Australian and Taiwanese (Hung & Marjoribanks, 2005) students echo these results. The assertion of Bronfenbrenner and Ceci (1994) that parental monitoring transcends SES as measured by parental education and family structure is also supported by results here.

Previous longitudinal research using SEM has shown that SES variables are linked to academic achievement indirectly through the mediation of parent-adolescent relationships and parental school involvement (Gutman & Eccles, 1999). More recently, Hong and Ho (2005) showed that specific parental aspirations for, and communication with, their children enhances student aspirations which in turn predict achievement outcomes directly. Likewise, Bouchey and Harter, (2005) contend that their results support the premise that "adolescents' perceptions of socializers' academically relevant beliefs,

values, and behaviour influence both their expectations for doing well in school and the attainment value they place on particular coursework”(p.682).

In sum, a comparison of Models A, A (b) and F show that the variance attributable to achievement that is proportional to SES measures is lower when the effects of parenting and school perceptions are not taken into account. Furthermore, models indicate that while family SES is directly linked to achievement, presumably via the social and economic milieu and all its manifestations, it also operates via indirect pathways through parenting processes and their links to school perceptions. This indirect pathway suggest that within particular family SES contexts achievement correlates can be moderated by parenting processes and school perceptions. Conversely, when interpreting these results it is important to remember that effective parenting is context-specific and largely defined by the environments in which families live (Bronfenbrenner, 1989). Parenting and school perceptions, two microsystems, are strongly linked, a mesosystem interaction. Mesosystem pathways are of special interest since it is through these that interventions to improve achievement might be feasible. When SES is removed from the analysis, parenting and school perceptions and their associations through the psychological constructs that students use, account for 35% of the variance in achievement, a large proportion offering scope for interventions to aid the development of protective factors.

The mesosystem interactions, their manifestation and strength as well as the qualitative differences in microsystems that students perceive are the object of the interview questions and qualitative sequence of the study. Analyses of students’ interviews using Bronfenbrenner’s framework are presented in Chapter Five.

Chapter Five: Qualitative Analysis

Chapter overview

The chapter is prefaced by an expansion of the description of qualitative methodology considerations and procedures delineated in Chapter Three. Included here is a rationale for the choice of interview participants and thematic foci used to analyse the interview transcripts. Subsequently, the chapter is broadly divided into three parts examining the views of typical, resilient and students at-risk. The student narratives are then compared and contrasted in the summary and discussion that follows. As a preamble to the narratives, and a link with the quantitative results of Chapter Four, the selected students' survey results are presented.

Participant selection, rationale for thematic foci and methodological considerations⁹

The purpose of this chapter is to illustrate and triangulate the results of the quantitative phase of the research and, where appropriate, expose issues pertinent to academic resilience and risk that the survey results could not bring forth. The framework developed for the semi-structured interviews was designed to elicit students' attitudes and perspectives with regard to schooling, parental support, future orientations and agency and to discern differences, if any, in the perspectives of students from the three groups.

Participant selection

Six interviewees were selected from the three groups, two typical, two resilient, and two students at-risk. Typical students are students whose academic achievement is typical or average and they are included to provide a "standard" or relational model for comparison purposes. Typical students are not intended to represent a normal adolescent or normal adolescent development. Resilient and students who are at risk of academic failure occupy a social niche; play a social role with a social identity, which may become apparent in comparison to typical students. For as Somers (1994) notes, "all identities must be analysed in the context of relational and cultural matrices because they do not exist outside of those complexes" (p.622). Somers (1994) maintains that even a hermit is a social actor who can only be made intelligible through a relational (and narrative) approach.

⁹ Full interview transcripts can be located on the CD in the back of the thesis.

In selecting the cases, I was conscious of the representativeness of each case. I did not want to select cases which would provide findings that are “based on a subjectively selected and probably biased ‘sample’ of cases that happen to fit the analytic argument” (ten Have, 1998, p.8).

The two typical student cases were selected to provide an “average” typical student, Chris¹⁰, and a slightly less representative typical student, Alex, to illustrate some of the range within this grouping. Clearly, my conceptualisation of average needs to be qualified. Through my teaching experience in the school where these boys attended, I formed an impression of an average student. This impression was based partly on academic results; it placed Chris in the average group. Since average can be very broad another, disparate example served the purpose of illustrating the range within this group. Other practical considerations were involved in the selection process as well. Having a connection with the students was an advantage since it helped the students to feel more at ease during the interview, an important factor when interviewing adolescents. I have known Chris through my connection with his father who was a colleague, but have not taught him. There were many occasions when Chris would enter our staffroom and wait for his father and on such occasions I had spoken to him in general terms. Other than these brief exchanges I came upon Chris in the playground and during parades.

My connection with Alex was weaker as I did not know him personally and had not spoken to him prior to the research, not even in the context of school parades or playground duty. However, I approached him because his survey results indicated he experienced neglectful parenting which was atypical of his grouping. Unbeknownst to me both students belonged to the lap-top class, a class that issued students with a lap-top for their use for the duration of their schooling to Year 10.

Both of the selected students in the resilient group are Indigenous. Little is known about resilience in Indigenous compared to non-Indigenous Australian students and therefore I saw this as an opportunity to enter into unknown territory. I found it difficult to obtain an interview with them initially, as they were concerned about the nature of the research. When the Indigenous liaison teacher intervened for me however, Kim with whom I had not had any prior connection agreed to be interviewed. After he was interviewed Tess, whom I had taught before and who started to avoid me after I asked her for an interview, consented to participate. I did not know that these two students were cousins and I suspect Kim talked about the interview and that influenced Tess in her decision to speak with me.

¹⁰ Fictitious student names are used to identify each of the six students.

By contrast, I had known the two students at-risk quite well, as I had been their teacher for two years, since Year 8, in either mathematics or science classes. They each had a good relationship with me and were both friendly and comfortable talking with me in and out of class. Nathan was somewhat difficult to track down for the interview as he was often suspended and away from school for extended periods of time. However, he was very willing to participate as he and I had a positive relationship in previous years. Adam was more easily accessible and took pleasure, it seemed, in relating his stories to me. The interview lasted for close to two hours and would have lasted longer if I had not insisted he went back to class. Apart from the personal connection I had with these students their survey results indicated Nathan experienced neglectful parenting while Adam's parenting was authoritarian, making their participation more pertinent to the study for the range of experiences and perspectives they could offer.

Rationale for choice of particular thematic foci

Each student's narrative is interpreted through seven foci: global impression, school focus, parenting focus, self-presentation, future orientation, mesosystem connections, exosystem connections, followed by a summary outlining important points. Whilst it is perhaps common in qualitative research to let themes emerge from the interview narratives, (Patton, 2002), the choice of foci was influenced by the overarching research questions and the intention to group responses under headings determined by Bronfenbrenner's bioecological theory. These are concerned with the two microsystems important for adolescent development, home and school, their interactions, the mesosystem, and influences from the larger social environment bearing upon the microsystems and the individual student's identity, the exosystem. Processes which operate in both directions between the principal settings where human development occurs, such as the home and school are termed the mesosystem (Bronfenbrenner, 1986, p.723). The exosystem is defined by Bronfenbrenner (1979) as: "one or more settings that do not involve the developing child as an active participant, in which events occur that affect, or are affected by, what happens in the setting containing the developing person" (p.25). However, the nature of the semi-structured interview questions permits the emergence of themes within the selected foci.

Self-presentation was included because, as Riessman (1993) has shown, the strategic use of narratives incorporates aspects of optimism, goals, self-efficacy and coping strategies, to represent the self through relational story lines in which the narrators locate themselves. Somers (1994) concurs:

By focusing attention on the new *ontological*¹¹ dimension of narratives... we have the opportunity to engage with historically and empirically based research into social action and

¹¹ Author's italics.

social agency that is at once temporal, relational, and cultural, as well as institutional, material, and macro-structural. (p.607)

For similar reasons, a future focus was chosen to represent student agency as well as aspects of optimism and coping. Howard and Johnson (2000) reported resilient students, as opposed to those at-risk, could be identified by a positive future orientation, a sense of autonomy and personal agency in the control of the future, and a sense of connectedness to school and community. Other studies concerned with exclusion prevention have confirmed that student agency is an important protective factor (Hallam & Castle, 2001). It must be emphasised however, that identity is embedded in overlapping networks of relations that are not constant over space and time, so it may emerge that an individual's identity at school could be quite different from their identity at home. By examining the narratives in relation to the different foci, different aspects of the student's identity might be easier to observe and relationships might take on different roles. As Somers (1994) notes "relationships may be more or less bonded, the experience of them may be more or less constricting or enabling- but again this is a question of narrative contingency, not utopian ideals" (p.622).

The use of foci does not preclude recurring themes from being addressed, though these are only examined if they are pertinent to the construction of each student's identity or to the issue of academic resilience or risk. In this context social support is an important factor that has been recognised to impinge upon academic success and resilience (Guest & Biasini, 2001). Four types of social support have been identified: emotional, informational, social companionship and instrumental support, each of which can act as a protective factor against the experience of stress (Guest & Biasini, 2001). Aspects of support within the domain of each focus are sought since it has been hypothesised that increased levels of social support enhance self-esteem which in turn may improve academic performance through enhanced effort to achieve goals (Guest & Biasini, 2001).

In summary, the use of particular preconceived foci is acceptable practice within narrative research because as Reissman (2000) notes investigators' decisions as to where to put boundaries around for analytic purposes depend on their analytical framework and theoretical interests.

Methodological considerations

The "quality of data is a critical issue that concerns qualitative researchers" (Silverman, 2001, p.219). Issues of reliability and validity are important in qualitative research because therein "the objectivity and credibility of (social scientific) research is at stake" (Perakyla, 2004, p.283). In practice,

enhancing objectivity entails “efforts to assure the accurateness and inclusiveness of recordings that the research is based on as well as efforts to test the truthfulness of the analytic claims that are being made about those recordings” (Perakyla, 2004, p.283). By acknowledging my own subjectivities, arising from my experiences, my objectivity becomes more transparent. Confessing and having an awareness of the values and beliefs that might colour my interpretations permits readers of my accounts to separate my understanding of the interview narratives from that of the students’ (Glesne & Peshkin, 1992). My subjectivities include values and beliefs emanating from my teaching experiences, my experiences as a mother of three, the experience of a highly mobile childhood as an only child of a troubled single-mother, and extensive interactions within different cultural contexts as a result of having lived as a migrant in four different continents, twice with no knowledge of the native language. This is offered as a means through which the reader may monitor my subjectivities in the interpretive process.

The reliability of my interpretations is also made stronger by contextualising responses. The contextualisation of responses within an interaction provides a public forum through which to assess the reliability of the data. In other words, contextualising responses makes them more transparent. Silverman (2004) suggests that “working with long sequences of text or transcript and providing those sequences intact to the reader” (p.361) is one way of doing this. In what follows, some of the extracts shared with the reader are detailed passages, including the interviewer’s comments, for the sake of presenting credible data. In considering the balance between brevity and credibility that faces qualitative researchers reporting their research, Silverman (2004) suggests the use of fewer but more detailed extracts, “saying a lot about a little” (p.362). Caution regarding credibility underscores the approach adopted here with some of the student narratives since multiple ideas are often embedded in a single passage, either because of its content, its context or the way it is conveyed to its audience, the interviewer.

Interpretations proposed throughout need to be considered in light of my aforementioned subjectivities as well as some caveats regarding explanations in general. Explanations are partial since it is not possible to know the (full) prior experience of the participants; they are also conditional as they might hold only for certain contexts and they are intermediate, since they are in turn subject to being explained. Finally, explanations are only approximate, offering only a glimpse of the participant’s world, for what they describe is likely to be somewhat different from actuality (Kaplan, 1964). I, as an interviewer, was not present in any of the situations described and cannot apply explanations in the way that Kagan (2004) advocates:

Because humans evaluate every event with respect to the situation in which it normally occurs, every event must be conceptualized as an "event in a context." The context, like a channel setting on a television set, primes the brain to expect a particular set of most probable experiences. (p.293)

To present interpretations that are as close to actuality as possible, given the constraints of an interview scenario, multiple readings of the narratives were involved both initially and after a period of some months (Glesne & Peshkin, 1992; Reissman, 2004). My final impressions of the students are based upon stable and repeated inferences and upon input from other's responses of my thoughts. Where there were conflicting interpretations between my thoughts and those of others I have gone back and re-considered these opinions and in some case have removed or modified interpretations (Glesne & Peshkin, 1992).

5.1 Summaries of student survey means: school perceptions, parenting perceptions, motivational, coping and expectancy orientation constructs

Before analysis of the interview transcripts was attempted the survey results of each student were tabulated. This was not done in order to guide the analysis of each interview but rather as an additional source of information to aid the interpretive phase of the interview reading. Survey results and means of each construct are presented in Table 5. Fuller descriptions of tabulated results and quantitative analyses are located in Chapter Four.

Table 5 Individual student and group means for all constructs employed

<i>Student attributes</i>	<i>At-risk mean</i>	<i>Adam</i>	<i>Nathan</i>	<i>Resilient mean</i>	<i>Kim</i>	<i>Tess</i>	<i>Typical mean</i>	<i>Alex</i>	<i>Chris</i>
suspension level	.70	.00	2.00	.20	2.00	0.00	.14	0	0
achievement	2.3	3.0	1.0	5.0	4.0	4.0	5.7	6.0	5.0
optimism	16.19	9.00	16.00	16.48	15.00	19.00	18.76	19.00	12.00
mastery goals	3.39	2.75	3.25	3.83	4.50	5.00	3.84	4.20	3.60
projective coping	1.91	1.00	1.66	1.64	1.00	1.33	1.64	1.33	1.33
denial coping	2.19	2.66	2.33	2.10	2.66	2.00	2.04	3.33	2.00
positive school affect	12.01	7.00	11.00	12.55	18.00	14.00	13.45	15.00	13.00
academic self efficacy	3.12	2.25	3.50	3.46	4.00	3.25	3.80	5.00	3.80
non-coping	2.14	2.50	2.00	1.97	2.25	1.25	1.97	1.00	2.50
perceived school opportunity	16.70	11.00	21.00	16.85	22.00	18.00	17.65	18.00	16.00
teacher relationships	14.99	11.00	16.00	16.07	17.00	18.00	16.79	19.00	18.00
self handicapping	2.57	2.20	3.00	2.47	1.40	2.20	2.14	1.33	2.67
positive coping	2.38	1.66	2.33	2.67	4.00	3.00	2.82	3.67	3.67
warmth	.83	.70	.65	.83	.60*	.75	.88	.75	.85
strictness	.78	1.00	.80	.84	.87*	.87	.86	.46	.87

* Foster mother values

5.2 Typical students

5.2.1 Chris

Global Impression

My first interview was with Chris and so my interviewing skills were probably less developed during this interview than in subsequent ones. Nonetheless, the interview seemed to go smoothly. Chris was pleasantly surprised by the box of chocolates I presented him with as a thank you gesture for agreeing to be interviewed and throughout the interview he was cheerful and smiley. He was interested in giving an interview although he was a bit nervous with regard to what was expected in terms of answers. I noticed his hands were sometimes clenching a little but he was smiling and seemed genuinely happy. There was a slight nervousness but not an anxious nervousness. The tone of the interview was one of cooperation and it was clear from Chris's demeanour that he was flattered to be selected for interview; in a sense the interview was an empowering situation for him as his views about school were sought.

Chris appears not to have many pressing issues to deal with, except ones of a self-actualization nature such as getting his driving license and getting good marks at school. He has support from family and friends and he finds school a congenial place to be. There is a hint he has to work rather hard to achieve his aims and perhaps that causes him not to be able to cope sometimes, but he does not make this a focal point; rather it is something that emerges in passing. He values his privacy as he will not divulge everything to even his closest friends, (L221: *Ahm, probably share some things with but some things you want to keep private*) but is sociable and one of his chief concerns is maintaining his friendship connections when he is going to be travelling with his family:

L221-215: *Like staying in touch with friends and stuff, like don't let them drift. Because like, if you don't talk to them for three months in one space, if, you know, if they are just acquaintances they won't, it's not really the same, cause if you're having trouble you can't go to them for help, cause they don't really know you that well.*

Chris is of a small stature and perhaps this is one of the reasons why he sometimes reports feeling intimidated by older students (L 257: *it's sort of like a little intimidating but they don't come near me and I don't go near them*) and perhaps by the Principal though he does not say so directly (L271: *And he is a really tall person and if you want to talk to him he sort of leans forward*).

School focus

Chris values school and sees it as a place where he does not have any problems. For Chris the key thing is having friends to be with while at school and once that was sorted other features of his first day at school fade from his memory:

L56-60: I can't remember the first day of primary school, but like High School I remember I was coming in and I was as nervous as anything and cause I had a lap-top bag it was really heavy and it was like I was busy walking like this... and I met up with A --- first up cause he was also a lap-top student and um, he was my first friend here that didn't carry on from primary school and I was introduced to everyone else and that's all I remember.

Presumably this shows other factors were not as important, as they did not cause any observable concern.

Teachers are instrumental in the enjoyment of his subjects (L11: *My favourite subject is – it all depends on what mood the teacher is in*) and (L16: *But yeah, it is what the teacher can allow you to do, that really makes it fun*). School has provided him with informational support for his career (L49, *I actually heard that of a... when we were doing University PDP (Personal development program) thing in career choices, I think they mentioned it sometime in there*) and (L145-146: *when they (school) had this Army thing on nearly all the Year 10s went there*). Chris has no concerns about any aspect of his schooling (L264-266: *Well, the school itself, I have no problem with. Teachers, staff no problems they are all good, there are a couple of teachers that are really picky, get up you for the stupidest things!*) but other students can sometimes cause him difficulties:

L246-249: The main thing I would like to change would probably be ahm, (pause) probably some of the students in the school are like the type you just don't want to be around, and they, like, I did have problem with some Year 12s when I was in Year 8 but it wasn't really that much of a problem.

Parenting focus

Both of Chris's parents are highly involved in Chris's career plans, their involvement taking the form of assistance and advice with subject selection and discussions about careers (L 76: *My mum favours business, she wants me to be an accountant or business something like that. My dad wants me to do science*) and (L 27-29: *we have been doing a lot of discussion, like for the Year 10 its all like just to see what you like, to see what you're good at*) and (L 50-52: *(Dad) he said you could do chem. and*

maths). Their influence takes both an active and a passive form in terms of indirect influences through family activities that direct Chris's career choices (L 107-108: *Dad is a big fisherman so, and Mum doesn't like fishing so we'll do things like three of us, me my sister and Dad*) and (L 137-138: *once I saw like a DPI (Department of Primary Industries) officer came into our boat and checked our fishing stuff and that and I said I want to be that when I grow up*).

Chris's parents exert a high level of supervision of Chris, both in terms of involvement with homework and socialising

L 82-86: *Um, whenever I like, sit down to the TV they say, do you have homework to get done? Usually, I have to do it, and I am not allowed to do anything else until I have finished it. So, yea, they do, they keep pressuring me.*

Also in regards to active socialisation processes (e.g., L 112-114: *Yea, cause Dad declares dinner time family time. Yea, we basically talk about anything; basically, no matter what it is we talk about it, yea*) and instrumental support through information dissemination (L 155-157: *... for example DPI, Dad can ... I've got numerous sources that can easily get me...and ... for example, Dad, his friends, yea, something like that*).

Chris does not have a particular person that he calls upon for emotional support, being equally at ease with either parent depending on the problem, possibly indicating that there are no difficulties relating to either parent:

L 102-105: *It would probably depend on what the problem actually is. Like, well for example, if it was like a boy, I would go to Dad, if it was something to do with school work I'd go to Mum, anything to do with friends and stuff, I'd see my friends.*

He does however, identify with his dad, perhaps a natural tendency for a boy who has a good relationship with his father (L 122-123: *A family member would probably be Dad. Don't ask me why but I do!* (laughs)).

Self-presentation

Chris is motivated to succeed in his chosen career, and he likes a challenge (L 38-40: *I came to the reality that I can't do maths very well so that actually motivated me and I actually got my first VH in maths (chuckles) which I am very proud of*). Chris demonstrates agency in his endeavours to narrow down his career plans, (L72-73: *Because I think I wanted to be six things but now I only want to be three things*) and he has a level of self-confidence and assurance (L62-63: *Well the PAL thing (Year 8*

Induction Program) *was annoying, because they treated you like a baby, as if you didn't know anything so it got annoying, really annoying).*

Chris has a fairly strong sense of race as he positions himself as separate from Indigenous students and perhaps there is an element of fear associated with his experiences of different racial groups at school:

L 251-257: *Well, I don't mean to be racist, but it is usually the Indigenous students. Like it sort of sounds like they are trying to fit in, like they have, but it sort of sounds like they are trying too hard, they've got like, I don't really like people who like, for e.g., wear their cap on sideways, I don't see any use for that, and they use the lingo, like how they use hand signs and all that, see I don't find any use in that, and I, I wouldn't, like the way they act, like to other people.*

The school he attends has a large proportion of Indigenous students and on the whole it seemed to me that there were few problems arising from clashes of culture when I taught in the school. Perhaps Chris's view is connected to influences arising outside the school microsystem.

There is a strong drive for self-actualisation in Chris's narrative (e.g., L176-177: *now I've actually got my Learner's and that has had a big impact because now I'm actually allowed to drive (laughs)*) and:

L 195-198: *Well, probably, the biggest one I can remember (positive experience/achievement), well see me and my friend, X--- we have this feud of like who can get the higher marks because he is always the smarter one, and I absolutely flogged him in a maths test cause he's usually a VH student, and I actually beat him. I think that was a great achievement for me.*

For Chris significant events are related to enriching and developing the self. Perhaps this shows that because Chris has few calls upon his resources to support others¹², since these are absent from his narrative, he is able to attend to and prioritise his own needs. Such a placement possibly supports his endeavours to achieve his chosen goals. Linked with this relative freedom to pursue his own needs is a strong affiliation to his friends, who are very important to him (L 121-122: *It would probably be... the person I identify with most would be my friend A---- because we like similar things and we react similar to situations*) and (L 212-223: *Like staying in touch with friends and stuff, like don't let them drift.*) Moreover, he perceives his friends as the "right sort" of friends, perhaps as a result of suitability criteria imposed by his significant others (L217-218: *I suppose they are a good set of friends, like they are not smoking, drug type... (chuckles)*). I make this type of inference regarding the parental criteria consciously heeding the advice of Silverman (2004), who says:

¹² I have known the family over a period of years and they give the impression of stability and cohesion.

Most qualitative researchers who champion the subject's point of view or privilege experience simply do not question where the subject's 'viewpoint' comes from or how experience gets defined the way it does by the very individuals whose experience we seek to document. Do those not emerge in some way or other from the varied contexts out of which we 'draw from experience' to convey accounts of who and what we are? (p.343)

Throughout these analyses I seek possible relationships between the student's views and other microsystems.

Future orientation

The future is constantly in focus for Chris, either in connection to school and career activities or with regards to personal skill attainment. His narrative is progressive (Lieblich, Tuval-Mashiach, & Zilber, 1998), that is, the dynamic of the plot of his stories are ones that move from negative to positive, for e.g.,

L181-185: *Well, probably, at the time, it was negative, like when we moved from Brisbane to Townsville, in Year 5 I felt like, I'll be leaving my friends and all that. But you eventually get over it and because I was young and everything you sort of forget about them, and make new friends. So it was a negative, but now it's just a... You know? We just travel down there once a year and meet all the relatives and it's all fine.*

Chris expresses a slight hint of apprehensiveness about the future in connection with travel overseas (L 208-211: *Yea, probably one of my thoughts would be not to get killed overseas cause all that talk about terrorists and stuff and we're just travelling to like three hot spots, basically America, Europe and Hong Kong*), in connection to losing his friendships (L212-213) and in general (L282-283: *Yep. I hope it (the present) stays that way (pleasant) too!* (Chuckles)).

Mesosystem connections

Chris's home and school microsystem links appear to be strong because of his parents' involvement with his schooling and because both parents are teachers. It is likely that there is a level of congruence perceived by Chris in the contexts by virtue of his parents' occupation alone. Additionally, since he attends the school where his father teaches, what would otherwise be defined as an exosystem connection by Bronfenbrenner, his father's place of work, is now Chris's microsystem. Sharing a microsystem with his father is likely to have substantial ramifications in Chris's perceptions and evaluations of the school and home contexts. This emerges from his narrative as well as his non-verbal communication.

Exosystem connections

While strong links to the exosystem were not apparent in Chris's narrative, an implication of the exosystem was detected through his statements regarding a fear of terrorism. The television can import the exosystem into people's homes (Bronfenbrenner, 1979, p. 242) and Chris mentions that family discussions include discussions revolving round TV programs (L112: *the topic during tea, or like, we'd comment about the show we're watching*). Television exerts its influence indirectly through the effects it has on the parents and their subsequent interaction with their children, but also directly upon the children if they are watching the television as Chris seems to indicate.

His perceptions about his mother's school, an exosystem dimension for Chris, are constructed through discussions that occur in the home regarding working conditions and schooling in general (L65-67: *I do know that they..., it is under-funded, they talk about that a lot, my mum, cause she works at X High, talks about class sizes a lot, and she finds it hard to teach and that*), however, these were the only examples of exosystem links that were evident in Chris's narratives.

Summary

Chris presents a picture of an adolescent who has no particularly pressing concerns relating to his family or school life. He is looking forward to the future and actively works towards his goals. There is congruence perceived between the home and school environment, partly because both of Chris's parents are teachers but mostly because of his parents' involvement with his schooling. There is a big emphasis on friendships in Chris's narrative showing that he derives both emotional support and social companionship from them which enhances his school experience.

Chris is a little apprehensive about the future and can sometimes feel intimidated in the presence of certain people or groups of people. This apprehensiveness is also reflected in his optimism score which is rather low for a typical student. However, since the survey was conducted at a time when Chris and his family were preparing a trip overseas in a climate of political uncertainty it may be a consequence of exosystem influences rather than a dispositional characteristic.

Research into the perceptions of students whose parents are teachers in the school they attend would add an important dimension in the validation of Bronfenbrenner's theory.

5.2.2 Alex

Global Impression

The second interviewee, Alex, appeared to be a little more apprehensive than Chris. Upon entering the classroom where the interview was conducted, his body language was somewhat stiff, perhaps because he had not talked to me before this occasion and perhaps because his background appears to be a little more governed by rules than Chris's (e.g., L5: *Mum and Dad didn't know the rule that*); this interview had no precedent for him to refer to. However, by the end of the interview he was comfortable enough to inquire about my thesis, asking how many words my report would have to be (L419). In relation to other interviewees, Alex's quality of mind (Scholes & Kellogg, 1966), transmitted through the language he uses to describe and comment on specific issues, is considerable for an adolescent.

Alex's family belongs to a socioeconomic group whose cultural practices appear to mesh well with those found at school. Although there were no big interconnecting patterns between the two microsystems of home and school, the two contexts appeared congruent in that they both supported learning through activities that support knowledge acquisition, like reading, and values conducive to studying. Alex obtains instrumental and informational support for his aims from school, to which he is attached, and emotional support from his peers and, to a lesser degree, from his father.

Throughout the interview, Alex was comfortable answering questions and his responses were well formed, eloquent and reasoned, with few pauses or tag questions (e.g., "You know?"). There was a confidence in his speech characterised with an even tone and few hesitations or hedges. His vocabulary was well developed and informative (e.g., L99: *They're two completely opposite ends of the scale*) and (L154: *that's fairly singular*) referring to a solitary hobby) and there were few, if any, empty adjectives used (e.g., awesome!). To me, this indicated the effects of being a reader, as well as the effects of a family environment where reading is a prominent activity (L243: *cause we read a lot in our family*) and (L221: *Say in the paper this morning there was a thing about...*).

His narrative shows him to be very family centred; his future aims included having a family, (L386-7: *But I guess I want a healthy family and I want a successful marriage. Like, 'cause my cousin, he just went through an ugly divorce*) perhaps an unusually mature statement for a boy not yet 15. He had interests which connect his school work to his life out of school (e.g., L 38 *I'm interested in just what we do, life and physics and chemistry and all those things* and L24: *Design and Technology because I like designing things*) and (L154: *I enjoy building model aeroplanes and helicopters*). Alex says he is

very connected to his friends (L215) and gets both social companionship and emotional support from them (L 274: *I've grown with them like I can tell them things and ask them for help and confide in them and that sort of thing*) as he seems to spend much time with them (L 231: *I find I spend more time with my friends on the weekend than I do with my family*). The loss of his friends would be upsetting

L344-346: *Well when I was younger my friend he moved down south and I was very upset because we were quite close since like year 1 we knew each other and he left about year 5. And I was quite upset when he left.*

He appears to have the inner resources to cope with changes, as in his transition to primary school (L73: *Yeah I really enjoyed it, like I really liked my teacher and I made a lot of friends real quickly*) and is adaptable and mature for his age. For example, he has definite aims and is able to rationalise his relationships (L41-42: *I mean I find that if you like a teacher, the teacher likes you*) and he is very self-disciplined (L131: *And, if I have trouble with work I go home and I make sure that I figure it out*) and quite serious

L406-410: *I mean I guess well what you do now really reflects on what you're going to be when you're older. I guess everything I do now. You know I think about everything I do now and how it will affect me when I'm older and yeah I find that I'm you know I think about what I do quite well and you know the outcome, what will happen.*

A value of structure and order was prominent in his responses.

School Focus

From his first day at school Alex reports a positive school experience (L73). He rejects what he sees as the 'dominant' adolescent discourse of hating school (L97: *I like school I don't hate it like a lot of people*). For Alex school is an institution that absorbs, entertains him (L 109-10: *Yeah I wouldn't like it (if he had to leave school) because I would have nothing to do all day and I like learning, I like to learn new things*) and is necessary to his future plans (L98: *I think it's very important for like my future career*). School provides him with the informational support he needs to realise his career aspirations (L299: *Mr N----- um ran the SMART conference*). Alex supports his school (L91-92; *I do support them in inter-school competitions and all that sort of thing*), has a positive working relationship with his teachers (L41) and likes the fact that he is not lost in a large school (L394-396: *... they (the teachers) know who you are, and what subject you need help with*).

Parenting focus

Early on in the interview there was a hint that Alex felt that he was being pushed to one side by his parents with the arrival of his younger brother (L6: *so they just shipped me off to school anyway*).

L57-64: *Whoa, I remember I didn't want to go (first day at school) and I chucked a big tantrum. And, um, that I was terrified of leaving home, and that sort of thing. And I think that my um my younger brother was born on the day, my first day of school so um, you know my sister was sick and she got to stay home and I thought that Mum was favouring my sister that she got to stay home with the baby and I didn't.*

This parenting issue appears several times, not overtly but rather by the absence of references to direct parental input, which was abundant in Chris's account. For example they did not help him make his subject selections for Year 11 and there is a very weak reference to them acquiescing to his choices (L31: *Yeah, ... they quite like my choices*) before he proceeds to talk about his own role in determining his subject selection. He speaks of them knowing what he is doing but letting him make up his own mind (L88: *They sort of knew... that it was my decision and they weren't going to push me into what I didn't want to do.*) Is this an active decision on the part of the parents or passive, due to lack of time or interest? Perhaps Alex's strong motivation and self-management leads them to trust him to act responsibly

L138-142: *Um, yeah, they rely on me to be responsible for myself and, um, if I do go out, and they ask me if I have homework and if it's only small I say that I can do it when I get back. But if it's large I often don't go out. I like to get it done. Yeah they trust me to get it done.*

However, the many pauses and hesitations in replying to this question, from a boy who usually answers quickly and with confidence, led me to think that he said what he thought would be the correct thing to say. Leading support to my ideas was the Alex's weak reply to questions regarding his parents' influence in career choices, making me think that they did not figure very strongly (L314: *Yeah, my parents are fairly behind me*).

There are some suggestions of marital difficulties as he mentions that his parents are still together (L213-214: *we're quite close... I mean, I ... Mum and Dad are still married and everything*) without elaborating further and immediately switching to his cousin's marital break-up and then to his siblings. Later, he mentions his concern for his little brother. He is sorry that he will not be able to see him graduate from high school

L376-379: *Well I'm really concerned about um you know my brother. Like when he comes to high school me and my sister aren't going to be here. So, like, you know, I want to see him when he gets older. And um I want to see him graduate and all that sort of thing. But because of my, um, Special Forces thing I'd have to move to New South Wales.*

I speculated whether this showed concern because he felt that his parents will not be there for his little brother, or whether it was the role of eldest son that he is adopting. Such a role, if that were the case, in my experience, might be more typical of a single parent (mother only?) family. Additionally, his sister does not figure much in his narratives so perhaps there is a residue of rivalry from their younger days, not an altogether unusual occurrence with adolescents.

The relationship with his mother appears to be less important than that with his father. She is rarely mentioned, though he talks about being close to his grandfather (L264), doing things with his father (L 177) and getting emotional support and advice from his father (L335-336: and L248). On the whole it appears he gets instrumental support from his mother by way of occasional help with school work but emotional support from his father, as he would go to his father if there were any problems with bullying (L248). His father seems to have high aspirations for him as he gets “mad” (L123) at him when he is not doing school work.

In all, he spends more time with his friends than he does his family (L230-231), perhaps not atypically for an adolescent though there are no references to specific family activities. Even in connection to eating or watching television he appears to be solitary (L127: *they check with me while I'm watching TV and eating*).

Self-presentation

Alex presents a picture of himself as a responsible leader (L 412: *I think I'm quite responsible and I think I'm a good leader and organiser*). He is well organised and very sporty, (L 285-286: *I like the real physical side of stuff. Because I do a lot of running and that sort of thing myself. I like, yeah, I like the physical side of things*) engaging in a dominant masculine discourse. Through the clause: *Because I do a lot of running and that sort of thing myself*, he positions himself as being entitled to his views through the experience he has had (Edwards & Potter, 1992).

His career choices reflect traditionally male dominated ones and his hobbies also support this masculine image. He has a positive outlook, e.g., blaming chance when he lost his squash tournament

rather than his opponent or his own ability (L358: *And you lose if you get hit with the ball. So I lost cause of that*) or is it perhaps a tendency to deny that he could have played better? He does not let disappointment deflate his confidence and is stoical when he does not get what he wants:

L333-337: *Last year I thought I was going to get a lot of awards at awards Night but I only got one. So I was kind of disappointed. But then Dad told me when a lot of my friends got quite a few awards each and that, Dad put it in perspective that I shouldn't be mad for myself I should be happy for my friends. And that kind of made me realise that you know I didn't get an award that, that doesn't matter.*

He likes to be thought of as caring, outgoing and sociable (L368-369: *I'd tell them I'm fairly outgoing. You know I can make friends easily. I'm really loyal to my friends, like if they ask me for help I help them*) again, perhaps, subscribing to the Australian discourse of mateship.

Structures/procedures/order

A theme reflecting structures/procedures/order emerged from the interview narrative. It is perhaps a concept that has a protective function for Alex since he refers to structures/procedures in a number of ways: in regard to his parents' behaviour (L5: *Well Mum and Dad didn't know the rule*); by an expectation that there should have been a code of conduct that he could follow on his first day at school (L54-55: *don't know where to go and what to do and how you're supposed to act*); a binding commitment to an activity, (L180: *I probably wouldn't be able to sign to*) stronger reinforced rules in school (L186-187: *know for what they do they should be sent straight up to the office and the principal should deal with them there and then for what they do*) and a desire for a structured career

L278-280: *I also would like to be in the Special Forces. Yeah I'm into a lot of the military sort of things and it's not from watching movies and all that it's natural, not a spur of the moment decision.*

Finally, he expresses his liking for the school because it has a manageable structure (L394-396: *I like that it's small and you can go up to the teachers and you can ask them for help and they know who you are*), as he would not like an unwieldy school (L 81: *Well I was going to go to X High but it was a bit too big*). The value for structure also emerges when he speaks of his own attributes (L412: *I think I'm a good leader and organiser*) and from what Alex says it appears that it is part of the family culture.

Future orientation

Alex is very focused on his future and has definite ideas about what he wants to do with his career

(L319-321: *Well I've always wanted to do civil engineering*). He has been active in obtaining information for these plans (L296: *I talked to some engineers there and they told me the basics of what you need and what the job does* and L307: *Well my friend's dad he knows a lot about the army. So I got a lot from him*), and by placing I in each sentence he positions himself as the agent of these endeavours. He thinks about and actively plans for his future showing a high degree of agency (L406-410).

Mesosystem connections

Few overt mesosystem connections between home and school are apparent from the interview. There is no mention of his parents coming to visit the school or being involved with school activities. His father however has expectations that Alex will be doing homework and this may well be enough of a link between the two contexts for support to be perceived by Alex. In other words, Alex may see his parents' expectations as endorsing his school activities. A cultural connection between school and home is evident in the activities that Alex pursues at home (*reading, learning, (analytical) discussions* (L224-227) *and model making*) which doubtless reinforces his perceptions of congruence between the two microsystems, and strengthens the emphasis on academic outcomes.

Mesosystem connections are apparent between his home and his peers (L266-269), showing that his peers' home environment is positively endorsed by his parents. From what Alex says about his parents knowing and being friendly with his friends' parents it is possible that his parents have actively engineered his friendships.

Exosystem connections

There are few references to exosystems. For example, Alex does not refer to his mother's studies or place of study or to his father's work place or affiliations. This may be atypical of an adolescent who is experiencing a stable childhood trajectory within a stable family, and could be the result of a relative "distance" between himself and his parents.

Summary

Parental involvement is low for this student based on the relative absence of reported family activities. On the other hand, Alex does mention a couple of times getting advice from his father so parental warmth appears to be experienced to some degree. Perhaps the personality of one such as Alex, a

responsible, serious and committed student, permits parents who are busy with their studies and work to spend less time with their child since they trust him to behave in an appropriate manner, leading to greater freedom for him. Further research needs to refine the issue of parental involvement to pursue how that varies as a function of offspring personality. The emergent issue of order and structure also needs further investigation since it appears to play an important role in supporting Alex's meaning making of school and social behaviour in general.

5.3 Resilient students

5.3.1 Kim

Global impression

Tuffin, Morgan and Stephens (2001) distinguish between narrative position and subject positioning in their analysis of autobiographical narratives:

As a speaking subject the storyteller is variously positioned through the story line... when a storyteller tells of their own experience they are constituted as both narrator and protagonist...in our analysis we distinguish between narrative position and subject position. Narrative position refers to the perspectives of the storyteller as narrator. However, our focus has been on the subject positions constituted for the protagonist as the person experiencing the... (p.59)

Kim is academically resilient and my quest in this interview was to understand how his personal qualities, meaning of school and general outlook helped to make him resilient. Essential to his self-identity is the way he positions himself as protagonist of his story, constructing himself as an active agent of his destiny.

Kim wants to compensate for what he saw as the failings of his family

L300-305: *Like most of my family, cause we're like known to be the psycho people cause you hear in the news, W---, W----, W-----! Because, like, my brother, he burnt down half the school. J---- he's really out there.*

and (L316-318: *because with W--- they have a lot of background with their family, like negative background in most cases, yeah because there's a lot of trouble at home, that's why they can't concentrate at school*). He wants to break out of the mould and not follow the same pattern. (L247: *It's cause like most of my family they haven't really amounted to much and I want to be like different to the rest of them*).

Kim has had a very unstable troubled childhood, with an abusive, possibly alcoholic mother but he cares for people and his family and takes a philosophic view of his negative experiences, trying to minimize and not dwell on them.

L132-135: *As soon as I was born I was about 2 months old she left my dad and then we moved to Townsville and we went back when I was 6 and then again when I was 12, and I seen him again when I was 12, I went up there for Christmas for 6 weeks, the whole 6 weeks, and I went up there again.*

Kim rationalises his views extensively and feels that he is not like most of his family, but resembles his father

L400-402: *I actually did think I was found on a door step, because I couldn't find a reason why I wasn't like anyone else in my family. But I found out and I got to know him and I know that's where I got it from. Like, I don't know... a smart gene or something?*

He is loyal to his family however, defending their honour, (L 189-190: *... one guy he said that my older brother was a paint sniffer so I just like psyched out about on him*) and deeply fond of his siblings (L568-70: *I worry about J-- and S----- and C-----. Because you know I think of what happened to me and J-----, because she (his mother) always used to flog us like on a daily basis*).

Language and reasoning are well developed, for he uses many descriptive words e.g.,

L349-353: *How do I see the future? Well there's pollution now, there's going to be a lot more pollution to come, because of, you know, non-renewable resources. The future, really, I don't think they know what to do about it. The next thousand years or so, cause they got to develop some sort of other technology so they stop using renewable resources. Un-renewable resources!*

and a clear sequential narrative e.g.,

L542-547: *N----- was about to walk across the road and this car comes speeding around the corner, because it was like getting chased by a cop and then it was about to knock him fair square, like right up the backside, and you know he could have died so I grabbed him and just chucked him off the road.*

He tries not brag but does position himself as a bit of hero (L 549: *I saved N----s' s life that day. I was fairly proud about that*).

School focus

Kim is positive about school, his experiences of both primary and secondary school are relayed in a positive manner (L28-31: *Well that's alright, we didn't do no work for the first term. All we did was muck around and sing stupid little songs. But the first day we played Simon says. And I won, which*

was good), and analysed in terms of societal (exosystem) influences and in terms of his personal development:

L10-15: *In Year 8 it's kind of a bit..., it's a mix between you're anxious and a bit intimidated you know because of what you see on TV, kids getting their heads flushed down toilets and stuff, you know. But you can really make an effort, if you're like really that sort of person, you know. But if you don't care it's just like primary school. For me I went through. Year 9 was like, my sketchy spot in it all, I use to muck up a lot and Year 10 you really start to settle down.*

He distances himself from the student discourse of dislike of certain school subjects (L42-43: *Maths, it's kind of alright, it's not something that I loathe going to or anything*) and has picked subjects because he is aiming to study medicine at university, (L47-49: *In Year 8 I was actually looking for a degree in architecture, a masters, but now I don't know. I'm put up between a degree in medicine and a degree in architecture and design*).

He is ambitious but has contingency plans,

L431-435: *I'm going to go through Year 12 take an OP test and what I get from that depends where I go really, like if it's like 1 or 2 yeah I might get a chance of getting a Uni course in medicine, but if I don't um..... I might go back to study like at TAFE (Technical and Further Education College) or something.*

School is valued despite some negative teacher relationships

L597-599: *Mister D-----, he calls you like a dickhead and slaps you in the head if you do something wrong and seriously I don't think you're allowed to do that and so, yeah I don't know. Other than that yeah it's pretty good.*

Kim does not want to magnify these negative instances into big issues, (L603: *Not really, like I don't care much, the most I do is just act cheeky back*) unlike other students who might take action against such teacher behaviour.

Kim evaluates his school's curriculum and believes that it is superior to other schools, (L144-145: *I like the programs they have here, the education here is really good compared to other schools like XXXX and stuff*). Despite having difficulties getting to school, due to his foster mother (L198-201: *because N-----s mum she goes out drinking Sunday's like I'm against it but she does it anyway and she's kind of sick in the morning so she can't drive us*) he makes a valiant effort to persevere and do

his assessments. And he is emphatic when he says that he is studying for himself, not to please anyone else in his family (L255: *I don't do it for her (his mother), like I do it for myself*).

School provided informational support when Kim wanted to investigate his career options (L465-467: *(school) had like this job day where you could walk up to like doctors and ask them what you need, you'd write it down in your little booklet*).

Although Kim has been suspended from school on several occasions those incidents appear to be connected to fights with other students during a (troubled) time when he was living at home with his mother.

Parenting focus

Kim's relationship with his natural parents was relayed to me towards the end of the interview. At first, it seemed that Kim was neither willing nor wishing to speak about his troubled home life and indeed he minimised it when I enquired why he was living with foster parents

L94-104: *Because she (his mother) wanted to move to Ingham and a place called Taylor's Beach, it's like a turnoff from there. But I didn't want to go because I would leave too much behind, so she goes, "alright then you can either live with your Aunty or you know whatever". So I stayed over N---'s house on Sunday night cause they had to return all these videos, so I'd just go to school with them in the morning. Then my mum she said, "I'm going to go for a trip up to Taylor's Beach it's going to take about 3 week, so do you want to stay here with N----- and I'll give him money and everything while I go up and look for houses?" And I'm like "Yeah whatever".*

He respectfully constructs an "average" picture from what would seem to me like neglectful parental behaviour. He has mixed feelings about his mother but is attached to his siblings (L108-109: *Oh, It's a weird mixed emotion, like I don't really miss her that much, but it's the kids, my little brother and sister C---- and S-----*).

Later on in the interview when asked about a negative experience that he had, it transpires that his mother physically abused him. Nonetheless, he tries to play down and rationalise these stressful events:

L519-537: *Mum and me we got into a fight once, a fist fight cause she kept on slapping me and I didn't want her to slap me no more, so I said if you slap me one more time I'm going to drill you and then she grabbed a broom stick and just started whacking me. And then she had it in the air and she went to snap it on me but I like hit it with that part there (shows me his arm) and it started twirling up and then it snapped, oh yeah, I won't get into too much detail, with that yeah.*

HELEN: Why did she get annoyed with you, had you done something?

I: I don't know, personally I think she's crazy, or was crazy cause she said to me save the smallest steak, this was all about steak for C---- then I'm like I saved him the smallest steak and she came, and she's like I thought I told you to save the biggest steak for C-----, and I'm like you said the smallest, and she just started hitting me and slapping me and stuff.

HELEN: Yeah, so she was obviously a bit stressed at the time.

I: Um yeah she's really out there, yeah.

HELEN: That can't have been a good experience for you though.

I: Oh no yeah I guess now that I'm away from it it's all stopped, so but I think she takes medicine now and like it makes her temporarily normal or something.

However, as he is a reflective sort of boy he is concerned about his mother's behaviour and how it will impact upon his younger siblings who are still in her care (L566-68: *Sometimes I worry about J-- and S----- and C-----. Because you know I think of what happened to me and J-----, cause she always used to flog us like on a daily basis*).

Despite negative experiences it appears that his mother has instilled in him a strong self-confidence through her continued appraisals of his ability (L 251-252: *All she talks about is like how I should get an education cause she knows I can do it, you know, She reckons I can be anything, I just have to work hard for it*) and by singling him out as being different, smarter, from the other children (L391-396: *My family they didn't really think I was like any of them because like instead of chucking rocks and like dirt clubs at each other I'd be sitting there by myself making a sand castle or something*).

His father, geographically a distant figure, also seems to have been a very good influence for Kim from the age of 12, both through interactions with him (L 132-136) and through a bond that developed as a result of Kim identifying with him and his pursuits (L 386: *He read like stacks and stacks of encyclopaedias and junk*).

Finally, his foster family provides Kim with much support and positive appraisals of his ability, something that he finds a bit embarrassing at times

L420-423: *I don't know whenever I'm there all I hear is just, you know, is "oh he's a bright lad, he does well at school" and then I just walk back out. Cause I don't like people fretting over me, so I just yeah.*

Self-presentation

Kim's self-positioning is of special interest within this focus. While he is not boastful, he portrays himself as someone who is able to cope with school and has high ambitions which he is confident he will be able to realise. He is tough, recalls withstanding many physical trials in the company of his elder brother but is not angry or bitter, and concedes that these were accidents, or at any rate not worth worrying about

L513-519: J-----, it was an accident he goes whoa look how sharp this is and then he started going like that. I went...I'm like "go away man", like I tried to push it away but it was so sharp it just hooked underneath and wham. And this other time when he cut me, by accident again, cause he was like sawing this piece of wood and then I went to grab this chisel cause we were making a tree house and then it went zzz. Right there, yeah it was fairly deep. All these times when I like stacked my bike and cut up my leg and yeah...

Despite an explosive family life and many difficulties, he has a philosophical attitude, (L366-367: *So, I don't know if my values are like not right compared to other people* and L 336: *I don't know because you can't really point fingers at people*) and does not blame circumstances or low income for poor behaviour (L326-327: *No, I don't think so, it's mainly just you know drugs and alcohol that makes them a real bitter person inside, because that sort of stuff changes who you are*). Kim rejects what he sees as the "Bludge culture" (L484: *cause it was a real bludge town where you borrow off everyone else*) wanting to be dissociated from a part of what he sees as Indigenous culture. At the same time he is caring and thoughtful, holding on to that aspect of collectivist Indigenous culture

L550-556: My dad like before he... I didn't get in contact with him that year and I could; I knew there was something wrong, I could just feel it in my bones, but you know, don't worry about it..., you know nothing's wrong and then my mum comes to school one day and tells me that he's dead, and then I'm like, just thinking to myself cause I felt really bad and I was angry at myself because, you know, for a while I was thinking that he died because you know he was lonely because... him just there by himself.

And

L573-575: ... and J-----, J---- she's in a foster home by herself, because only blood relatives could get a hold of her you know, claim custody, but her mum didn't want her and I can't get her because obviously cause I'm not old enough.

Kim is highly sociable and connects well with his peers. He values his friends; they are the most significant people in his life, to whom he would turn for advice and support

L363-366: *But if you have really good friends, that you can talk about your problems with, like last thing you want to do, like your mum's on your back about "Oh what's wrong?" And you don't want to tell her because she might be the problem. But your friends, you know they listen and stuff.*

Future orientation

Kim has definite plans for his future and works towards them (L431-435), showing a high level of personal agency. He is trying to control his feelings when goaded by others so as not to jeopardise his education and get expelled, (L166-167: *I've learnt to tolerate others, cause I don't want to risk my education over them*) though some of the fighting appears to have coincided with problems at home with his mother. In many respects there are parallels between Alex and Kim in their future focus and their determination to succeed.

Mesosystem connections

While it may appear that there are few mesosystem connections evident in Kim's experiences, it is evident from his story that he makes these connections through his interpretations of his father's thirst for learning and his mother's and foster mother's encouragement of his studying. There may not be many activities going on around him per se that reflect the school culture, something which he comments on about his foster family (L232-239: *everyone in that house, what's a polite way to say.. Intelligently challenged*) and about his own mother (L505-507: *there was heaps of distractions with my mum cause she always used to bring all her stupid friends over and have parties and stuff, it was real annoying*). Nevertheless he actively pursues learning which he sees as something he has a talent for, a talent he has inherited from his father. In other words, he makes his own mesosystem connections. This construction, aided by his mother's attributions to his ability, and his later identification with his father, may be a protective factor for Kim.

Exosystem connections

Although Kim says he is not concerned about issues that do not directly affect his well-being (L261-263: *I'm not really concerned with politics cause I'm like probably too young to even, you know for it actually affect me in anyway, unless it like it's cutting off family funds and then there's a problem there*) he has thought about exosystem issues, having views and opinions about them that show considerable cognitive processing and analysis

L337-341: *So you don't know who to blame for it (pollution) and you can't really get anyone to do anything about it, sure there's going to be protests but that doesn't really get you anywhere. So I don't know. Like yeah there's Greenpeace and stuff you know that clean up oil spills and all that sort of stuff, apart from that, I don't think anyone really cares about that sort of stuff.*

and

L270-274: *Aboriginal land rights I'd say, yeah, because if we're trying to reclaim. My Aunty she's like a spokesperson for this company that is trying to reclaim land for Aboriginal people and yeah, I sometimes go to meetings with her. Cause it's interesting to see what they have to say.*

He views racism considerably differently to the other Indigenous students of this study, taking a more philosophical perspective and does not position himself as a victim. (L281-284: *I just think like me being black of course there's people gonna not like it because of my skin colour you know, skinheads and stuff but I try to look past that, I try to see the good in everyone*).

Summary

There are many parallels between Kim and Alex, particularly in their school focus, future aspirations and orientation. They both have a strong positive view of their school experience and are highly motivated to succeed, having definite plans about the future. They have different microsystem contexts but both share a high degree of self-confidence and a positive outlook and also value and gain emotional support from their friends. Their narratives are relational¹³ in that there are many connections and references to others, the absence of which may signify adjustment issues. They make analytical evaluations and project a high degree of agency and self-determination. Despite multiple stressors, Kim has a very mature attitude, in many ways similar to Alex's.

It seems their self-confidence stems from their home environments, though through perhaps very different processes. Kim's ability to seek out people and environments positive to his development, e.g., in choosing to live away from his mother, is a characteristic that prior research has connected to resilient individuals (Osofsky & Thompson, 2000). The considerable stresses that filled his childhood quite possibly helped him to develop adaptive coping skills in a manner perhaps similar to that stated

¹³ The concept of relational configurations has had a long history of theoretical investigation in psychoanalytic psychology and in personality and social psychology (Jack, 1999). These relational images are core issues in depression, and contain representations of interactions with an intimate other(s), imagined or real. The self is not experienced as "separate," but as embedded within relational configurations and interactions: the self is relational, being the product of internal and external dialogues, or the result of a conversation between complementary, competing, and contradictory voices or self-positions that simultaneously participate in social relationships (Lysaker, Wickett, Wilke, & Lysaker, 2003).

by Aldwin, Sutton, and Lachman (1996) who found past stressors had helped younger and older adults develop effective coping skills to handle new problems. It would be valuable to interview their parents and find out how they perceive their offspring's ability and their aspirations for them.

5.3.2 Tess

Global impression

I have known Tess for three years, since Year 8. Throughout this time she has always projected a fairly happy disposition, making her generally well liked by other students and teachers. She is not very academic but can pass her subjects with some effort. Although I had previously taught Tess in Year 8 and 9 she was quite shy about talking with me at first, giggling with nervousness, but as she relaxed, the conversation flowed more easily.

Tess's use of language was more restricted than Kim's, (L372: *I'd change the environment, make it more greener*) her use of descriptive words less confident. Her responses were always a little tentative. However, she is well adapted to the demands of school; a student who has never got into trouble at school and has never been suspended.

Her family consists of a single mother, siblings and her grandmother. She has experienced instability, having to move from her grandmother to her mother at various times. They live in an Indigenous hostel until they can get a housing commission house. She is very connected to her extended family, particularly her grandmother and sees herself as an active participant within the Indigenous culture. Her mother advises her about boys, and is there is a suggestion that she is concerned about Tess getting into trouble. Yet Tess's narrative shows a greater connection to her grandmother and her friends than her mother.

Tess voices concern for Indigenous rights, wants to help her people and choose a career congruent with these goals. She is not particularly attached to her school, though she enjoys being there with her friends and believes schooling is necessary to help her reach her goals. Tess is modest, cannot recall being proud of anything that she has done other than helping her Nan (L307-308: *No, I can't. I don't know. Well I cleaned up the whole house underneath and everything for my Nan when she was sick, so*) and thinks it shameful to boast (L340: *oh shame. Oh!*) or be self-promoting. Tess is quite focused in her school work, does not like her teachers to be unprofessional, but although she wants to stay on at

school to Year 12, if she could get a job she would be tempted to take it (L379: *Oh um yeah I'm fifty-fifty*).

She is somewhat apprehensive in her home environment because she has experienced violent racial attacks; she projects a “war zone” in her narrative, and she says she is fearful when she is alone.

School focus

Tess has had pleasant school experiences and sees school as instrumental to her future job aspirations (L35-36: *I was happy to be at school, not going around, doing nothing with my life. Just sitting there. It's good being here so I could get a good education, work well*) and (L63: *Very relevant it will help me during life*). Friends are important in making school acceptable and she believes being helpful and cooperative was a way to make friends at primary school (L12-13: *I was a bit cheeky sort of, and it was good, the teachers helped me um I helped other kids, so I can talk to them, it was good*) and (L18-20: *... It was scary at first; I didn't know what to do when I was in primary school. Um I was quiet, I kept to myself. Yep made some new friend*) and then at high school (L27-29: *Um it was all right, it was good, because I knew my friends*). She has no complaints about the school or the teachers except that she likes them to be very competent and helpful (L394-395: *... real smart and real nice, they'd help you every time if you, they'd help if you need help*). She likes teachers to be professional and stay on track showing that she has strong views about her education, reflecting on the quality of her educational experience

L383-388: *I don't know. Mr G----, oh sorry. Mr G---- can get grumpy real bad and do a lot of work and everything, talks too much gets off the subject. Yeah. He's all right sometimes when he wants to be. Yeah he's chat-chat. It's good but it gets on some people's nerves, and he goes off the subject about his life sometimes.*

She has some academic self-confidence (L46-47: *I'm good at writing and sometimes drawing and, when I put my mind to it, Indonesian*) but while she intends to stay on to Year 12 if a job opportunity arose she perhaps would take it (L379).

School has not been particularly instrumental in determining her career choices or in providing her with informational support, showing that she does not use the resources offered by school, suggesting weak links with school. I also perceived that Tess experienced some racism at school by the way she answered my question regarding racism. She provided an indistinct, tentative answer that, judged by

her responses in general, led me to think that she did not wish to make a fuss but there were instances of discrimination (L160).

Parenting focus

Tess's mother was instrumental for her obtaining information about her career needs, (L236: *Yeah I've checked the Aboriginal and Islander health care, we went there, my mum took me*) but she did not actively help her select subjects for Year 12; she is not as prominent in Tess's narrative as her Nan. She is busy so she cannot help her with her homework nor check if she has any homework (L106-8). Tess does not take much notice of her mother's church affiliations, and does not relay many interactions with her mother. I did not get the impression that she was particularly well monitored (L88-89: *Yeah they know, they think I'm responsible I can do yeah, do the things first and then I can go out, do your homework and that, so they think I can do it. Then I can do my stuff*). Her facial expressions and her vagueness made me think that she was probably telling me what she thought I wanted to hear.

Tess's Nan is the person who picks her up from school (L106-107) and whom she would seek out for advice (L186-188, *My Nan. Cause I'm close to her*). Nan is the person she wants to please, (L307: *Well I cleaned up the whole house underneath and everything for my Nan when she was sick, so. That was all right*) and appease

L313-322: *Spilling paint on the carpet. She (Nan) doesn't know yet. She's at Normanton, her good expensive paint. Yeah and I had to clean it. And it's, you can tell because it's real clean, the carpet where I cleaned the paint up and rest is just a bit dirty. And so, there's three spots... Cause it fell down stairs. And it's all down the carpet. Yeah because she'll go off!*

Tess's father does not play an important role; she is not attached to him (L290: *No, happy I don't see him. I don't really care*). He is someone who has not made much effort with her since she was little.

No prominent family activity is mentioned and there does not appear to be an academic focus in the family. There is, however, a political focus stemming from Tess's mother's work with the Aboriginal and Islander Policy Department where she is an "administrator" (L196). This has perhaps influenced Tess's decision to help Indigenous people, and her career choices of Indigenous health worker or child carer

L220-228: *Well I want to work as an Aboriginal and Islander health carer. Or child care teacher yeah. For the child care I like kids, I like working with them, they're real nice and for the Aboriginal and Islander one I want to help Murries, our kind, to help them get off the streets and*

everything. Help them with their health problems and everything, because it's horrible seeing them out there doing... getting drunk and everything.

Whilst her Nan provides emotional support, her mother is her role model; she helps her shape her ideas for the future and the world around her. This concurs with research that has shown daughters have a strong tendency to identify with mothers (Chodorow, 1978).

Self presentation

Tess presents herself as a caring, cooperative person (L336-337: *That I'm nice, I'm good. Um I help people. Good communication skills, yeah. I don't know*) who is going to help Indigenous people. She is concerned with the world which she sees as a harsh place where there is a war going on and she wants to have a part in redressing the balance. She is on a quiet mission. Being shy and modest, she would not project herself forward; however she feels capable enough to make judgements about society and the contexts she has experienced.

Friends are important to her, as they provide her with emotional support (L 216: *they're real good, nice, they're real nice and that yeah. They help you out*) as well as entertainment (L 209-210: *they're funny*). They are also strong, (L210: *they don't take no, no... rubbish from anyone*) a quality she clearly admires. Further, because she is a bit fearful on her own she needs friends for her safety (L138-139: *Yes, (I am worried) If I'm not with a big group, if I'm just by myself at night time, walking around, yeah*). However, she does not position herself as a victim, but simply aligns herself with the Indigenous group of people (L117-118: *Because I'm black sometimes I get scared of the skinheads*) although she is critical of some of their responses (L170-172: *I think hmm I think yeah we should well Murray people should complain about it more, cause they don't really they're a bit shy sometimes. And they don't really say nothing. So...*).

Future orientation

Tess has clear goals and aspirations (L343-348: *Something that's important to me is getting the jobs that I want. And working the best I can*). She is moderately happy being at school, but perhaps because her mother did not need a great deal of education to do the work she is doing Tess wonders how long she needs to stay on at school. A tension appears between what she believes is the correct course for her, perhaps due to school input, and what she has observed in those close to her. The future in terms of society at large is uncertain (L110) but this view strengthens her resolve to play a part in shaping it.

Mesosystem connections

Tess's narrative did not point to many obvious mesosystem connections between school and home. The only strand that tied the two contexts together appeared to be Tess's own reflections that an education was necessary for a good job and helpful throughout life (L63: *Very relevant it will help me during life*). On the other hand, the absence of negative reports regarding her school experience and the lack of critical incidents and suspensions suggest that she fits in at school to an acceptable degree. There must be sufficient congruence perceived by Tess in the two contexts to make school meaningful to her. Certainly, when I taught her, both before and the year following this interview, she was focused in class and seemed eager to get good grades.

Exosystem connections

Tess sees the world as a fairly hostile place (L110-113: *It's violent and that, the world it's violent, it's horrible, the people stealing, lying a lot and the murders, rapes... so it's pretty wicked the world, you know. I think it's going to get worse*) where there is a war going on between Indigenous and non-Indigenous people

L143-150: *They drive up around places, cause we're staying at the hostel at the moment because we're on the Aboriginal and Islander housing plan and we're waiting for them to find us a house, cause I think we're getting one this month. Next month, December, yeah. And like they come at night time while everyone is asleep and they throw rotten eggs or something. When there used to be a lot of black boys living there and they used to all gang up and go outside and have beer bottles hidden in the ground and then throw them at them, because they were, the skinheads used to wear army stuff, army clothing and they were big and everything.*

She sees police as ineffectual but she also believes that it is up to Indigenous people to take action.

L163-172: *I don't know, the government, the police should be. Because when they ring up the police, the police take their time, sometimes, they just take their time, like half an hour later they'll come. So they need to be more quickly, to come. Yeah sometimes they're just lazy. 'Cause when they used to ring, the police they just take their time. I don't know, I think hmm I think, yeah, we should, well Murray people should complain about it more, 'cause they don't really, they're a bit shy sometimes. And they don't really say nothing, so...*

So, while she concedes social problems she does not appear to hold a biased view. The issue is perceived as an agency issue, and she believes that there are solutions.

Summary

Tess's connection with school is accomplished through positive peer relationships. Her beliefs that she must be certain of a good job opportunity before leaving school also reinforce her resolve to stay on to Year 12.¹⁴ Tess is not especially academic but is capable of passing her subjects to a level sufficient to enable her to achieve her aims. She is an optimistic girl; that is reflected in her eagerness to pursue her aspirations and goals and supported by her optimism score. Her resilience may be related to the strong connection she has with her Nan, whose words I suspect are echoed by Tess herself (L35: *not going around, doing nothing with my life. Just sitting there...*).

Tess has a strong female role model in her mother who I believe gives her an idea of the sort of working woman she wants to emulate. Though she is not particularly firmly supervised at home, she keeps herself out of mischief and participates in school activities to a degree that keeps her out of trouble. Her view of society and what she sees as the plight of Indigenous people is possibly an influence that guides her actions and motivates her to succeed at school. Indeed, her perception of a struggle between the Indigenous group with which she identifies and the other, non-Indigenous group, may contribute to her sense of agency, facilitating her school motivation, as has been found by others working with resilient minority students (O'Connor, 1997). Research into the views of Indigenous people in connection with their perceived agency for the future might provide additional insight into protective factors that assist to make Indigenous students resilient.

5.4 Students at-risk

5.4.1 Nathan

Global Impression

Nathan is an Indigenous student, living with his mother, who is engaged in a higher education degree. While I personally had a very good working relationship with Nathan as his science teacher, partly because I appreciated his artwork and encouraged him to use art in his science assignments, he is not someone who is universally liked by teachers or peers. The impression that Nathan gives is one of a student deeply disengaged from school, lacking direction and having few connections to other people, either adults or peers, though he appears to need instrumental, informational as well as emotional support. For example, his first day at school was *scary because he didn't know anyone* (L14). His

¹⁴ I met Tess recently and found out that she is finishing Year 12. She was out with her Nan and looked happy.

account is regressive happier times featuring in the past while the present is boring and the future uncertain. Unlike Alex, his use of language is not developed for he uses few descriptive words to illustrate his ideas, (e.g., L7: *Ah boring, just school. It was like ah nothing*). When recalling his school days he adopts a regressive emotional tone (L9: *Yeah, I just came to school, went to parade and then went to class. And I was happy then. I came to school the first day. But then it's getting old and getting boring*).

High levels of anger and frustration colour his school experience. Part of his frustration seemed to stem from his inability to explain his feeling and ideas e.g., in reference to art, which he has talent for, he says,

L 183-85: *Yeah it's just like, I can't do it, I can't. It's just, if I draw the picture and then the picture..., I don't like it, I just screw it up because I don't like it. And then I can't do it again because I just can't. I get stressed and I just rip it up.*

In reference to attachment to school he says (L 37: *Not really*), later elaborations making it clear that he has very strong feelings about school and about his school experience despite not saying (L 37). In answer to a question regarding communication with his teachers his approach is clarified (L119: *Not really because, I don't like to say why I'm getting angry*). These hint at a low level of exposure to analytical or descriptive conversation, and practice, and may be connected with English being his second language, although I am not certain that this is the case.

School focus

Nathan sees the need and the relevance of school (L143: *Yeah so I can get an education, get a job*); he says he would not take a job if it was offered to him because of the contingency of the situation

L150-151: *Need grades to Year 12. Because for most of the jobs now that come around you need Year 12. Because they won't keep you for like Year 11 if you were in Year 10 and you'd be there for a week and they'd probably ditch you out.*

But there are conflicting comments in his narrative that show that he is only staying on at school because his mother wants him to (L198: *She (his mother) wants me to do something for school but I don't listen*). He does not want to be there (L201: *And then I come to school every other day, and I'm like, **what am I doing???** (Nathan's own emphasis.) I just like don't want to come to school anymore. But then I have to because my mum wants me to do something*).

Nathan does not believe school is preparing him for the future, (L 530: *No, not really*). So there is a conflict with regards to school within Nathan and also, despite his mother's encouragement to stay on

at school, he gets conflicting messages about school from home. For example, his mother does not check his homework on a regular basis, (L253: *Yeah sometimes but she doesn't if she's at Uni*). She did not help him make his subject selection choices, (L 28) while at the same time he is being told by his family to get a job, (L395: *Yeah they keep telling me to get a job. So um...*). He tries to set some order to this confusion by relaying his plans for the future (L 399-400: *Yeah but then next year I'll be doing a school based apprenticeship. So I'll be doing it at TAFE and I'll be right when I finish school for the job*). But this is a thin veil to his real concerns

L454-461: *I don't really like school, but I want to get a job so I stay in school. But sometimes I don't. I can't cope at school. Cope with the work or teachers. Yeah, I ask for help and I get help. But then most of the times I don't ask for help I just sit there and float along. Because I'm talking (he does not ask for help).*

While he knows that his work is not up to standard, he does not want to admit that he needs help.

L482-484: *All my classes, like, I do the work but not as up to standard. Like, I don't do good or anything. I just go straight through it and try to do it. Like if I'm stuck, I won't do it. I won't ask for help.*

Is this due to his relationship with teachers? He says that he needs to 'like' the teacher before he will approach them and does not want to draw attention to himself.

L521-523: *I don't like it, the teachings (religious) or her (The Indigenous liaison teacher) Sometimes if I have problems I won't tell her. Anything she'd ask me, I won't say it. I just won't, like, talk to them. If I don't like the teacher I won't talk to them. They think I'm OK if I don't talk to them.*

School figures strongly among his concerns (L548: *Yeah it worries me because I won't get a good grade because I haven't been here...*) and (L550 -551: *Because it's, I just don't like it. It's getting too boring, I don't like the teachers and I can't cope*). He says if he had a tutor that would help him (L553) but perhaps he told me what he believed I wanted to hear, since throughout the interview he has said he does not like to get help from teachers or the Indigenous liaison teacher.

One of the most important reasons stated for not liking school is that his friends have left, (L494-500: *The students and the work like just it's just too boring because friends and that. There's not much people. Long time friends. And J-----... Best friend's gone*). Teachers are also an important element of

his school experience, (L535: *Friends... and good teachers*). His very first day at school was scary because he did not know anyone (L14). So despite saying that he is a loner, he needs the support of peers.

An additional reason for not liking school is that he does not like the new more rigidly enforced behaviour management rules (L41-46: *The rules, the uniform rules and the new rules that came out. The uniform and suspension straight away. For like um, like last time we had chances if we done something wrong, we had chances*). Perhaps he sees no tolerance in the school for issues that he has little control over, such as uniforms.

School has not been instrumental for informational support for his career; rather the relevant information was obtained from his mother's friends (L393).

Parenting focus

“In creating a coherent account of their experience, storytellers include evaluations or judgments that reveal the moral order of their social world.” (Tuffin, Morgan & Stephens, 2001, p.58)

Nathan's narrative in relation to his parenting is regressive, revealing a strong sense of indignation at his parents' separation, ((L 407: *They split up when I was in Year 4*) and (L410-412: *Yeah I remember it. (He felt) Very angry*), and his father's subsequent behaviour.

Because he feels that his father abandoned them he is not close to him (L360) and does not like him (L 367: *Cause he hasn't been with us since we were little kids*). He aligns himself with his mother in regard to the separation (L416: *Yeah, (They separated) because of my dad. He just wasn't like, didn't want to look after us and just wanted to have kids you didn't have to look after and he just left us*). There is a sense of being victimised and of abandonment that may be the explanation that Nathan gives to events or, in view of other comments, it may be the explanation offered by his mother for the parental split for e.g.,

L420-423: *One Christmas, last year, my dad, he sent us something and we received it. That's a positive. And now he sends the minors. And now he tries to get in contact, to get us money but my mum doesn't want us to talk to him. And I don't want to either, because I don't want anything to do with him anymore.*

I got the impression that Nathan may be under some pressure from his mother not to relate to his father. It is clear that his father's absence makes Nathan angry and that he was happy when his father showed an interest by sending them a present.

He is proud of his mother (L 437: *Proud about my mum, proud of the family*) and she is the most important person for him, (L 329), the one that he would go to if he had a problem (L331). However, they do not seem to spend time together or communicate much (L334). She did not help Nathan make his subject selection choices or discuss possible career choices with him. Instead, Nathan found out about plumbing by chance, through spending some time with his mother's friends and sort of drifted into making a career decision. (L 385- 393: *Yeah I've been with some plumbers. My mum's friend, he works in XXXXX um and I've helped him in trenching, doing a bit of plumbing, for a property in Black River*).

Nathan's style of attribution, that of victim lacking a sense of agency, may be related to his mother's attributional style as she appears to be the only significant adult in his life (Stark, Schmidt & Joiner 1996). Alternatively, it may stem from internal musing as a result of low levels of emotional support from adults.

Self-presentation

Nathan internalises, he copes by truanting and withdrawing. He says that he wants to be alone, that he likes being by himself at home tinkering with his bikes (L219-220: *Sometimes I like to see my friends. But you know I don't like talking to people that much, like being around noisy things. I don't like noise*). But, at the same time, he cites friends as being the reason that would make him come to school. On the one hand he says he does not like to talk, on the other he says he is always talking in class with his friends and that gets him into trouble with the teachers

L469-474: *I just talk too much and then I don't get through the work and then they ask me "have you done the work?" and I'll say I haven't done the work. And then they say "you're staying in" and so I stay in. I do it (talk) often because my friends. We just talk about one subject and we keep going.*

Furthermore, he says school is now boring because his best friends have gone. One may say that he appears to abrogate responsibility for his behaviour and feelings. Inconsistencies in his answers suggest that Nathan is a bit lost with regards to how he feels and who he is.

One thing that emerges consistently is his self-presentation as a victim- victim to circumstances or racism, or unfair treatment by his teachers, showing a lack of agency and responsibility for his actions. This comes through his explanation of why he talks in class (because of his friends), and the story of his suspension:

L65-81: *I didn't run into him, he said I knew where I was going to go, I was driving around the block, F Block, and then he come out and I tried to swerve and I hit him. But he jumped the same way that I swerved. He wanted to stop me from work. I got suspended that's why I haven't been the full week. I was going slow, at a slow pace, but he came out and I turned just to swerve him and he stepped in to stop me. Not fair, it was, like, an accident. But I didn't see... I seen him and I tried to swerve and he turned the same way as I was swerving.*

He wards off responsibility by claiming that it was an accident, the teacher did not believe him, and so on. He does not mention that it is explicitly against the school rules to ride around in the school grounds even though he later admits that if he had not hit the teacher he would not have been suspended (L85: *I probably would have got told to get off my bike and walk out of the school*).

He claims that he has been suspended for *making loud noises in the classroom* (L61) or *using coarse language*, (L108) but then excuses himself by laying responsibility on other students or the teachers:

L113-116: *Mainly the people that make noises on their own and the teachers because like, just um like the teachers I get, and I don't like, they don't do things in the classroom... You know. I can't do things in the class room and I get, you know, frustrated and start getting angry and I start doing stupid things, like yelling and stuff.*

It is not clear if this representation (of a victim?) is due to a perceived cultural victimisation. Although he cites experiences of racism (L269 and L278: *People when I'm walking or something, they swear at me*) he is not engaged or connected with the Indigenous liaison teacher nor does he specify that he would like an Indigenous tutor when I asked him (L554). On the other hand the friends he misses are all Indigenous boys (whom I have known through my teaching experience in the school).

There are complex issues at play in Nathan, issues of being unable to do his school work, perhaps through repeated absences, issues of an inability to relate effectively to adults and a sense of being victimised in the exosystem because of his colour. He has a low self-esteem, he does not have a sense of achievement about anything he has done while there are plenty of actions he is ashamed of, (L 430-433: *I don't feel proud about anything that I've done. Stuff ups, I've done a lot of stuff ups in my life. Ah bad things like you know stealing and stuff*). He appears not to have the inner resources to cope with school demands and perhaps he is somewhat depressed, because even when he refers to playing

football it is not described as fun (L449: *I just play because someone wants me there*). There are no references to sources of support. His outlook appears bleak, his body language during the interview, slumped, his head looking down, his voice low and flat, giving signs of dejection.

Future orientation

Nathan claims he knows school is necessary for his future prospects but is unhappy being there and although he wants to get a job he does not show any inclination to actively pursue his schooling to aid his future prospects. On several occasions he states he cannot cope and that, coupled with his intense dislike for school, seems to point to an inclination to drop out. He keeps looking backwards, happier times were those in the past not the present or the future.

Mesosystem connections

While there is positive encouragement from his mother to pursue his schooling, and she is also studying, it seems from Nathan's narrative that there is not much congruence between the two contexts of home and school in his mind. There are conflicting messages and he does not seem to pursue any activities that are paralleled in the two contexts, either in individual, such as reading, computer games, or even watching television or group activities, like organised sport. He prefers to be by himself, and does not work productively with others in his classes; rather they are often the cause of his misbehaviours (L 473-76). However, where he perceives a connection, this is recognised and he gains support by it as in the case of his subject choices when he chose HPE because (L23: *HPE because my brother teaches it (at another school?)*). Maybe Nathan needs a role model to identify with.

Exosystem connections

Nathan's connections with the exosystem are negative since he reports being subjected to fairly widespread racism (L286-287: *If I'm riding somewhere or just walking somewhere. Up to the shops. Someone will drive past yelling and stuff like that*). It is of interest that he does not report any racism at school. He does not have any views about issues outside his own immediate circumstances, either his own or reflected from his family, and states not having knowledge about the environment or politics, indicating a low level of individual or family awareness or involvement with such exosystem issues.

Summary

During the interview, Nathan's demeanour was subdued, his tone of voice flat and almost inaudible. Knowing Nathan for over two years, I could tell that this was not usual for him even though he is a relatively quiet person. A psychological evaluation of Nathan would be useful to determine if he is depressed or whether his outlook is related to unhappy school experiences, lack of success (L 115: *I can't do things in the class room and I get, you know, frustrated*) and continued poor outcomes resulting from long periods of truancy, or a lack of connecting friendships that provide him with the emotional support that he needs.

Nathan's survey results for the parenting dimensions of supervision and warmth indicate neglectful parenting. Research has demonstrated that neglected children/adolescents in comparison to physically abused children/adolescents have more severe academic deficits, social withdrawal and limited peer interactions, as well as internalising problems (Hildyard, & Wolfe, 2002). Nathan's narrative is not relational, his stories emphasise his wish to withdraw while at the same time he states a need for the support of his friends, confirming his social isolation. The high number of truanting instances that he reports perhaps point to an internalising profile. Hildyard and Wolfe (2002) found that the stories of neglected children tended to be preoccupied with negative relational dynamics, much like Nathan's narratives. Nathan's case illustrates the need to have longitudinal data in order to determine the onset of his disaffection with school. This case shows that unless school is aware of home circumstances it is not possible for extra support to be offered if, for example, there is a particular stressor acting upon a child, such as parental separation.

High self-handicapping strategies seem to link in with Nathan's tendency not to take on responsibility and lack of agency, and with research findings that neglected children have difficulties solving problems (Hildyard, & Wolfe, 2002). His survey results show he perceived a high level of opportunity offered by school which his statements do not negate, while teacher relationships according to his survey results were higher than average for students at-risk.¹⁵ He does not recall specific negative incidents with teachers, with explosive social interactions leading to teacher-student conflict, which suggests that the survey results are congruent with his interview narrative and with an internalising profile.

¹⁵ The survey was completed before his 5-day suspension for running into a teacher with his bicycle.

Another issue emerging from my knowledge of Nathan is that his learning style is probably very incongruent to the teaching style traditionally employed by teachers. When he was allowed to draw in science he was motivated and engaged as well as able to remember the content components of the lesson. Perhaps more importantly, he was more able to connect with the teacher, for as he stated, he would work for the teacher if he “liked them”. For Nathan a personal connection appears to be an important factor in enhancing his school experience.

5.4.2 Adam

Global Impression

Adam was one of my favourite Year 8 science students; a boy who was sensible in class, attentive and constantly helping his twin brother with his English. He was very keen on science and achieved an excellent grade in Year 8. I also taught him mathematics in Year 9 and while he evidently finds mathematics difficult and believes he is poor at it, he was achieving passes in my class.

Adam’s language is very clear and fluent, he rarely hesitates or pauses, the words that he uses are perhaps those that one might expect from an older, religious person (L306: *Well he was the kind of person if he didn’t get his own way he would get rebellious. He was still very immature*) and (L390-391: *It’s really all she has left from her younger years*) and (L618: *If the class was getting really rebellious and they started calling her names...*).

I found Adam’s narratives both absorbing and difficult to interpret, perhaps because of the familiarity between us, and my belief that he was a mature intelligent boy for his age. However, in reading and re-reading his interview transcript I found unexpected layers that I believe show an anxious teenager desperate to, and perhaps expected to, don a mantle of maturity

L542-547: I guess that’s really because I was the oldest one in the family back then and I guess naturally I tried to take on some of the... Really I just guess that I knew my mum needed extra support. When I was about seven I started getting really mature for my age, I’m just trying to say that when I was seven I was acting like I was 15. So I was quite mature back then.

and worldly knowledge

L396-401: *Well by the way the world is going at the moment, in about 20-30 years it's going to be a heap worse. It's going to be down to a point where we've got at the moment groups that go around and vandalise things, I believe in maybe in 30 or 40 years we might lead to the point where there are gang wars happening in small cities such as Townsville. We don't have a big problem with gang wars or that, cause we're quite a well-maintained city. In 30 or 40 years it'll be to the point where people are breaking up into teams and working against each other.*

He rationalises unhappy experiences

L24-28: *Well this man was talking about how our, because me and B-- we'd just come to the school and cause my mum had just gone through a break-up we were a little bit unstable, we couldn't really concentrate and that.*

and seeks support in a form of social capital¹⁶ in authority of an institution (church) (L729-730: *I also said that let's go to church Mum and I said it ever since I was four years old I always used to say let's go to church*) and (L707-709: *Going into a church was a great thing I did. Cause then I knew I could get a heap more support through there and I have*).

He relates experiences which show a high level of stress in his family life, (e.g., L312-313: *OK if I knock over a person's fishing rope would you expect them to hang you over the side of the boat and threaten you?*) though he constructs these as ordinary through his tone of voice and smiling demeanour. Nonetheless his descriptions, however played down, depict turbulent experiences both in terms of his father's behaviour

L958-964: *It was a good day, it was really good at the beginning and um I was outside and then I heard my mum crying, so I raced back inside. Nan was on the ground crying, my mum had a twisted ankle and um my father was outside and blew the car up. Rammed it straight into a tree! And it was a car my mum had paid for. Not the same car that was pushed off a cliff, basically a mountain.*

his grandfather's behaviour

¹⁶ The concept of social capital centers around the idea that our involvement in interlocking social relations has effects on the way that we behave which can be beneficial or not according to the company we keep (Caldas & Bankston, 2005).

L527-529: *His father never let him do schooling and that, and whenever someone came to talk to them about it, he would always tell his kids to go wait in the shed. And they would be out there for hours at a time*

and his mother's instability (L 706: *Well, my mum getting divorced, my mum breaking up ...*).

Two stabilizing influences are his grandparents, to whom he is very attached, and church (L707- 709). He not only takes an active role in church but also adopts an explanatory style based on religious language quite unlike many of his school peers (e.g., L192: *Although he was quite rebellious and even then he had tried smoking*).

A facet of his personality that emerged through his narratives is his pessimism (L436: *And he's (his grandfather) probably going to get skin cancer sooner or later*), and (L 683: *Well when they go out to find a job usually the person says no you don't have the proper...*). In response to a suggestion that a high level of motivation helps students achieve higher academic outcomes he replied "*See if they weren't forced they would probably enjoy life more*" (L688). He tends to absorb negative appraisals, internalising them in the construction of his self identity; has a strong wish to nurture others (L439: *I'm probably more protective of him than I am of my own mother*), and a penchant to live in his past, presenting regressive narratives throughout. The content of these narratives shows evidence of anxiety e.g.,

L42-45: *Well yeah, I used to enjoy it and I used to sit down and study. Now if I even attempt to study I sit down in front of a book and my mind just goes blank and I just start thinking back to when I was in earlier years in school when I could study and sit down and handle it. But now when I go to do it my mind blanks out and I can't concentrate enough to study.*

Despite these traits, his sense of humour elevates his commentary from what might otherwise be a rather bleak account e.g., (L941-943: *He had an argument with his mum, he walked out, he came back at midnight while everyone was asleep. So he slept outside with his dog Tippy. I said to his sister I feel sorry for Tips*) and (L716-719: *It (Church) drove down the road. The church was being moved from Mount Isa to here and we saw it drive down the road!*).

Adam's most striking characteristic, one that his mother has observed, is a tendency to empathise to an unhealthy degree, (L748: *My mum says that I take on their feeling and I get depressed through that*) perhaps as a result of significant adults confiding in him at an early age (L545-547) and assigning to him the role of counsellor; a role that he seems to have adopted willingly as is shown by the stories he

tells about significant others and peers. In this regard his role is similar to the role that I played in my childhood with my mother, and perhaps this gave me additional rapport with this student (Glesne & Peshkin, 1992).

School focus

School and teachers have failed him, (L744-746: *A load of disappointing things have come through school actually I found a lot of disappointing things where teachers have said things even on report cards and progress reports that have even upset me*). He has always despised school (L40: *In youthful words I despised going to school. They were the same words I used back then*) and would not seek teachers' help, (L268-269: *No because I talked to her (the guidance councillor) in Year 8 about me being bullied and cause I got post traumatic stress disorder I get very emotional when I get stressed out and I can go into serious depressions*).

His home and his school appear to be perpetually at loggerheads not due to his behaviour but rather because of his family's actions:

L33-36: *Well really my part was to, I was the delivery boy. I was taking all the notes for Nana and he (the teacher) ended up saying offensive things in class about me and B-- and I had to notify higher people in the school or take that home. And um he ended up doing something really horrible in the end and got fired.*

He sees school as a challenging context where he must somehow defend his position again and again e.g.,

L15-18: *Well. The first really good thing that happened to me would have been about Year 5. Was um, I had a fight with my teacher it was my first proper one on one argument with a teacher, it was a good and bad thing really and um that teacher ended up in quite a lot of trouble about what they had said.*

and (L61-72: *Hmm my most recent horrible experience would have been Mister G----. Well he said Christianity was a load of bullshit. Well...*) Adam's mother encourages this constant battle (L101-104: *I talked to Mum about it and she was very upset and she went straight to Mrs N--- who we know out of the school as well, and we knew that she could trust her to do something about it*) and

L114-118: *So he (Mr G---) kind of dug his own grave and then he said something about students who are stupid and he looked straight at me. So my mum straight away got straight down on him and said why did you look at my son when you said that?*

Adam has ambivalent feelings even about teachers he apparently liked,

L618-620: *Well really she was a great teacher. She was also extremely emotional. But then sometimes she got anger built up inside her. After things like that had happened and she would say things and they were usually disrespectful. And I believe that's what happened with me.*

It seems that he uses other people's explanatory style or perhaps church's teachings, to make sense of his experiences (e.g., L624-625: *You see when people say things and they might not even really mean it, they can still affect you for life*).

It is with reluctance that he admits that there are positive aspects to his school

L887-895: *Oh well I have access to computers. And I really do enjoy fiddling around with computers and Mr D----- works with the computers and that in his spare time. Sometimes I have the opportunity to come in and work with him on them. So that's something I really enjoy doing.*

H: That's right I've seen you do that. And there's the chess club of course.

I: *Yes that is another thing I do enjoy. The other thing I enjoy is knowing I can beat Mr G---- one third of the time.*

except when he positions himself as an older person looking back

L902-905: *Well I do think that school is the most important thing that anyone can ever do. I do believe that everyone should have a chance to go through schooling. If it's not their thing they should still attempt to stick through for the rest of the school life. And then I believe that when you get out into the workforce that it helps more than you would believe when you're in school itself.*

It is almost as if there are two Adams, one, a child, living in the unhappy past and the other adopting an older, wiser persona.

Unlike the typical and resilient students interviewed, he is highly influenced by the personality of his teachers and chooses subjects based on the rapport he has with a teacher (L201-202: *They're excellent teachers, that's probably the reason I chose to do that subject, is because I knew I could relate with the teachers very well*) and (L218-219: *I ended up changing out of Indonesian last year and that's because of the teacher*). There is a need for meaningful, stable relationships, (perhaps lacking in the home environment?) whereas in the narratives of the typical and resilient students such relationships are not highlighted.

Parenting focus

Adam's relationship with his father failed when his father remarried, (L489: *Well good until he got married*). Adam is close to his mother and his twin brother, (L358: *Yes I am. Although I hate to say it I am very close to him* (his twin brother)). But it is his grandmother that he trusts for sound advice and support (L373-375: *No, if I really want to get something done in my homework I usually go downstairs and ask my grandma for help. Cause she's got quite a lot more knowledge than my mum*).

He does not appear to spend much time with his mother except in the context of church

L444-452: *Well we hardly ever get time to spend time as a family. Because my mum's got a- she's doing a lot. She's just recently become a Teacher's Aide. This is something I do with my mum. We work the Sunday school.*

From what Adam says, it appears that she did not offer much career guidance support as he chose his subjects, obtaining information for his future career from various teachers.

Adam reports arguing with his mother (L348: *we have a few fights around that subject* (studying). *Into quite a few arguments!*) and that she has given up on checking his school work (L371). He puts arguing down to being too much like her (L473-474: *Cause my grandma always says that me and my mum are so alike that all we do everyday is fight*) showing that he perhaps identifies with his mother but also that he takes on other people's evaluations in the construction of his identity.

There is evidence of encouragement to study from home but this is not coupled with activities that are congruent with studying, such as reading. There are however, many church based activities involving rules and precepts guiding and explaining human behaviour, which Adam has adopted and uses freely to make meaning of his experiences. Themes like rebellion (against a higher authority?) frequently appear in his narratives.

Self-presentation

Adam removes himself from the group to which he belongs, (L917-918: *Because when you reach teenage years, kids prefer to hide their feelings than to show them*) speaking instead as an outsider, sometimes emulating the role of a Sunday school teacher, (L447: *We work the Sunday school*) using words borrowed from a religious context (L507: *So in truth I've got three brothers and two sisters*).

Adam reports being bullied his whole life (L898-899: *Well I'm very good at ignoring people, and their comment; because I was bullied my whole life, I'm getting very good at that*) and his narrative has

many elements of a victim positioning (L312-315), and (L273: *I was being bullied and I got into serious depressions cause I get stressed out*). As a consequence, he does not have a great deal of agency except in the context of church (L450: *I'm working my way up to that (being a Sunday school teacher)*)).

Adam's sense of identity shows strong influences of the social contexts he occupies, home, church and school. His school persona (L153: *I did my first maths problem, I was hopeless at it*) and (L592: *And the teacher came up to me one day and said that I was hopeless (at mathematics). That threw me off and I've never been able to do it*) and (L615, *Well besides that I can't study*) is lacking the confidence of his church persona (L447). The church seems to be inextricably linked to the home environment so it is difficult to separate the two. The home context is differentiated by Adam's descriptions of issues arising from his mother's relationships. These have an impact on Adam that he has come to recognise (L706: *Well my mum getting divorced, my mum breaking up. Me trying to get out of that effect was probably a positive thing, me trying to, well, is probably a good thing that I did*). A pattern of anxiety emerges from his self-description (e.g., L214-216: *I can remember things. I have a great memory when it comes to long term things but short term things up to about a year or so, my mind goes a bit fuzzy on*).

On the whole, I felt that Adam is not clear about who he is, in comparison to the narratives of Alex, Tess and Kim, because much of what he claims about himself seems to be an unprocessed reflection of other people's appraisals (L748-750) or his identification with his mother and her suffering. This is an interpretation that I make based on the words Adam uses, words that perhaps he has heard his mother use (bold italics)

L826-825: *Well really what's important me is seeing that other people don't end up how I was treated during life. Well I was in my younger years **I was really rated inferior from my father's point of view and that. Yeah, he made me feel inferior. The way he acted was completely obnoxious. He was completely disrespectful.** And he used to beat up my mother. So that's something that I don't want other kids to go through.*

There is awareness that people are perhaps unconsciously moulding him in certain ways because he says he wants to be separate

L793-799: *I think that I'm really separate from everyone else. And I like to keep that idea, I try to make myself feel like that, I am the only person in the world like me. Because I don't want to be like anyone else.*

He does not talk of hobbies or favourite pastimes, and friends, although he says they understand him better than his mother, (L 473: *Well knowing that they understand me probably better than my mum*) he sees as needing his emotional support

L918-925: *So really I believe like J----- I know he can become extremely emotional although people would not notice it. If you actually talk to him a bit and that and you look at the other side of him. He's actually a very good person. Like M--- and R--, they can get quite distressing to be around and they're quite rebellious half the time. But if you can actually relate to them even the slightest bit, you can see that also they're very emotional people.*

Friendship connections are cemented in emotional terms, (L746-748: *Is when I've got a friend and that and they need a bit of emotional support and I help them out a bit. Cause you know I don't want people to get really upset. So I help them out a bit*) rather than fun times, (L952: *What am I doing? I walk around and talk to people*) which was how some of the other students interviewed explained their attachment to their friends.

Perhaps Adam has a need to relate at a deeper level as emotions loom large in his life. The essential Adam, whoever that may be, is submerged under a well of emotions that occupy his stores of memories, sense of identity and sense of future (L283: *And that really set off my emotions, and I couldn't exactly control my emotions at that time.*). He is a repository of adult conversations (bold italics), (e.g., L171: *My mum had just had a big argument **with the only man that she had ever loved in her life***) and (L273-278: *I was being bullied and I got into serious depressions cause I get stressed out. **What it is, is stuff from the past can come up and affect you in the present,** for example when I was in my primary school years I used to get bullied a lot*) which he can't really comprehend fully as he does not know what causes the stress,

L286-294: *No. Well really it was after Mum's second break up with her boyfriend. And now my mum hates men so she's never going to get together with anyone again.*

H: But, how, why, did that affect you so much?

I: *um well... Well everyone in my family was diagnosed with it. And apparently B---s (his twin brother) grown out of it, my mum's still got it and so do I. We're all.... and my granddad, he went to a war so, he went to Vietnam, he's got a reason for it.*

and only repeats what he has been told,

L175-178: *So my mum did have a previous divorce to that and I didn't think that really ever affected me cause I was so young I didn't really notice.*

H: So this is your own Dad?

A: *yes but I understand now that it did affect me more that I showed back then.*

So he projects an image of a person older than his years but is not really strong enough to deal with this responsibility because at the same time he is seeking attention and sympathy by mentioning his post traumatic stress, his memory problems and his inability to study. The narrative concurs with Adam's survey results which suggest that he has little parental warmth and involvement and high levels of strictness and supervision

L382-389: *Yeah, but I don't really go out with friends, and the only times that I ever want to go out with a friend, is usually to go over their place and maybe then well go from there to some other place.*

H: Yeah, so are you allowed to do that?

A: *Well hardly ever.*

H: Why is that?

A: *Well, I'm not sure. Well I guess it's because my mum's now very protective.*

Future orientation

Adam probably knows that he has a tendency to dwell on the past, (L258-259: *Well at the moment I'm trying to keep a mature mind and trying to think of the future and of the present so I don't...*) so he makes an effort to focus on his future options. His priority is to start a family of his own, (L558, *Well I definitely want to start a family*), career plans taking second place (L569: *I want to probably want to get into marine biology or some area in horticulture*). In his desire to start a family he shows his unusually mature orientation, somewhat akin to Alex's. This desire, in conjunction with everything else he has said, perhaps demonstrates the need to capture something that he has missed: a stable family.

Mesosystem connections

Adam participates in at least three microsystems, home, school and church, each having an impact upon his development. He sees peers as less significant (L259: *... I'm not a very social person*). There seems to be a clash of values between the home and school environments which perhaps causes Adam to be in conflict with his teachers. There are many reported instances of his mother visiting school, and I, as his science and form teacher, have had first-hand experience of this. It seemed to me then and now that his mother was particularly keen to support Adam to succeed at school. Since

Adam's behaviour has always been exemplary in my class I assume he has internalized the teachings of obedience and compliance from home, school and perhaps church. Clearly, however, there are issues connected with his personality and the way that he constructs himself as a student that prevent him from realizing his potential. Perhaps the level of anxiety that he experiences is a factor in this.

Exosystem connections

Adam has definite views about the environment but these are coloured by a pessimistic, almost Doomsday, outlook

L418-424: Again to notice big problems that we've been making. We've made what 3 or 4 salt areas at the moment. In the last ten years we've created huge amounts of waste and were beginning to destroy the world through that. So if we don't end up getting to the gang wars were going to kill ourselves now.

His evident interest in science is tinged with perhaps what might best be described as a biblical discourse. He wants to have a role in rectifying these issues, showing agency. Again, the dominant influence underscoring his thinking appears to me to have religion as its source, with apocalyptic undertones (L396-401).

Summary

Adam's account gives glimpses of an adolescent who is assuming a role of someone older than his age, carrying many past traumas. He oscillates between seeking sympathy as a victim and being a censor by turns. A sensitive, obviously vulnerable boy, he seems very susceptible to teacher and other adult evaluations; these he internalises resulting in a lack of self-confidence and agency in the school context. His story supports research which has shown that teachers have a major impact upon their students' outcomes (Hattie, 2003; Wentzel, 2002). Adam's survey results show that he has the lowest teacher relationships of the six case studies, lower even than Nathan who is quite disengaged from school. Moreover, his perception of school opportunities is exceptionally low, even for someone who is in the student at-risk group, showing that he questions his school experience.

Overarching his views is his sense of pessimism, the lowest of the case studies and substantially lower than the student at-risk mean. Certainly maternal overprotection which Adam reports (L389) and which is evident in his survey results conveys to the child the presence of continual threat and danger, restricts the child's opportunities to develop successful coping strategies and may limit the

development of more optimistic and realistic cognitive appraisals of the world (Hudson & Rapee, 2001; Rapee, 1997).

It would be useful to conduct longitudinal research into the effects of home and school contexts upon optimism, to discern whether dispositional optimism precedes home/school attributions or is the result of particular microsystem experiences. Findings from the quantitative phase of the present study show links between optimism and the home and school contexts however since it is cross-sectional it is difficult to make any judgements as to the directions of influence.

5.5 Discussion

5.5.1 Do these interviews support Bronfenbrenner's theory?

Bronfenbrenner operationalises human development by referring to “the ecology of human development” (p.21, Bronfenbrenner, 1979). He elaborates:

First, the developing person is viewed not merely as a *tubula rasa* on which the environment makes its impact, but as a growing, dynamic entity that progressively moves into and restructures the milieu in which it resides. Second, since the environment also exerts its influence, requiring a process of mutual accommodation, the interaction between person and environment is viewed as two-directional, that is, characterised by *reciprocity*. Third, the environment defined as relevant to developmental processes is not limited to a single, immediate setting but is extended to incorporate interconnections between such settings, as well as external influences emanating from the larger surroundings. (pp. 21-22)

In other words, a human being is not only influenced by their environment but they, in turn, actively mould their environment. Moreover, since environment does not merely mean the inanimate environment but also the social milieu, moulding involves reciprocal processes between the developing person and others. Superimposed on these interactions are effects borne by the larger social and physical setting characteristics of the place where development occurs. Others echo his views: “Understandings about reality and one's place in it are woven from a rich fabric of social interactions, including contact with older generations in family and community, as well as with one's peers” (Wienrenga, 1999, p.189).

The interviews described here are by necessity one-sided, involving the perspective of the student and the interaction each student had during the interview with me as researcher and collaborator in the construction of meaning systems. In using Bronfenbrenner's definitions as a guiding framework for

this research I am particularly conscious of important data that is missing. Data related to the interactions between each student and their environment, shaping and influencing other people's reactions and setting up a ripple effect moulding and reshaping developmental instances and situations. Another problem inherent to any interview narratives is that there may be a gap between beliefs and actions and between what people say and what they actually do (Gilbert & Mulkay, 1984). Moreover, there is the problematic assumption of "a stable context or reality to which participants respond" (Silverman, 2004, p.360). What someone says today is apt to be modified by subsequent experiences and not be accurate in light of those experiences at a later date.

Any interpretations that I make, any inferences, are perforce based on a snapshot of an incomplete picture of the world that each student inhabits and interacts with. A picture, moreover, taken on a *single* occasion. Given this restricted vantage point, and bearing in mind the aforementioned subjectivities and experiences that shape my perspective, qualifications that I propose are as stable as I can possibly manage, the inferences that I make in constructing each student's story may resonate with the reader or may not. My position as a non-Indigenous person, in particular, may reflect certain assumptions that an insider, an Indigenous person, would be more cognisant of. Perhaps the stories of these interviews will be more meaningful if read in relation to one another; in juxtaposition similarities and differences between the students become more apparent as a function of their grouping. I use comparisons between students when making interpretations.

The process I adopted in analysing the transcripts took a long time to complete. It began by listening to each taped interview, noting the tenor of the interview both immediately after the interview was conducted and later, upon revisiting the recording while reading the transcripts. As I read through the interview transcripts I colour-coded all references pertaining to each area of interest, that is, school, home, peers, future goals, construction of identity, issues connected with the exosystem and processes referring to connections between the contexts (Glesne & Peshkin, 1992). This was done in order to give me an idea of the extent and level of importance that each context assumed for the participant and to extract from the narratives illuminating and weighty remarks for inclusion in the chapter (Reissman, 1993; 2004). At the same time, each reading was examined from the point of view of how the students told their story, thus both thematic and structural analysis was involved (Reissman, 2004; Murray, 2003). And in arriving at some interpretations I adopted the approach advocated by Lieblich, Tuval-Mashiach, and Zilber (1998) whereby I looked for similarities and differences in and between the three groups of students. In other words, I was trying to develop: "naturalistic generalisations from

analysing the data, generalisations that people can learn from the case either for themselves or for applying it to a population of cases” (Creswell, 1998, p.154).

Many months after the initial analysis of the interview narratives, ideas resonating with the narratives would present themselves leading to a revision of particular segments of interpretations. Triangulated findings also played an important role in the interpretive phase, since I had access to the students’ survey results to affirm my hunches. As Glesne and Peshkin (1992) argue with regard to triangulation of interview findings with survey data: “Without such tactics, it is sometimes difficult to know how much of what researchers see is a product of their earnest but unconscious wish to see it so” (p.147). Finally, as a qualitative researcher I am also a story teller in so far as I construct and re-tell each student’s story through my analytic re-description (Mischler, 1995; Glesne & Peshkin 1992). However, this re-telling is left open to scrutiny since the verbatim interview transcripts are available for inspection in the CD accompanying this thesis.

In analysing these narratives I focused upon the school and home microsystems, their interconnections, the mesosystem, and exosystem connections. The reason for this was to examine whether Bronfenbrenner’s theory could be fleshed out and illustrated with actual student views; whether his theory that if congruence is perceived in the aims and processes occurring in the home and school reinforcement of the (academic) socialisation of children occurs, could be discerned in the stories of the students.

Since all the students interviewed attended the same school it was assumed that experiences in school processes and culture might be somewhat similar for all six students. Therefore their reactions to school may be slightly more likely to be linked to attitudes imported into school from various sources or conceptions. Ecological models, such as Bronfenbrenner’s, locate the individual within a broader context that includes family and peers settings, involvement with organisations such as the church and school, and macro influences such as societal norms and values. The discourse on racial identity often ignores the importance of contextual information; notably the racial composition of the school. Sellers (1993) notes that “a strong racial identity may be associated with more positive psychological outcomes in certain situations and that in other situations such a strong identity may be a lightning rod for psychological distress” (p.331). In this respect it was interesting to note the views that the three Indigenous students had with respect to racism, since the school they attend has the highest percentage of Indigenous students in the city. While racism continues to be a stressor affecting outcomes across

economic groups (College Board, 1999), culture seems to influence how young people understand and cope with it.

Nathan, a student at-risk, reported being troubled by racism, though this did not appear to emanate from his school experience. His narrative used a discourse of Indigenous victimhood, perhaps subconsciously as a means of ‘political gain’: a means to excite sympathy from me? Other Indigenous people have in the past successfully used this discourse to attract resources and negotiate rights (Palmer, 1999). Qualitative research exploring Indigenous students’ responses to education has documented that Indigenous people often used war imagery, a never ending fight against ‘the system’, or a feeling that the people had been beaten and browed, to describe their relationship with mainstream society (Munns & Mc Fadden, 2000). This imagery however, may have different ramifications for different individuals. The two resilient students reacted to racism in a different way.

Tess, used the experience of racism, which was experienced out of school but may have been felt at school as well, as a motivating influence to propel her into a career that would help redress the balance, as she saw it. Kim had a different attitude to racism; perhaps he looked upon it more pragmatically, neither fearing it nor being angered by it. Coping with racism in the way Kim reports he does, has been identified as a protective factor (Kitano & Lewis, 2005), while social connectivity, that is, social ties, connection to and support for community, and a high cultural identity, attributes that Tess displays, have been linked with resilience in people of colour (Kitano & Lewis, 2005). Strategies employed by Kim include distancing, self-controlling, and positive reappraisal (creating positive meaning by reframing, as a person who is philosophical about this issue). The qualitative data of this study substantiate assertions by other researchers (e.g., Waxman, Gray, & Padron, 2003) that resilient individuals interpret life stressors and trauma differently from non-resilient individuals¹⁷.

The existence of racism in the school was corroborated indirectly by Chris’s comments; he showed that he felt alienated from the Indigenous students and would rather they were not there. Adam mentioned the existence of racism in society (and school?) in the context of agency, taking a pessimistic view of the story I told him about Asian students’ perseverance and tenacity to succeed in school.

¹⁷ In discussing the narratives of the Indigenous students with an Indigenous lecturer, I discovered that he had encountered instances of racism within schools, racism articulated by teachers about Indigenous students and their cultural norms in front of him. He also talked about experiences with Indigenous students who had adopted attitudes to racism that reflected my findings. He said he was interested to hear that Indigenous students’ coping strategies to racism mirrored those used by African Americans.

An interesting difference between Kim and Nathan was Kim's acceptance of the dominant white culture and his emphatic rejection of aspects of Indigenous culture, shown by a number of comments that he made during the course of the interview (e.g., L484). Prior research has identified this acceptance of the dominant culture as a factor supporting enhanced school success (Ogbu, 1989; 1992). At the same time, a positive self-identity as a student, an attribute that both Kim and Tess appear to project, has been linked to school success in Indigenous students (Purdie, Tripcony, Boulton-Lewis, Fanshawe & Gunstone, 2000). This positive self-identity for Indigenous students was found to be developed by the attitudes and behaviour of significant others, particularly parents and grandparents (Purdie et al. 2000). In Tess's narrative, her grandmother and mother take on particularly influential roles albeit in slightly different spheres. Similarly, despite several difficulties experienced in his relationship with his mother, Kim indicates several times that his mother (and foster mother) praised him and had high expectations for him. By contrast, Nathan's narrative cites no influences from significant others except a stated expectation that he would remain at school to Year 12. This was however, ambivalent as he was also expected to get a job.

Within each of the three groups of students views of schooling were shared. Typical students, Chris and Alex, had strongly positive school experiences as did the resilient students, Tess and Kim. Alex articulated views about pro-social behaviours (L41-42) and his belief that such behaviours elicit positive reinforcement from teachers. He implied that these in turn fosters academic achievement and bonding with the school, a notion that has been validated by research (Welsh, Parke, Widaman, & O'Neil, 2001). Both Adam and Nathan, the two students at-risk, had negative school experiences. These ranged from implied slights in the case of Adam to disengagement and withdrawal by Nathan. There were nuances of difference connected with each student within each group but overall, students at-risk were unhappy at school while the others wanted to be at school for at least as long as it served their career aims. Nathan's admitted truancy is perhaps typical of students at-risk (Waxman, Gray & Padron, 2003). The role of teachers emerged as an important one in relation to student affect. Positive teacher relationships were cited as instrumental to a more positive school experience by Chris, Nathan, Alex, and Adam. Perhaps teachers act as a protective factor against dropping out of school, since teachers are able to mentor students at risk of failure. Adam's narratives suggest this.

Parenting factors were more diverse; these may be related to family structure as much as to family processes since the two typical students live with both biological parents while the others live with either one parent, the mother, or in foster care. Family background is widely recognised as the single most important contributor to success in school with socioeconomic status, measured by parental

education and income, and family structure, being independently and strongly implicated in student success (Rumberger, 2001). Parental education could be another factor influencing family processes, and again parental education was highest in the homes of the two typical students. In relating mesosystem effects between home and school, both typical students reported evidence suggesting strong mesosystem effects either in parental involvement with school or family processes in the home that are congruent with school practices. These data are in line with prior empirical studies which have found that students whose parents monitor and regulate their activities, provide emotional support, encourage independent decision-making and are generally more involved in their schooling are likely to have higher levels of school engagement and as a consequence academic success (Desforges & Abouchar, 2003).

Likewise, features of the environment that promote resilience include effective parenting or a strong, trusting relationship with a competent, caring adult (Osofsky & Thompson, 2000) and opportunities to exercise responsibility, make decisions, and learn from mistakes and successes (Rutter, 2000). The resilient students' narratives illustrate previous findings. Tess talks of a strong relationship with her grandmother, and, despite the turbulence of his relationship with his mother, Kim alludes to strong decision making and self-reliance presumably honed partly as a result of his experiences while in her care. Alternatively, a lack of coaches, mentors or translators, people who provide consistent sources of ideas and interpretations about the world, helping to define the developing person in their own eyes may result in a slanted or limited view of the self and its capabilities (Wierenga, 1999). A lack of significant other's input or a slanted input by significant other(s) may result in a retreating adolescent like Nathan or Adam, retreaters in different ways. Nathan is not thinking in terms of goals and aims but rather in terms of avoiding risk, staying safe and the only place where he is safe is in his own company. Silence is his way of avoiding risk but it is also what exposes him to risk, because he does not seek the help and communion with people that would assist his affective and cognitive processing and enrich his experiences. Adam retreats to the auspices of church, a place he has nominated as a safe haven.

Future orientation did not discriminate students since all professed goals and career aspirations to a degree. According to Tiet et al. (1998), high educational aspirations always have a beneficial consequence irrespective of risk level, and resilient students have been found to have higher achievement motivation than students at-risk (Waxman & Huang, 1996). Those students who professed the highest aspirations were the two typical students and the two resilient students, those also having the highest grades.

Their apparent sense of agency or self-direction with regard to the future and the past did distinguish student groups. Nathan and Adam, both students at-risk, used regressive narratives to project considerably less agency and self-actualisation goals than the other students. They positioned themselves as victims in relation to events they reported. Interestingly, they also reported the least well developed relationships with peers, though each account was to some extent ambivalent. Nathan says he wants to be alone, yet longs for the return of his best friends; Adam says he is not a very social person but at the same time reports giving emotional support to his friends. Nathan says he withdraws yet reports talking when he is with his friends at school, while Adam emphasises the investment of social capital in the church for support. By contrast, the two resilient students seem to have many social contacts, their narratives characterised by relational aspects. The relational aspect of the narratives is also evident in the typical students' narratives.

Protective factors such as positive coping strategies exert a buffering effect at high risk (Tieg et al., 1998). In this regard, comparing Nathan's emphasised protestations of not coping, with Alex's reassurances that he can cope with his academic work illustrates the role of coping strategies. A comparison of the positive coping scores of the students shows clear patterns substantiating their grouping and supporting previous findings (e.g., Dumont & Provost, 1999).

In summary, the interview narratives appear to support Bronfenbrenner's theory that there are strong influences arising from microsystem contexts. When references to these contexts are negative students appear to experience difficulties. Moreover, influences from one microsystem appear to cross to other microsystems, in both positive and negative ways. Using this framework enables a conceptualisation of the various spheres of influence that impinge upon an adolescent. Moreover, the narratives of the students suggest ways that particular contexts help shape student views, academic socialisation and explanations about their experiences.

A summary of the contents of all previous chapters and a discussion of the implications of the research is presented in Chapter Six. The chapter includes an outline of the limitations of the research and recommendations for practitioners and future research.

Chapter Six: Summary, Implications and Recommendations

Not everything that can be counted counts and not everything that counts can be counted.

Albert Einstein (attributed)

The purpose of this chapter is to provide an overview of the thesis, to report major findings and their implications, propose future research possibilities and to acknowledge the limitations of the research.

6.1 Overview

Chapter One outlined the issues of concern to this research, namely the occurrence of a proportion of students who leave full time education with few or inadequate qualifications and as such are predicted to face economic, social and personal problems stemming from their employment prospects. The identification of resilient students within the cohort of students predicted to be at risk of dropping out of school gave rise to questions examined in the study. This is because it is assumed that they overcome the disadvantages of certain socio-demographic factors associated with dropping out of school. They provide evidence that personal characteristics can be stronger and more influential than the socio-political fabric of the society in which they are born. The overarching framework best suited to study the at-risk trajectory was deemed to be Bronfenbrenner's theory of development because it permits the simultaneous examination of more than one sphere of influence interacting with the developing adolescent. Moreover, this theoretical lens incorporates both sociological and psychological variables considered to be of importance in the at-risk trajectory. Most importantly the emergence of resilience is able to be rationalised within this framework.

The literature review, Chapter Two, delineated the scope of the study by presenting prior research in spheres most proximal to the development of academic resilience, the home and the school. Additionally, the survey of the literature exposed the variables deemed most appropriate for study in conjunction with academic risk and resilience and the study's comparative design based on Bronfenbrenner's postulates and guidelines. The formulations of the specific research questions were refined as a consequence of the review.

Methodological issues were addressed in Chapter Three. The nature of the research questions dictated the methods best suited to answer them. In this case, mixed methods were adopted as the best methodological approach, underpinned by the epistemological position of pragmatism which is considered by theorists (e.g., Cresswell, 2003) to be most congruent with mixed methods.

Quantitative analyses and results were the subject of Chapter Four. Here the statistical analyses were described, culminating in a summary that tied all statistical findings into a structural equation model. The model proposed was based on theoretical considerations. It shows a possible and significant pathway operating as a conduit for the influence of socio-demographic variables via parenting and school perceptions, translated into motivational and coping strategies that bear upon academic achievement.

Finer grained insight into the particular worlds of six selected students was obtained from the qualitative phase of the study, Chapter Five. The findings of the statistical analyses were connected to the qualitative phase as they were used to identify the participants. Each student's narrative and story transformed the 'sketch' provided by the quantitative findings into a distinct individual profile whose contextual anchor was one of the reasons that the qualitative phase of the study was undertaken. Candid descriptions of their life provided by each student gave additional insights and a fleshing out of the microcosms they inhabit.

In Chapter Six the quantitative and qualitative phases of the study are brought together and discussed, and the main findings of the research are summarised. The chapter concludes with recommendations for practice, some possible areas for future study and the limitations of the research.

6.2 Discussion and main findings

6.2.1 Discussion

A distinctive feature of this study is its use of Bronfenbrenner's theory as an underpinning theoretical lens for interpretation. Flowing from this choice of theoretical perspective was the design of a comparison study employing mixed methods to examine student home and school perceptions, motivations and coping strategies.

Bronfenbrenner (1979) postulated that development and academic socialisation is a complex process involving various contextual effects and mechanisms, drawing social influences into the developing person through their effect on psychological perceptions and constructs. Moreover, the developing person is an active participant in the developmental process, moulding and being moulded by the environment that he/she inhabits. Another important feature of Bronfenbrenner's theory is the proposal that when processes in two or more contexts of development, such as the home and the school, emphasise the same ideas and values the resulting reinforcement of those ideas and values is more likely to produce the expected outcomes. In relation to academic socialisation, the concern of

this research, processes in the home such as reading, problem solving, elaborated discussions and an emphasis on learning are likely to enhance academic outcomes because these same sorts of activities are typically employed in schools. Bronfenbrenner termed this mesosystem effects.

The study design was therefore created in a way that was thought most likely to expose the aforementioned mesosystem effects, show the contextual nuances due to the different socio-economic niches that students occupy and due to the reciprocal nature of developmental processes.

A comparative study promised to fulfil these expectations if taken into account were such measures as SES, parenting and school perceptions, features of the micro and meso systems, and motivational, coping and expectancy measures, representing the results of the internal processing and reciprocal interactions between the developing person and their environment. The choice of a mixed method approach was determined by three reasons. First, I wanted to test the significance of SES, parenting and home perceptions, and the significance of motivational and coping strategies in predicting academic outcomes. Second, I was interested in the possible pathways that these influences may take, and their significance. Third, I wanted to look at a range of processes, mechanisms and responses to contextual influences that students might report, so interview data were sought to tease out, corroborate, refute, or augment findings from the survey (Hanson, Creswell, Plano-Clark, Petska, & Creswell, 2005). This approach is consistent with that advocated by mixed method theorists and practitioners (e.g., Hanson et al., 2005, Tashakkori & Teddlie, 1998).

Given the overarching bioecological theory's propositions and the assumed flow of socialising influences, resilience in response to a risk environment was of particular interest in this study. This is because, as Ragin (1987) argued, it is by contrasting and comparing a phenomenon to its logical obverse that the phenomenon may be better understood. In this case resilience, emanating from a risk environment, was the logical obverse of the at-risk trajectory. Werner (2000) pointed out the concept of resilience and protective factors are the obverse of vulnerability and risk factors. Two sets of protective actors have been identified, social resources and personal resources (Rutter, Giller, & Hagell, 1998). The qualitative phase was intended to reveal some of the social resources that might act as protective factors and the way these social resources are employed or manifest themselves, both difficult to obtain from a survey alone. Moreover, the concepts of mastery and coping while able to be accessed by survey data, are also prominent in the responses of individuals to particular real life scenarios showing the participants' capacity to cope with challenges and setbacks as well as their orientation to learning and education.

Through the qualitative phase of the study I was able to infer where and how these strategies were applied by the students from each of three groups or, conversely, whether they were absent from their repertoire. Participant expectancy orientation was also revealed through their responses to scenarios which might be considered more accurate of their usual perspective than simply an answer to a survey question. In a survey they may be providing a calculated guess as an answer in the absence of a real-life scenario. In other words, not only did the qualitative data elucidate and illustrate the concepts measured in by the survey but also triangulated and corroborated the quantitative findings.

Hanson et al. (2005) argue that in a study of a sequential explanatory design such as the present one, quantitative data are collected and analysed first, followed by qualitative data. Qualitative data are then used primarily to augment quantitative data. Data analysis is usually connected; this might be achieved through the analysis of the survey data, creating a categorical variable that helps explain the outcome variance, and conducting follow-up interviews with individuals who were representative of each of the categories. This was precisely what was done here. Hanson et al., (2005) maintain, integration usually occurs at the data interpretation stage and in the discussion. A mixed methods researcher could, alternately, analyse the quantitative and qualitative data separately and then compare and contrast the two sets of results in the discussion.

Both of these suggested approaches are adopted: in summarising the qualitative data in Chapter Five, I drew upon the survey results, integrating the two analytic phases; the current discussion compares and contrasts the nature of the findings. The findings were complementary, qualitative data augmenting and, equally important in view of the theoretical lens employed, contextualising student responses. No unexpected or contradictory issues were reported by students. The emergent themes that arose from the qualitative data, unanticipated by the quantitative phase, namely the issues of racism, teaching strategies and perceived structures, are also able to be incorporated into the scope of the study and interpreted through Bronfenbrenner's theoretical lens.

Racism is conceived as a stressor and the reaction to it as a type of coping strategy. According to Bronfenbrenner's theory racism can arise in any of the overlapping ecosystems impacting upon the developing person. The interpretation of racist scenarios by the individual is likely to be dependent upon their various prior experiences and interactions with others, shaping their vulnerability. There was a sharp contrast shown between the resilient students' reactions to racism and that of the student at-risk. This contrast was based on the meaning of racism they constructed and their coping

mechanisms, i.e., on the reciprocal interaction between each student and the stressor. The processes that each student employed to ascribe meaning to the experience of racism were individual and distinct, a result of the way they rationalised, or as in the case of the student at-risk, did not rationalise, the stressor. Prior experiences and their interpretive style were major influences upon this process. Perhaps also, the interpretations of significant others played a role in their rationalisations though the interview narratives did not make this clear.

The teaching strategies theme appeared in one of the student's at-risk account. An explanation consistent with Bronfenbrenner's theory might be that he had not been sufficiently exposed to the more traditional modes of teaching in his other microsystem contexts, or that alternative teaching strategies were the ones that he was most familiar with. By contrast the resilient and typical students' narratives suggested that more traditional modes of learning were adequate or appropriate for them. Either explanation is therefore equally possible.

Lastly, the theme of structures and rules corroborates Bronfenbrenner's mesosystem postulates because the absence of perceived rules and structure was deemed by the typical student to be a factor leading to inconsistent or inappropriate behaviour. That is, he was looking for clues or instructions to direct his behaviour in the new context (school), presumably because these sorts of directions were commonplace at home. This idea reflects precisely what Bronfenbrenner's claimed: that socialisation at home primes an individual's behaviour in other settings. In short, therefore, the usefulness of the bioecological theory for interpreting individuals' behaviour appears to be substantiated.

Briefly, the methods used and constructs measured can be said to have provided answers to the research questions posed in Chapter Two. For the sake of brevity, only the study's most important findings are presented next.

6.2.2 Main findings

Chapters Four and Five describe in great detail the results of the various analyses carried out. The key findings from both analyses are integrated below.

- 1) Family background which has been widely recognized as the single most important contributor to success in school (e.g., Rumberger, 2001) was found to exert an independent influence on achievement

in this cohort of North Queensland students. For both Indigenous and non-Indigenous students, higher maternal education, paternal employment and an intact family structure were significantly linked to higher academic achievement. In all, 24 per cent of the variance in academic achievement was predicted by SES variables alone. Conversely, students at-risk tended to be Indigenous, come from a blended, or single parent family, where one parent was unemployed and maternal education was limited to high school. Indigenous students in particular were likely to be failing academically as early as Year 8, whereas non-Indigenous students were more likely to fail as they entered Year 10. The most significant link with failing English and/or mathematics was suspension level with those at-risk having the highest suspension levels, a result echoing much prior research (e.g., Jimerson et al. 2000) and showing, in bioecological theory terms, a lack of correspondence between student and school aims. The qualitative data illustrated the reasons behind some of these suspensions. In the case of the student at-risk suspensions were connected to inappropriate behaviour towards a teacher in the class/school, while in the case of the resilient student they appeared to be the result of fights with other students in the playground at a time of heightened home stressors.

2) A key question of the study was whether within-student characteristics and perceptions were important correlates of academic achievement, overriding the effects of socio-demographic characteristics.

Authoritative parenting perceptions were found to be highly linked to academic success whereas neglectful parenting was associated with academic failure. Moreover, the strictness dimension of parenting appears to be a protective factor since resilient students reported significantly higher levels of this element. The differences in parenting dimension perceptions in the three groups of students were found to be statistically significant and their correlation with school perceptions was of interest. As predicted by Bronfenbrenner's theory, typical students' parenting perceptions were highly and positively correlated with their school perceptions, but resilient and students at-risk perceptions of these two microsystems were not. This finding is important because it shows that what was hypothesized is likely to be accurate. Namely, perceptions of parenting approaching an authoritative parenting style, with high levels of warmth and strictness, predict higher levels of positive school perceptions. In the case of students at-risk, low parenting perceptions go hand-in-hand with low school perceptions. But in the case of resilient students, something takes place in the students' processing of the two contexts and lower overall perceived parenting elements do not predispose them to having lower school perceptions. On the contrary, their school perceptions are comparable to those of typical students with positive teacher relationships being very strong. *This may be a key difference between*

students at-risk and resilient students, showing that a positive school microsystem might compensate for a less supportive home environment. A further explanation based on bioecological theory is that academic socialisation taking place in the home facilitates adaptation to the school context with the converse resulting in poor school adaptation.

Interview data substantiated and illustrated these issues with reports of conflict between the mother of one of the students at-risk and teachers and non-involvement with school in the case of the other student. Further, resilient and typical students all stated congruence between home and school values. This was due to parental or other carer's views and school values, or due to a match between home activities and complementary school activities.

The structural equation model constructed to unify the results of the analyses explains 48 per cent of the variance in achievement for the whole cohort of 1050 students while for those who are not at academic risk it accounts for 55 per cent of the variance. This suggests that the model provides a very good explanation of the possible mechanism through which parenting and school contexts are linked to achievement. The model has a high correspondence with Bronfenbrenner's theory predictions as it shows the levels of possible influence appearing in such relationship as might be expected from the impact of microsystems and mesosystems upon the individual.

The innermost and most proximal correlate of achievement is self-efficacy, a construct whose effects are opposed by an equally proximal but negative self-handicapping tendency. High levels of dispositional mastery goals and a positive coping strategy act as positive (protective?) conduits for the influences of the parenting and school microsystems; positive parenting perceptions also connect directly with self-efficacy and self-handicapping but in the case of self-handicapping this link is negative.

At the next level up, the mesosystem, there is a strong positive correlation between the two microsystems for typical students. More distally, SES variables, representing the exosystem, are linked with the mesosystem, via correlations. Indirect effects of exosystem elements to student achievement are mediated by the microsystem contexts. There are also direct links between the exosystem and achievement, presumably through such elements as resources, both material and behavioural. As demonstrated in Chapter Four, parenting style appears to be linked to family structure and paternal educational attainment, further substantiating Bronfenbrenner's postulates. Interview data showed scenarios and suggested processes through which these influences seemed to take place:

through parental involvement in school decisions or events in the case of typical students or significant others' involvement in the case of the resilient students; and/or activities within the home microsystem that support and complement activities at school. Students' at-risk accounts were notable for their lack of reported instances of parental involvement or for the reported conflict between parents and teachers.

3) The study was primarily designed to expose differences between those students who were at-risk and those who were resilient. Apart from the parenting and school perceptions of these two groups of students, what typified resilient students were low suspension levels, low projective coping and low self-handicapping cognitions with a concomitant higher level of self-efficacy, dispositional mastery goals and positive coping strategies. In sum, these suggest a more controlled, self-managing and self-reflective approach to schooling and its demands. Interview data showed applications of these higher levels of self-efficacy, mastery and positive coping strategies through stories, incidents and future goals that the students reported. By contrast, the stories of the students at-risk revealed a lack of positive coping, a lack of future direction and a great need for emotional support.

Contrary to expectations, optimism was not found to be significantly different between resilient and students at-risk, both reporting more pessimism than typical students. Indigenous students in general had lower optimism than non-Indigenous students, suggesting that perhaps there is a link between expectancy orientation and socioeconomic status. Resilient, students at-risk and Indigenous students tended to occupy lower SES niches than typical students.

4) The quantitative findings were exemplified by the interview narratives of the students. In particular, the two resilient students portrayed themselves as proactive, reflective, having a great deal of personal agency and better able to cope with their home and school circumstances than the two students at-risk. By contrast, students at-risk reported incidents and experiences that showed an inclination to place the responsibility for their school outcomes upon their teachers or others, adopting a more helpless persona. Moreover, they seemed to be more sensitive to negative societal patterns such as racism and intolerance, allowing these perceptions to suppress or dampen their actions, and make them angry. The two students at-risk interviewed reported less positive relationships with others in comparison to the two resilient students, including the relationships between themselves and significant others such as parents and teachers. In other words, their social capital was not as rich as that of the other four students. One of the most striking differences between the resilient students and the student at-risk was their response to racism. While racism provided an impetus to overcome perceived inequalities in the

resilient students the students at-risk were angered, frustrated and ultimately perhaps even debilitated by it.

An interesting and perhaps not unexpected matter emerged from the interviews: the issue of an alternative learning style for one of the students at-risk. This suggests that for this student, perhaps rendered at-risk due to gaps afforded by his earlier education, more freedom of expression in traditional classroom settings such as science lessons, may permit him to gain a measure of success and increase his self-efficacy and engagement with school work.

6.3 Implications and recommendations for practice

In interpreting the results above it is important to remember the macrosystem or big picture perspective. Effective parenting is context specific and largely defined by the environments in which families live (Bronfenbrenner, 1989). Furthermore, a particular parenting style perception may be transient, dependent on contextual factors such as social networks and environment, economic factors including mobility and macro-system variables such as the political and economic climate as well as changing educational values and cultural norms. Parents need support from the broader social milieu for the task of parenting, educating and socialising their children. Promoting positive developmental trajectories and educational resilience depends on creating healthy external systems of support as well as psychosocially healthy individuals (Thomson, 2002).

Socioeconomic situation of the family and family structure, factors that emerged as significant risks for academic failure, are largely beyond the sphere of influence of teachers or of schools. In other words, school professionals are not able to affect parents' employment, parents' educational level, or the incidence of divorce in the family. On the other hand, externalising behaviour, motivational goals and coping strategies include elements with which schools can deal. If an adolescent attempts suicide or uses drugs, for example, the school can provide information, counselling, or special support. If a student has poor grades or a low level of academic self-efficacy, teachers and others in the school are in a position to help that student in a variety of ways:

Encourage a sense of self-efficacy and agency. Teachers can provide opportunities for adolescents to take responsibility and make decisions as developmentally appropriate and learn from their successes and failures. A strongly developed sense of autonomy and ability to ask for support when needed is one of the characteristics of resilient students encountered in this study as well as elsewhere in the literature (e.g., Werner, 2000). Teachers can provide opportunities to develop a sense of power to influence the

environment, for example, by helping others in the community or solving a real-life problem. They can encourage students to develop and pursue interests and hobbies that enrich their skill development as a source of personal satisfaction. They can ensure optimal self-protection without removal of all stress by developing open discussion forums that encourage student participation and address issues of emerging importance.

Teach directly and indirectly a range of culturally appropriate coping strategies and coach implementation. Teachers can support student awareness and flexible implementation of effective coping strategies. They can help students develop attitudes and metacognitive skills supportive of positive coping strategies (Rutter, 2000). Teachers and students can share a variety of positive coping strategies that have worked for them and for others who have succeeded despite hardships. Teachers can offer and model culturally consonant coping strategies, such as using humor and creativity in coping and achieving as a way of helping their communities and next generations to succeed (Dudley-Grant et al., 2004). They may need to enlist families and communities to support culturally specific coping strategies found effective in the literature (Dudley-Grant et al., 2004), such as promoting spirituality, encouraging use of traditional Indigenous knowledge and ways of knowing, encouraging story telling, and drawing on past experiences of overcoming trauma. Awareness of varied alternatives may be insufficient to improve younger adolescents' coping in the absence of practice, role playing, and scaffolding (Williams & McGillicuddy-De Lisi, 2000). Teachers can encourage students to practice coping skills by problem solving and role playing or by using positive-self statements in the face of typical stresses (Alpert et al., 2004). They can model planning, problem solving, persisting, and coping positively in stressful situations. Hess and Copeland (2001) cite studies indicating that instruction in coping skills and problem solving can help adolescents decrease stress and improve problem solving. They claim that a strong relationship with a caring teacher who has high expectations can decrease susceptibility to negative peer influences. Schools can play a key role in enabling adolescents to acquire effective coping skills through training from as early as primary through high school.

The complex relationships among personal traits, coping skills, and environmental supports in determining resilience point to collaborative efforts between teaching and counselling personnel. Given their daily contact with large numbers of students at-risk, schools can potentially play a major role in enhancing resilience (Doll & Lyon, 1998). Wang, Haertel, and Walberg (1998) caution however, that increasing children's educational resilience requires a comprehensive effort (teachers with high expectations; learner-centred instruction; challenging, non-remedial curriculum) and cannot be effected

by a simple set of activities. Moreover, Rumberger (1995) cautions that different groups of students, based on ethnicity and SES, have different characteristics and different risk factors for academic failure: “this suggests that formulating practices and policies to address the drop-out problem from some universal or aggregate analysis may lead to misguided and ineffective actions”(p.609).

Encourage mastery achievement goals. Setting a goal demonstrates an intention to achieve and triggers learning. Target-setting and positive feed-back given in an incremental manner can enhance self-efficacy and engagement with the task (McLean, 2003). Teachers can encourage mastery goals by using appropriate applications for the task at hand and promoting feelings of competence by subsequent employment of the learnt skill in a meaningful (to the student) context. Sustained efforts in this area would be required to effect change in goal orientation for students at-risk, and in high school contexts collegial support is more likely to prove efficacious than single context efforts.

Encourage optimism and point out self-handicapping approaches to learning. Whilst it was found that resilient students and students at-risk did not differ significantly in their levels of expectancy, both had lower optimism levels than typical students. At the same time, students at-risk were more inclined to self-handicap, perhaps by way of ego-defence. Since general well-being of students can be affected by their overall level of optimism (Scheier, Carver & Bridges, 2001), counsellors, teachers, (and families) can help adolescents process their bad experiences and incorporate them into their concept of self, think optimistically, accept the reality of a bad experience without self-blame for events outside their control, and build on positive aspects of a bad situation (Rutter, 2000). Gillham, Reivich, Jaycox, and Seligman (1995) found cognitive and social-problem-solving techniques effective in teaching Year 5 and 6 students to be more optimistic; these students were less likely to experience depression two years after a 12-week intervention. Externalising behaviours typifying students at-risk might also be decreased this way. The time to interact with students at this level must be made available to teachers.

Validate and allow expression of experiences with bias. Teachers can recognise and acknowledge social injustices experienced by adolescents (Dudley-Grant et al., 2004) and help them identify effective strategies for overcoming them. They can enlist community members to provide stories and examples of positive strategies for coping with racism, sexism, homophobia and other forms of discrimination, thus providing adolescents with a sense of support from the school context as well as discouraging discriminatory views from overwhelming the school community.

Support pride in heritage. Teachers can work with communities to strengthen students' ethnic identity through their engagement in intercultural activities. Teachers can encourage and provide

opportunities for students to become bilingual and bicultural. In Australia there have been great strides made in this direction in the last thirty years. In relation to Indigenous cultural activities there is a great deal of scope to improve general awareness both for students and teachers.

Teach students about parenthood. Many teenage pregnancies occur to adolescents rendering them at-risk of dropping out of school. For example, in 2004, mothers under the age of 19 accounted for 5.8 per cent of all live births in Queensland (4.3 per cent in Australia) while the figure rose to 19.7 per cent for Indigenous teenage mothers in Queensland (21.2 per cent in Australia) (Commission for Children and Young People and Child Guardian, 2006). At the same time, the effects of parenting practices do not seem to be well known or understood and a need for this sort of information to be disseminated by schools before Year 10 appears to be in order. There are at least two reasons for this: teenage pregnancies are occurring earlier than in previous generations, and school may be the only place where parenting studies are accessible to some young people. The positive effects of authoritative parenting should be extolled early, before adolescent education ceases.

Returning to the family context what are some of the ways through which family resources can be enhanced? Brooks-Gunn (1995) cites income, time, human capital and psychological capital as the four main family resources. Of these, psychological capital is amenable to interventions since it is considered to incorporate parenting behaviour, attitudes and beliefs as well as parental emotional health and social support. In predominantly lower socioeconomic status areas, with a concomitant higher level of single parent families, the school can serve as a hub of information, disseminating programs and social support activities, providing connections and emotional support for parents who might otherwise have none. This is important since it has been shown that maternal depression is associated with externalising problems in their offspring (e.g., Pelligrini, Perlmutter, Galda, & Brody, 1990) and with a decreased involvement in school (Kohl, Lengua, & McMahon, 2000).

A connection with school can alter the values that parents hold with respect to education and these can be translated into greater involvement with their children's schooling, resulting in positive changes to their offspring's attitudes to school.

In conclusion there are many ways whereby schools can enhance the academic resilience of students. There is however, much work still to be done to confirm present findings. Some of this work stems from the limitations of this research, outlined below.

6.4 Limitations

The study is not without shortcomings. First and foremost is the issue of abstraction of human behaviour and attitudes to numerical quanta, or the use of psychometric tests. By definition psychometric tests involve a measurement of the mind, and are designed to measure the intrinsic mental characteristics of a person (Hammond, 2000). Almost by definition the elements under consideration will be those attributes of the person that do not lend themselves to simple physical measurement. This process, common in psychological research, has its own particular limitations generating a great deal of philosophical as well as practical discussion. For example, Essex and Smythe (1999) argue that:

When psychologists apply mathematical machinery to psychological ideas, that machinery imposes certain requirements in the linkage of numbers and notions. These impose choices driven by the mathematics and not the psychology. These decisions, forced by the mathematics, induce theoretical issues in the psychology. (p.1)

Additionally, quantitative data, while constructed and obtained with the purpose of reducing error, may also be subject to bias through the statistical manipulation (paradigm) imposed upon it (Iversen, 2003).

Given that direct observation, possibly the preferred research method, is not feasible for large numbers of individuals the reduction of attitudes and perceptions to what could be incomplete constructs is relatively common practice among researchers and one is forced to accept this mode of exploration with its imperfections.

Another possible source of bias is the sampling adopted here which was clustered sampling. Borne out of pragmatic considerations, that is, the agreement of three out of five schools to participate in the research, it could have led to higher standard errors of the measured parameters than purely random sampling. This is because the individuals within a cluster are more similar to one another than individuals randomly recruited. Moreover, the three groups of students may have been over or under represented in the participant schools. Yet, despite possibly higher standard errors present in the results, since there was a relatively high variance accounted for by the structural equation models it is likely that they have underestimated rather than overestimated relations between constructs.

One of the most obvious omissions is the lack of parent and teacher views. Any reports of microsystem contexts would be enhanced if the other participants in the context were also given a voice. This may be of particular importance in the case of teachers whose role is a delicate one of

providing firm and structured guidance without the tempering of demonstrated affection allowed and afforded by the role of the parent. In the case of students at-risk whose surveys indicate that they are more likely to attribute difficulties to others, as evidenced in the higher projective coping strategies, teacher perspectives may be a critical omission. As Kant (1787/1965), stated in the *Critique of Pure Reason* that “I have no knowledge of myself as I am but merely as I appear to myself. The consciousness of self is thus far from being a knowledge of the self” (p. 169).

Related to the above is the limitation generated by the use of self-report questionnaires to assess outcome variables, the lack of temperament measures to assess how student temperament factors influence the perception of the variables reported and the cross sectional nature of the study.

Adolescent temperament has been shown to interact with parenting behaviours, perhaps eliciting particular parenting responses. Parenting has been shown to play an important moderating role in the relationship of particular temperament characteristics to student adjustment (Letcher, et al., 2004). The lack of information obtained from the participating schools with regard to students who might have learning disabilities but are include in this sample is another limitation. These students would need to be surveyed separately, possibly using alternative questionnaires. However, the replication of findings from previous studies suggests that the use of self-report questionnaires was an acceptable and reliable way to access both predictor and outcome variables. Finally, the cross-sectional nature of the study cannot confirm whether parenting style and school perceptions precede the outcomes assessed even with the use of SEM techniques. It is possible that adolescent characteristics elicit particular parenting responses which then reinforce student attributes. Studies of longitudinal design are imperative to establish the causal influence that might exist among these factors and the degree of reciprocity that might be present between adolescent characteristics and parental factors.

Other omissions include: ability or IQ measures which would have added another dimension to the profile of resilient and students at-risk, although American researchers state that IQ accounts for only about 25 per cent of the variance in schooling outcomes (Sternberg, Grigorenko, & Bundy, 2001); more fine grained achievement results, perhaps as percentages that would permit a greater range of variability for the structural equation modelling procedures to compute variances; recording whether English was a second language, important for Indigenous and immigrant students; and a larger number of interviewees that might have accessed a wider range of perspectives in depth.

The qualitative segment of the study was subject to its own particular limitations. A persistent cause of bias is that of researcher-participant interaction. The act of interchange between researcher and participant affects the participant's responses directly or indirectly. Clear illustrations of this are the Hawthorne studies where the effects of observation masked the effects of the variables being examined (Borg & Gall, 1983). The interaction between the researcher and the participant may in some cases obscure the "truth". Participants may try to respond in a way that they believe is expected of them. This, the response effect (Borg, 1983), is the difference between the answer given by the respondent and the correct answer. It is of concern because of a "preoccupation with verificationist criteria of meaning which has made us devotees of prediction as the criterion of good science, including good psychology" (Bruner, 1990, p.16). What Bruner is saying here is that scientists are concerned that what people say is not necessarily what people do. This limitation of interviews is minimised with the use of longitudinal data¹⁸.

An unavoidable problem faced by the researcher is that values, or bias, guide the observations made (Greenbank, 2003). Greenbank (2003) argues that the interaction between the researcher's moral, competency, personal and social values play an important part in the research process. A value neutrality approach cannot be sustained however, because, Greenbank argues, "even before data is analysed, interpreted and presented, the researcher's method of sampling, experimental design or questionnaires are likely to reflect their (often unconscious) values" (p.792). Qualitative data may be unavoidably subject to bias, whether that is due to the researcher's selective focus or the interpretive framework's limitations. In this study an effort was made to make the interpretations as transparent as possible by quoting extensively from the interview transcripts and by making explicit the interpretive framework employed.

Notwithstanding the above, the results of this study provide one explanation of the role of motivational and coping constructs, and the parental influences upon them, in supporting achievement for typical students and suggest that their absence might be a significant factor in predicting an at-risk trajectory for low achieving students. The SEM model employed accounted for 48 per cent of the variance in achievement and presented a possible ordering of the relations found in the data in a research study where ethical considerations make an experimental design unfeasible.

¹⁸ Of the six students interviewed, the two typical and two resilient students successfully continued to Year 12 and one of the at-risk students persisted to Year 12 with mixed success. The Indigenous student at-risk however dropped out in Year 11. Another of the students at-risk interviewed initially was subsequently not included in the study out of respect as she committed suicide.

6.5 Directions for future research

In light of the foregoing, studies of a longitudinal design to approximate causality of effects from family contexts to adolescent outcomes via motivational constructs are of utmost importance. Preferably, these should commence early in the young person's life, continue through to the transition from primary to high school and follow the students to the senior years of high school. Of great importance with regard to Indigenous developmental trajectories is the need to conduct research within the Indigenous cultural context. Sternberg and Grigorenko (2004) who have studied various cultures in their natural setting have found that conceptualisations of intelligence, and the concomitant encouragement of the acquisition of certain skills, differ considerably across cultures. They urge a more contextualised approach to understand the motivational drive to achievement.

To maintaining the integrity of Bronfenbrenner's theory, future research should be conducted in several family areas:

- How do families make decisions regarding allocation of resources, including time?
- How do family resources interact to produce developmental outcomes?
- How are processes such as these different in single-parent contexts and blended family contexts?
- Do positive parental attitudes about education have longitudinal effects upon adolescent outcomes, or are these tempered by the adolescent's temperament?
- Is there reciprocity in the propagation of influences and to what age is this important?

Caldas and Bankston (2005) for example cite evidence that Korean parents spend a much larger proportion of their income upon their children's education than other nationals. Areas for additional research to provide further illumination of the factors that enhance student achievement might include:

- Research to refine the issue of parental involvement and how that varies as a function of offspring personality.
- The issue of order and structure needs to be investigated since it appears to play an important role in supporting students' meaning making of school and behaviour in general.
- Research on the views of Indigenous people in connection with their perceived agency for the future may provide additional insight into protective factors that assist to make Indigenous students resilient.

- Longitudinal research into the effects of home and school contexts upon optimism, to clarify whether dispositional optimism precedes home/school attributions or is the result of particular microsystem experiences.
- Research into the perceptions of students whose parents are teachers in the school they attend to validate Bronfenbrenner's theory.

Longitudinal studies are also needed to assess the effects of maternal depression or psychological resources upon developmental outcomes of children, including academic achievement. Moreover, the finding that both resilient and students at-risk are less optimistic than typical students, seems to indicate that there are SES influences upon optimism levels. Investigating optimism levels by socioeconomic status and ethnicity could prove revealing. Finally, intervention research needs to become more strongly founded on empirical studies. In addition, a drive to understand how contextual factors within schools and work settings can enhance or impair the implementations of interventions will be increasingly necessary.

6.6 Summary

We know some things about what predicts an at-risk trajectory: there are many signs that are able to be quickly recognised by school counsellors and school staff: e.g., family structure, SES, certain within-adolescent variables. Similarly we also know some attributes of resilient students: an autonomous, proactive approach to learning, high value for education and positive relationships with adults. The gaps in our understanding can be remedied but only through longitudinal studies that are context specific.

In reacting to the findings of this study I was very conscious that the main driver to the research was academic achievement and its correlates. However, students at-risk also have the highest level of suspension rates. It seems that whilst suspension rates may relate to or herald lower achievement, they are also a strong indication of being at odds with the school system. They show that the student is expressing disaffection, possibly anger and unhappiness. This alone is and should be of concern to teachers and administrators since it may show student frustration and helplessness. In the case of students who also report neglectful parenting, it may also be evidence that the student has few sources of support. Inner resources to cope with the school environment and its demands have been shown to be attributes of resilient students: high measures of positive coping, and self-efficacy and low measures of self-handicapping and projective coping. By contrast students at-risk have the converse patterns

and surely need a compassionate and patient approach in dealing with them and their behaviour, as well as clearly defined and well substantiated self-management programs to enhance impulse control, compliance with instructions and perseverance in the face of academic difficulty.

Intervention is something most teachers do to a greater or less degree for students in their care. Unfortunately not all interventions have beneficial effects because most interventions have the potential for both negative and positive results. For example, continued correction of a student's efforts might affect their self-efficacy and their motivation to proceed with a given task (Alderman & Taylor, 1993). Moreover, the teacher's teaching style during the intervention might be a mismatch to the student's learning style leading to further behaviour problems and disaffection (Cohen, 1981).

Education should not be just about obtaining a higher academic grade. The inner resources to cope with demands placed upon students also need to be developed. In the case of some students, those whose support at home may be compromised, the school might be the only other place where they can learn positive coping strategies and interpersonal skills.

It is not only our duty as educators to help students to gain these skills, but also our duty to society at large to help adolescents develop pro-social behaviour and management strategies that prevent them from turning frustration and disenchantment to truancy, anger and anti-social engagement.

And indeed, research consistently demonstrates that families, communities, and schools can enhance both psychological and educational resilience in adolescents by focusing on alterable factors, such as social support, interpersonal skills, educational aspirations, self-efficacy, empathy, problem solving, and coping strategies. School-family-community partnerships are also potential sources of protective factors through the enhancement of students' social capital which promotes a sense of connectedness and support (Epstein & Sanders, 2000).

The power to effect such change lies with government and its decisions to deploy resources over the long term to provide a better teacher-to-student ratio, more counsellors for students, and more funding in general so that the time teachers and other school personnel require for students' needs is available to them. The power to effect change also lies with individual teachers, in their capacity to develop meaningful mentoring relationships with those students most in need.

Appendix A Teacher instructions for administering questionnaire

To teacher administering the enclosed survey:

The survey will take approximately 30-40 minutes to complete. Please read these instructions to the students as well as the instructions at the top of each sub-section of the survey.

Please inform students that the survey is completely confidential and their name will only be used to invite some of them back for an interview. They do not have to participate in the interview if they choose not to.

Please ask students to complete all pages of the questionnaire and ensure that they have checked all pages before handing them back.

At the end, the completed surveys are to be placed in the envelope provided and sealed in front of the students so that they are assured that their information will not be read by anyone other than the researcher at JCU.

Thank you for your assistance,

Helen Boon

Appendix 1 Informed consent and principals' letter to parents

24 June 2004

Dear Parents/Students

I have agreed to mail home this letter and to, hopefully, become involved in this research because our school will be able to access the results and use this information in future planning. All information will be treated with the utmost confidentiality and no individual student will be able to be identified.

This is a great chance for us to gain an insight into the perceptions of our students in Years 8 to 10 through professional research and at no cost to our school.

I urge you to allow your student to be involved so we can survey the biggest group possible.

Thanking you in anticipation of your acceding to my request.

Regards

(Identity concealed for the privacy of the schools)

Principal

Informed Consent Form-Parent/Guardian

SCHOOL: School of Education
PROJECT: "Perceptions of secondary students in the Townsville region"
INVESTIGATOR: Helen Boon
CONTACT DETAILS: Ph 4781 6030; Email: Helen.Boon@jcu.edu.au

DETAILS OF CONSENT:

This project seeks to find out what motivates students to study at school. Therefore your son/daughter's views and opinions of their schooling and environment are important. Three schools in the area are participating, XXXX State High School, YYYY State High School and ZZZZ State High School.

In this regard I would appreciate it if you would allow your child to be interviewed your to talk about his/her views on schooling, education, and future employment aspirations. The interview is likely to take about 40-50 minutes. The interview questions will be open so that your son/daughter can respond in a way that is comfortable for them, although the emphasis will be for him/her to give their personal views. He/she will also be entirely free not to answer particular questions, or to terminate the interview at any time. I will not be seeking to judge his/her responses, but to use them as a way of reflecting on what issues are relevant to educational motivation at the present time in this region. What he/she says will be treated in strict confidence and complete confidentiality will be observed.

The information obtained will be used for a PhD thesis but there will be nothing in what is published that will identify your child with any particular comments or responses. If you would like the results of the study when it is finished you can arrange with me to have a full report posted to you.

I seek your permission to interview your child, under the conditions outlined above, at a time and place convenient to both of you or at school. If you agree to this request, please complete and sign the Consent Statements in the box below and return it to school as soon as possible.
Thank you for taking the time to consider this request.

GUARDIAN CONSENT

The aims of this study have been clearly explained and I understand what is required. I know that taking part in this study is voluntary and I am aware that my child can stop taking part in it at any time and may refuse to answer any question.

Please tick (✓) the relevant box below:

I agree to allow the researcher to interview my child for this project (as above)..... #

I understand that any information given will be kept strictly confidential and that no names will be used to identify my child with this study.

Guardian's Name: (printed)	Contact phone
Student's Name: (printed)	School:
Signature:	Date:

Appendix 2 Questionnaire

How do you feel in general?

Show how strongly you *agree* or *disagree* with each statement above each box by circling one number between 1 and 5.

1. *I believe in the idea that "every cloud has a silver lining"*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
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2. *In uncertain times I usually expect the best.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
--------------------------	---	---	---	---	---	-----------------------

3. *If something can go wrong for me it will.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
--------------------------	---	---	---	---	---	-----------------------

4. *I always look on the bright side of things.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
--------------------------	---	---	---	---	---	-----------------------

5. *I'm always optimistic about my future.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
--------------------------	---	---	---	---	---	-----------------------

6. *Things never work out the way I want them to.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
--------------------------	---	---	---	---	---	-----------------------

7. *I rarely count on good things happening to me.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
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8. *I hardly ever expect things to go my way.*

<i>Strongly disagree</i>	1	2	3	4	5	<i>Strongly agree</i>
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Home Perceptions

Think about each of the following statements. Does it sound like the kind of thing that you would say? Tick (✓) the box matching the most correct answer

	Mostly True	Mostly False
1. If I have some kind of problem I can count on my father/male guardian to help me out.		
2. My father/male guardian keeps pushing me to do my best in whatever I do		
3. My father/male guardian keeps pushing me to think independently		
4. My father/male guardian helps me with my school work if there is something I don't understand		
5. When my father/male guardian wants me to do something he usually explains why.		
6. If I have some kind of problem I can count on my mother/female guardian to help me out.		
7. My mother/female guardian keeps pushing me to do my best in whatever I do		
8. My mother/female guardian keeps pushing me to think independently		
9. My mother/female guardian helps me with my school work if there is something I don't understand		
10. When my mother/female guardian wants me to do something she usually explains why.		

11. When you get a poor grade at school how often do your parents or guardians encourage you to try harder?					never	sometimes	usually	
12. When you get a good grade at school how often do your parents/guardians praise you?					never	sometimes	usually	
13. How much do your parents really know who your friends are?					Don't know	Know a little	Know a lot	
How often do the following things happen in your family?								
14. My parents spend time just talking with me					Almost every day	A few times a week	A few times a month	Almost never
15. My family does something fun together					Almost every day	A few times a week	A few times a month	Almost never
16. In a typical week what is the latest you can stay out on SCHOOL NIGHTS (Monday – Thursday):	Not allowed out	Before 8pm	8-9pm	9.01-10pm	10.01-11pm	11 pm or later	As late as I want	
17. In a typical week what is the latest you can stay out on Friday or Saturday night ?	Not allowed out	Before 9pm	9-10pm	10.01-11pm	11-12pm	12-2am	As late as I want	
18. My parents know exactly where I am most afternoons after school					Yes	No		
19. How much do your parents try to know where you go at night?					Don't try	Try a little	Try a lot	
20. How much do your parents try to know what you do with your free time?					Don't try	Try a little	Try a lot	
21. How much do your parents try to know where you are most afternoons after school?					Don't try	Try a little	Try a lot	
22. How much do your parents really know where you go at night?					Don't know	Know a little	Know a lot	
23. How much do your parents really know what you do with your free time?					Don't know	Know a little	Know a lot	
24. How much do your parents really know where you are most afternoons after school?					Don't know	Know a little	Know a lot	

Full name:.....

All information that you give us is confidential and will be handled at the University only. No one will know your answers either at school or at home.

1. Personal information: please *tick* (✓) the right answer:
Are you: a. MALE FEMALE
b. INDIGENOUS NON-INDIGENOUS
2. How long have you been at this school? please tick (✓) the right answer
less than 1 term from the beginning of Year 8
1 term from the beginning of Year 9
1 semester
3. What Year level are you in? Tick (✓) the correct answer
YEAR 8 YEAR 9 YEAR 10
4. Have you ever been **suspended** from any school? please *tick* (✓) the right answer
never once only many times
5. Fill in the **grade** you got in your **last semester report** card for the following subjects:
English VL L S H VH
Mathematics VL L S H VH
6. **Tick the box that describes who you live with now:**
mother and father , mother only , father only , step-mother and father ,
step-father and mother , female-guardian , male-guardian , other
7. Is your father/male guardian: (Tick (✓) correct answer)
employed not employed
8. Tick (✓) the highest level of education completed by your father/male guardian:
High school certificate University/College degree Don't know
9. Is your mother/female guardian: (Tick (✓) correct answer)
employed not employed
10. Tick (✓) the highest level of education completed by your mother/female guardian:
High school certificate University/College degree Don't know



Full name:.....

All information you give us is confidential and will be processed at University only. No one at home or school will know your answers. Think about the school you go to now. **Does each statement sound like the kind of thing that you would say?** *If it does, put a tick (✓) in a column with a high number. If it doesn't, put a tick (✓) in a column with a low number.*

MY SCHOOL IS A PLACE WHERE.....	Definitely disagree 1	Mostly disagree 2	Mostly agree 3	Definitely agree 4
1. Teachers are fair and just				
2. I feel proud to be a student				
3. I feel that the teachers give me the marks I deserve				
4. I feel worried				
5. I get enjoyment from being there				
6. Teachers treat me fairly in class				
7. I feel restless				
8. The things we learn will help me in adult life				
9. The work we do is good preparation for the future				
10. I feel depressed				
11. Teachers listen to what I say				
12. I find that learning is a lot of fun				
13. I like learning				
14. I get upset				
15. The things I am taught are worthwhile learning				
16. I am given a chance to do work that really interests me				
17. I really like to go to each day				
18. I have acquired skills that will be of use to me when I leave school				
19. Teachers take a personal interest in helping me with my school work				
20. We learn things that are important to me				
21. I feel lonely				
22. Teachers help me do my best				

The following statements tell us what people think and feel about school.
 Think about each one and put a tick (✓) in the column with the most correct response.

What you do and feel at school.	Not true 1	2	Somewhat true 3	4	Very true 5
1. I can do even the hardest work in this class if I try.					
2. Even if the work is hard, I can learn it.					
3. Some students look for reasons to keep them from studying (not feeling well, having to help their parents, taking care of a brother or sister, etc.). Then if they don't do well on their class work, they can say this is the reason. How true is this of you?					
4. I'm certain I can master the skills taught in class this year.					
5. One of my goals is to keep others from thinking I'm not smart in class					
6. One of my goals is to show others that I'm good at my class work.					
7. Some students purposely don't try hard in class. Then if they don't do well, they can say it is because they didn't try. How true is this of you?					
8. One of my goals is to look smart in comparison to the other students in my class					
9. It's important to me that I look smart compared to others in my class					
10. It's important to me that I don't look stupid in class.					
11. It's important to me that my teacher doesn't think that I know less than others in class.					
12. One of my goals in class is to avoid looking like I have trouble doing the work.					
13. Some students deliberately get involved in lots of activities. Then if they don't do well on their class work, they can say it is because they were involved with other things. How true is this of you?					
14. It's important to me that other students in my class think I am good at my class work.					
15. I'm certain I can figure out how to do the most difficult class work					
16. One of my goals in class is to learn as much as I can.					
17. Some students muck around the night before a test. Then if they don't do well, they can say that is the reason. How true is this of you?					
18. It's important to me that I learn a lot of new concepts this year.					
19. Some students put off doing their class work until the last minute. Then if they don't do well on their work, they can say that is the reason. How true is this of you?					
20. It's important to me that I improve my skills this year.					
21. Some students let their friends keep them from paying attention in class or from doing their homework. Then if they don't do well, they can say their friends kept them from working. How true is this of you?					
22. One of my goals is to master a lot of new skills this year.					
23. I can do almost all the work in class if I don't give up.					
24. One of my goals is to show others that class work is easy for me.					
25. It's important to me that I thoroughly understand my class work.					

Responses to classroom situations

Think about each of the statements below and place a tick (✓) in the column which is most correct to how you react.

	Not true at all 1	Sometimes true 2	Usually true 3	Very true 4
1. When something bad happens to me in school, I try to figure out what I did wrong so that it won't happen again.				
2. When something bad happens to me in school, I say that the teacher didn't cover the things on the test.				
3. When something bad happens to me in school, I feel really terrible.				
4. When something bad happens to me in school, I say it was the teacher's fault.				
5. When something bad happens to me in school, I tell myself it didn't matter.				
6. When something bad happens to me in school, I get angry at the teacher.				
7. When something bad happens to me in school, I can tell myself I'll do better next time.				
8. When something bad happens to me in school, I worry that other students will think that I'm dumb.				
9. When something bad happens to me in school, I say I didn't care about it				
10. When something bad happens to me in school, I get really mad at myself.				
11. When something bad happens to me in school, I feel really stupid.				
12. When something bad happens to me in school, I try to see what I did wrong.				
13. When something bad happens to me in school, I say it wasn't important				

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