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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,

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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.

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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

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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

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(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:

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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

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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.

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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

Skill level category	Employment growth (%)	Employment share (%)		Change in share
		May 1989	May 2000	
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).

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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

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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 lead to the development of particular theoretical models with which the problem of students at-risk may be more closely studied.

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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

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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 (Figure1.1 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

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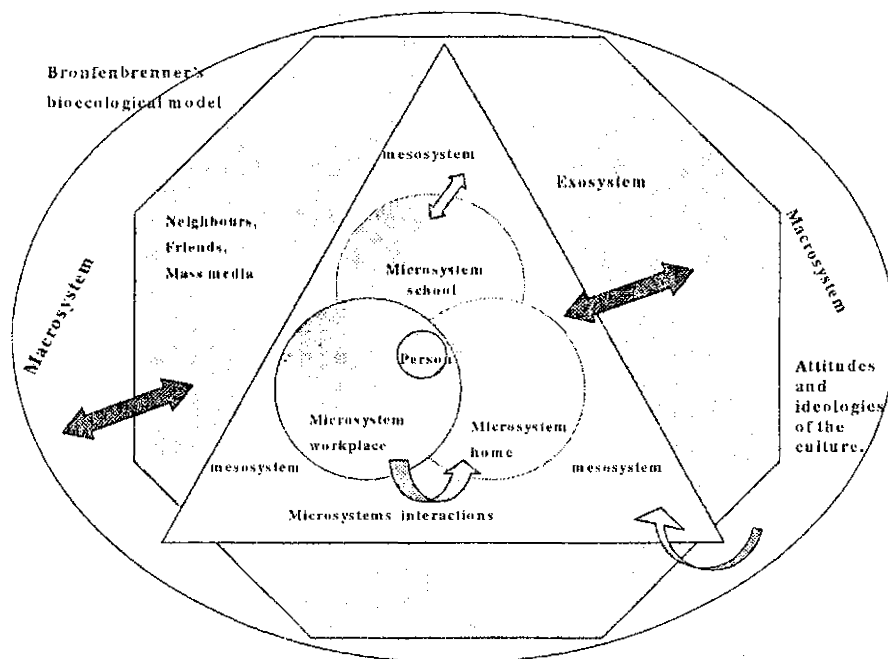
Note: Diagram constructed by author to illustrate Bronfenbrenner's theories.

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

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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

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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

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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, Henrdy, & 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

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(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

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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

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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 & Abouchaar, 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

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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 inturn related to lower achievement (Midgley & Urdan, 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

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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 Rothliesberg (1998) and Marchant, Paulson and Rothliesberg (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 McInerney, 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

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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.

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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.

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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.

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