Students at-risk: a bioecological investigation

Helen Joanna Boon

BSc (Hons), Sheffield, P.G.C.E., Sheffield

A thesis submitted for the degree of Doctor of Philosophy
School of Education
James Cook University,
Townsville,
October 2006
I, the undersigned, the author of this work, declare that the electronic copy of this thesis provided to the James Cook University Library, is an accurate copy of the print thesis submitted, within the limits of the technology available.

__________________________________________  ______________________
Signature                                                                 Date
Statement of access

I, the undersigned the author of this thesis, understand that James Cook University of North Queensland will make it available for use within the university library and, via the Australian Digital Theses network for use elsewhere.
I understand that as an unpublished work, a thesis has significant protection under the Copyright Act and I do not wish to place any restriction on access to this thesis.

..........................................................   ................................
Signature                     Date
Statement of sources

I declare that this thesis is the result of my own research. It has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

Helen J Boon

2006
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.

Editorial support
The doctoral research reported in this thesis was conducted under the supervision of Dr Paul Pagliano, principal supervisor, and Professor Trevor Bond, associate supervisor.

Dr Paul Pagliano has been an invaluable source of editorial support and advice for the thesis, and I sincerely thank him for his tireless attention to detail. Professor Trevor Bond, associate supervisor for this thesis has also played a supportive role through editing and advising, in particular with regard to the statistical analyses chapter. His encouragement throughout my candidature has been really appreciated.

Dr Everarda Cunningham, of Swinburne University, Victoria, not only taught me to use structural equation modelling techniques at a course in Swinburne, but also gave her time freely to look over my structural equation models, giving encouragement and invaluable feedback. I cannot thank her enough.
Acknowledgements

I have to thank Ms Naomi Kuhl, for her accurate and swift data entry of nearly twelve hundred student questionnaires. Without her assistance this thesis would have taken much longer.

In addition to my two supervisors, Dr Paul Pagliano and Professor Trevor Bond, whose editorial help has been invaluable, I would also like to thank various members of the School of Education, James Cook University for their advice and/or reading of parts of my thesis. They include Dr Angela Hill, Dr Peter Boman, and Professor Rob Gilbert.

There have been many who have supported and reassured me during the last three years. Hugh my husband has “lived through” this thesis more than most. My eldest daughter Syvilla, who also read chapters from the thesis and made valuable suggestions, my other daughter Virginia and son John have all played a role in giving me encouragement and support me during moments of doubt and uncertainty. Thank you.

Finally, I would like to acknowledge my father’s influence over the years. He encouraged me to study and value education. Without his influence this thesis would not have been attempted.
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  

**Students at-risk: a bioecological investigation** ................................................................ 17  

Chapter One: The Research Focus .................................................................................... 17  

Introduction ..................................................................................................................... 17  

1.1 Definition of the problem examined in this thesis ...................................................... 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 Importance and purpose of the study ......................................................................... 23  
1.2.1 Importance of the study ......................................................................................... 23  
1.2.2 The purpose of the study ....................................................................................... 25  

1.3 Theoretical perspectives to the study of the problem .................................................. 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 Previous findings ....................................................................................................... 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 Issues as yet to be clarified: important questions that need to be addressed .......... 44  

1.6 Underlying principles governing current research ..................................................... 46  
1.6.1 Study design and constructs employed .................................................................... 46  
1.6.2 A mixed methods approach .................................................................................... 47  

1.7 Methodological considerations .................................................................................... 48  
1.7.1 Sampling matters ................................................................................................... 48  
1.7.2 Student identification ............................................................................................. 48  
1.7.3 Instrumentation ..................................................................................................... 48  
1.7.4 Research questions ................................................................................................. 49
Chapter Four: Quantitative analyses and results

Introduction ............................................................................................................................................ 135
Preliminary analyses of the measuring instruments employed in the study ........................................... 135
4.1 Demographic characteristics ........................................................................................................ 139
4.2 Parenting style associations ......................................................................................................... 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 Ethnicity associations ..................................................................................................................... 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 Summary of comparisons and student profiles ........................................................................... 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 Structural Equation (SEM) models unifying results ..................................................................... 173
4.6 Summary and discussion ............................................................................................................. 192
  4.6.1 Research questions - quantitative sequence ........................................................................... 193

Chapter Five: Qualitative Analysis ...................................................................................................... 202

Chapter overview ............................................................................................................................. 202
Participant selection, rationale for thematic foci and methodological considerations ......................... 202
Participant selection ............................................................................................................................ 202
Rationale for choice of particular thematic foci ................................................................................... 204
Methodological considerations .......................................................................................................... 205
5.1 Summaries of student survey means: school perceptions, parenting perceptions, motivational, coping
  and expectancy orientation constructs ............................................................................................... 207
5.2 Typical students .............................................................................................................................. 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 Resilient students .............................................................................................................. 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 ............................................................................................................................... 232

5.4 Students at-risk .................................................................................................................. 233

5.4.1 Nathan ............................................................................................................................ 233
   Global Impression ................................................................................................................ 233
   School focus ........................................................................................................................ 234
   Parenting focus .................................................................................................................... 236
   Self-presentation .................................................................................................................. 237
   Future orientation ................................................................................................................ 237
   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 ................................................................................................................ 246
   Mesosystem connections ....................................................................................................... 249
   Exosystem connections ......................................................................................................... 249
   Summary ............................................................................................................................... 250

5.5 Discussion......................................................................................................................... 251

5.5.1 Do these interviews support Bronfenbrenner’s theory? ................................................. 251

Chapter Six: Summary, Implications and Recommendations .................................................. 258

6.1 Overview .......................................................................................................................... 258
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 ($\chi^2$) independence test between parenting style and paternal education (N=379) .............. 147
Table 4.2.4 Chi squared ($\chi^2$) independence test between parenting style and suspensions (N=379) ................. 149
Table 4.2.5 Chi squared ($\chi^2$) independence test between parenting style and being at-risk, typical or a resilient student (N=379) .......................................................................................... 149
Table 4.2.6 Chi squared ($\chi^2$) 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) ............................ 150
Table 4.2.8 Optimism means, standard deviations (S.D.) and sample size (N) for the three groups of students ......................................................................................................................................... 151
Table 4.2.9 Means and standard deviations (S.D.) for motivational goals in the three groups of students ....... 154
Table 4.2.10 Means and standard deviations (S.D.) for motivational and coping strategies employed by the three groups of students .......................................................................................... 157
Table 4.2.11 Perception of school life means, S.D. and sample size (N) for three groups of students .............. 159
14
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3.1</td>
<td>Associations between ethnicity and suspension level</td>
<td>162</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Parenting dimension means and standard deviations (S.D.) for three groups of Indigenous students</td>
<td>162</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Mean, SD and sample size of optimism levels in Indigenous and non-Indigenous students</td>
<td>163</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Optimism, mean, S.D. and sample size for three groups of Indigenous students</td>
<td>163</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Means, SD and sample size (N) of motivational goals of Indigenous and non-Indigenous students</td>
<td>164</td>
</tr>
<tr>
<td>4.3.6</td>
<td>Means, SD and sample size (N) of motivational goals of three groups of Indigenous students</td>
<td>164</td>
</tr>
<tr>
<td>4.3.7</td>
<td>Means, standard deviation (S.D.) and sample size (N) of coping strategies in Indigenous and non-Indigenous students</td>
<td>165</td>
</tr>
<tr>
<td>4.3.8</td>
<td>Means, S.D. and sample size (N) of perceptions of school life in Indigenous and non-Indigenous students</td>
<td>165</td>
</tr>
<tr>
<td>4.4</td>
<td>Stepwise regression analyses for achievement for the different groups of students</td>
<td>168</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Resilient students’ demographics</td>
<td>169</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Students’ at-risk demographics</td>
<td>171</td>
</tr>
<tr>
<td>4.4.3</td>
<td>Indigenous students’ demographics</td>
<td>172</td>
</tr>
<tr>
<td>4.5.1</td>
<td>Pearson correlations between predictor variables and achievement (N = 1050)</td>
<td>180</td>
</tr>
<tr>
<td>4.5.2</td>
<td>Model fit statistics summary</td>
<td>182</td>
</tr>
<tr>
<td>4.5.3</td>
<td>Correlations between exogenous variables</td>
<td>183</td>
</tr>
<tr>
<td>4.5.4</td>
<td>Model B constrained comparisons</td>
<td>186</td>
</tr>
<tr>
<td>5</td>
<td>Individual student and group means for all constructs employed</td>
<td>207</td>
</tr>
</tbody>
</table>
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