

# Factors Influencing the Educational Performance of Students from Disadvantaged Backgrounds<sup>1</sup>

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## 1 Introduction

The relationship between family socio-economic status (SES) and the academic performance of children is well established in sociological research.<sup>2</sup> While there is disagreement over how best to measure SES, most studies indicate that children from low SES families do not perform as well as they potentially could at school compared to children from high SES families (Graetz, 1995). Most studies, however, compare students from across all SES backgrounds to reach the conclusion that low SES adversely affects a range of educational outcomes. Another important dimension, however, is the factors that may influence educational outcomes *within* particular SES bands. This paper presents data on the educational performance of children from financially disadvantaged backgrounds and examines its variation as affected by traditional measures of SES as well as by a range of other family, individual and contextual factors.

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- 1 We thank Ian Watson for comments and assistance. Ben Parker, Vanessa Green, Rosemary Dean, Rob Simons, and Anne Clark also provided comments and assistance. The usual disclaimers apply.
  - 2 We acknowledge that the academic performance of children is also related to their innate ability. The degree of individual variance in academic performance accounted for by variation in genetic factors, however, is the subject of intense debate (Sparkes, 1999). More recent research suggests that the traditional ‘nature versus nurture’ debate is somewhat misleading and that both a child’s heritable characteristics and their environment are related and co-exist in complex and significant ways. For instance, ‘hereditary vulnerabilities establish probabilistic, not deterministic, developmental pathways that evolve in concert with the experiential stressors, or buffers, in the family, the neighborhood, and the school’ (Shonkoff and Phillips, 2000: 55). Thanks to Vanessa Green for bringing this reference to our attention.

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Considine, G. and G. Zappala (2002), ‘Factors influencing the educational performance of students from disadvantaged backgrounds’, in T. Eardley and B. Bradbury, eds, *Competing Visions: Refereed Proceedings of the National Social Policy Conference 2001*, SPRC Report 1/02, Social Policy Research Centre, University of New South Wales, Sydney, 91-107.

## 2 Factors that Influence Educational Performance

### Socioeconomic status

*Socioeconomic status* can be defined as ‘a person’s overall social position...to which attainments in both the social and economic domain contribute’ (Ainley et al., 1995: ix). When used in studies of children’s school achievement, it refers to the SES of the parents or family. Socio-economic status is determined by an individual’s achievements in: education; employment and occupational status; and income and wealth. Several comprehensive reviews of the relationship between SES and educational outcomes exist (Amato, 1987; Williams et al., 1991; Mukherjee, 1995; Ainley et al., 1995). These studies and reviews make it clear that children from low SES families are more likely to exhibit the following patterns in terms of educational outcomes compared to children from high SES families:

- have lower levels of literacy, numeracy and comprehension;
- have lower retention rates (children from low SES families are more likely to leave school early);
- have lower higher education participation rates (children from low SES families are less likely to attend university);
- exhibit higher levels of problematic school behaviour (for instance truancy);
- are less likely to study specialised maths and science subjects;
- are more likely to have difficulties with their studies and display negative attitudes to school; and
- have less successful school-to-labour market transitions.

These results remain the same irrespective of how SES is measured and whether the studies are based on individual or aggregate level data (Graetz, 1995: 32-35). Similarly, studies of children’s educational achievements over time have also demonstrated that ‘social background remains one of the major sources of educational inequality’ (Graetz, 1995: 28). In other words, ‘educational success depends very strongly on the socio-economic status of one’s parents’ (Edgar, 1976, cited in Graetz 1995: 25).

The effect of parental SES on children’s educational outcomes may be neutralised, strengthened or mediated by a range of other contextual, family and individual characteristics. Parents may have a low income and a low-status occupation, for example, but nevertheless transmit high educational aspirations to their children. What family members *have* (material resources, for instance) can often be mediated by what family members *do* (for example parental support, family cohesion). The social and the economic components of socio-economic status, in other words, may have distinct and separate influences on educational outcomes. While both components are important, social factors (for instance, parents’ educational attainments) have been found to be more significant than economic factors, such as a family’s capacity to purchase goods and services, in explaining different educational outcomes. It is argued that families where the parents are advantaged socially,

educationally and economically, foster a higher level of achievement in their children. They also may provide higher levels of psychological support for their children through environments that encourage the development of skills necessary for success at school (Williams et al., 1980; Williams, 1987; Williams et al., 1993).

### **Family Structure**

Socio-economic status may therefore also be linked to family structure. As sole parent families on average have lower levels of income, are headed by parents with lower educational attainment and are less likely to be in the labour force, children from these families are likely to have lower educational performance (Rich, 2000). Other factors in sole parent families that are likely to adversely affect educational outcomes of children compared to those from two-parent families are said to include:

- reduced contact between the child and non-custodial parent;
- the custodial parent having less time to spend with children in terms of supervision of school-work and maintaining appropriate levels of discipline;
- the lack of an appropriate role model, especially for males;
- increased responsibilities on children such as childcare roles, domestic duties which impede the time available for school work; and
- the nature of parent-child relationships in sole parent families may cause emotional and behavioural problems for the child (Buckingham, 1999; Rich, 2000).

The influence of family structure has been found to be only weakly associated with educational attainment, however, once controlling for other variables (Machin, 1998). It is more detrimental when children in sole parent families also experience a range of other risk factors such as low income (Sparkes, 1999).

### **Type of School**

As well as socio-economic status, research has shown the importance of the type of school a child attends in influencing educational outcomes. While research in the US has found that SES variables continue to influence educational attainment even after controlling for different school types, the school context tends to affect the strength of the relationship between SES and educational outcomes (Portes and MacLeod, 1996). Similarly, research in Britain shows that schools have an independent effect on student attainment (Sparkes, 1999). While there is less data available on this issue in Australia, several studies using the Longitudinal Surveys of Australian Youth have found that students attending private non-Catholic schools were significantly more likely to stay on at school than those attending state schools (Long et al., 1999; Marks et al., 2000). Students from independent private schools are also more likely to achieve higher end of school scores (Buckingham, 2000a). While school-related factors are important, there is again an indirect link to SES, as private schools are more likely to have a greater number of students from high SES families, select students with stronger academic abilities and have greater financial resources. The school effect is also likely to operate through variation in the quality and attitudes of teachers (Sparkes, 1999). Teachers at disadvantaged schools, for instance, often hold

low expectations of their students, which compound the low expectations students and their parents may also hold (Ruge, 1998).

### **Absences**

Also related to poor educational performance is the level of truancy or unexplained absence among students. Truancy can be modelled both as an educational outcome and as a causal factor in explaining educational performance. Truancy tends to be higher among students from low SES backgrounds. Truancy, even occasional, is associated with poorer academic performance at school (Sparkes, 1999). Having high levels of unexplained absence at school has also been found to be associated with poorer early adult outcomes in the labour market for instance higher probability of being unemployed and poorer adult health relative to non-truants (Sparkes, 1999).

### **Gender**

Educational performance at school has also been found to vary according to the student's sex (Horne, 2000). In particular, reviews of the evidence suggest that boys suffer an educational disadvantage relative to girls, especially in terms of performance in literacy (Buckingham, 1999; 2000b). There are several explanations for this increasing gender gap which include: biological differences; gender biases (such as reading being seen as 'not masculine'); teaching, curricula and assessment (for instance less structured approaches to teaching grammar may have weakened boys' literacy performance); and socioeconomic factors (Buckingham, 1999: 5). The last explanation is of particular interest in the context of this paper, especially the finding that the gender gap continues within each socio-economic level (Teese et al., 1995). That is, girls have been found to out-perform boys within high or low socio-economic groups. Furthermore, the performance of boys deteriorates more rapidly than the performance of girls as they move down the socio-economic scale (Teese et al., 1995). As was noted above, the relationship between the performance of boys and socio-economic status is often mediated or partially explained by family structure (Buckingham, 1999: 9-10).

### **Ethnicity**

The ethnic background or immigrant status of parents is also an important mediating variable on the influence of SES on children's educational performance. Studies of the academic performance of second-generation school students in the US have found that while their performance is also influenced by the SES of their parents and type of school, 'their national background plays a significant independent role' (Portes and MacLeod, 1996: 270). The authors found that some first-generation immigrant parents (e.g., Cuban, Vietnamese) through the process of migration and subsequent incorporation in the host society, come to see education as a key means of upward mobility for their children, despite their own low levels of education and income (Portes and MacLeod, 1996). Children from these communities did well despite coming from low SES backgrounds whereas the negative effects of SES were not ameliorated in the academic performance of children from immigrant communities with low levels of social capital (e.g., Haitian, Mexican).

Similar findings have emerged within the Australian experience. While the children of immigrants were seen to be at a disadvantage up until the mid-1970s (Martin, 1978), the gradual introduction of multicultural policies in the classroom from that time may

have improved the situation (Cahill, 1996). A series of studies based on Census data suggests that the second generation (especially those of European, Indian and Chinese origin) have achieved substantial educational mobility in terms of staying on at school, compared to those from British, German, Dutch and Australian origin (Birrell and Khoo, 1995; Khoo, 1995). As a consequence, higher percentages of children from non-English speaking background (NESB) achieve tertiary qualifications compared to those from English-speaking background (ESB) (Birrell and Khoo, 1995; Dobson et al., 1996). As with the US research, however, there is a great deal of variation between different ethnic groups. Studies have found that it is more likely that people from Vietnamese, Chinese, Eastern European and Korean backgrounds are in higher education than people from ESB. Whereas those whose language group was Arabic, Khmer and Turkish were half as likely to be in higher education than those from ESB (Dobson et al., 1996; Cahill, 1996; see also Marks et al., 2000).

### **Geographical Location**

Students from non-metropolitan areas are more likely to have lower educational outcomes in terms of academic performance and retention rates than students from metropolitan areas (Cheers, 1990; HREOC, 2000). Despite an adequate number of educational facilities in rural and remote Australia, school children from these areas remain disadvantaged by other factors. Issues affecting access to education in regional areas include costs, the availability of transport and levels of family income support. In addition, inequity exists with regard to the quality of the education that rural students receive, often as a result of restricted and limited subject choice. Furthermore, students may also have limited recreational and educational facilities within their school (HREOC, 2000: 12).

### **Housing Type**

Lower educational attainment has also been found to be associated with children living in public housing compared to those in private housing (Sparkes, 1999). This may be due to the effects of overcrowding, poor access to resources and a lack of social networks, and in this sense, housing type may also be a measure of neighbourhood influence. A recent Australian study based on 171 Year 12 students from 10 state schools, found that neighbourhood effects ‘were an important influence on students’ educational plans...’ to continue further post-secondary education, after controlling for a range of individual and family socioeconomic characteristics (Jensen and Seltzer, 2000: 23). Measures of the neighbourhood included the level of neighbourhood income, the unemployment rate, an index of educational attainment and the percentage employed in professional fields. This study was unable to identify, however, the precise transmission mechanisms for such neighbourhood effects. Whether, for instance, they were due to spillover effects such as peer group influence, the presence or lack of job networks and role models or whether the neighbourhood variables were acting as proxies for school quality or housing type.

## **3 Data Description**

The data for this study comes from a sample of 3 329 students who were on the Smith Family’s *Learning for Life* (LFL) program in 1999. The LFL program is an intervention aimed at assisting families and children by providing financial and non-material support to families and children in financial disadvantage (almost 90 per cent

of families on the program are dependent on social security payments as their main source of income).<sup>3</sup> The sample includes students from Year 1 to 12 from state schools in NSW, Victoria, Queensland, South Australia and the ACT. The sample equates to 48 per cent of all school-level students who were on the program at the end of 1999.<sup>4</sup>

The measure of educational performance (the dependent variable) used for the analysis is based on the LFL program staff's assessment of their students' overall grades (on all subjects). The assessment was based on the 1999 mid-year school report results of the student.<sup>5</sup> Student academic results were classified as: i) below average ii) average to good iii) outstanding. Student codes allowed the matching of students' academic results to family background information contained in the LFL database. Using school report data is limited in that there may be variation between schools in assessing and reporting student results. While it would be preferable to use standard literacy and numeracy test scores of students, such as those now conducted in several state jurisdictions, this data was not available at the time student results were collected.

One option was to restrict the sample to students in senior secondary school (Years 11 and 12) where a greater degree of standardisation in school reporting procedures exists. This would lead to another perhaps more serious limitation, namely, the censoring problem that may occur due to the fact that poorer performing or disadvantaged students generally leave school earlier than better performers (see Portes and MacLeod, 1996: 272). In order to test for a possible drop-out bias, we also ran separate models for senior secondary and junior/secondary students.

The data allowed us to control for the influence of several factors on student educational performance. With respect to individual characteristics, these included sex, age (as proxied by school level), unexplained absences and ethnic background.

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3 Each *Learning for Life* Education Support Worker has a caseload of 235 students from between 110 to 115 families. The Support Worker's role covers a wide range of duties and at any given time he/she may act as: assessor; advocate/mediator; supporter/adviser; referral/information source; research information source. For further details on the history and operation of the program, see Zappalà and Parker (2000).

4 At the end of 1999, there were 6 937 students on the program, of whom 41 per cent were in primary school, 49 per cent in junior secondary, nine per cent in senior secondary and one per cent at university. Data on academic results for 1 416 students was not available as some students joined the program after the data collection exercise in August, and some of the recently established LFL centres did not participate in the data collection exercise. Some background data (e.g., parental education) for an additional 2 192 students was missing or not recorded. The results reported in this paper reflect the findings for those students (3 329) on whom data was complete. Preliminary analyses indicated no systematic differences between these two groups of students with regard to the proportion of students getting outstanding school results or with regard to the individual, family, and contextual characteristics of the students (e.g., gender, family composition, parental education level).

5 Students on the program are required to send copies of their school reports to their Education Support Worker twice a year. This data is collected for administrative purposes. As well as data on academic performance, data were also collected on student application, absenteeism rates and the degree of contact with LFL caseworkers. For further details see Zappalà and Parker (2000).

In order to test for any variation in the educational performance of students from NESB, students were grouped according to the following regional categories based on the birthplace of parents: Australian born; English-speaking country; Southern Europe; other Europe; Asia; Middle East or North Africa; Other Africa; Central and South America and Pacific Islands (see Marks et al., 2000: 24). Higher percentages of students from all NESB groups, with the exception of Middle East or North Africa and Other Africa, achieved outstanding results relative to the Australian born or those from English speaking backgrounds. With the exception of those from Middle Eastern/African backgrounds, small cell sizes for the other individual ethnic groups precluded analysing each ethnic group separately. Those from Middle Eastern and African backgrounds ( $n = 217$ ) were re-coded as a new variable for the multivariate analysis with all other non-English speaking background groups collapsed into a combined NESB variable ( $n = 363$ ). (See Table 1).

Family structure controls included whether the student was from a one or two-parent household. Even though all students were from financially disadvantaged backgrounds, socio-economic status variables included whether the main source of parental income was from employment or social security, and the educational attainment of parents.<sup>6</sup> Controls were also included for whether the student/family lived in a metropolitan or non-metropolitan area, as well as housing type whether public or private housing. As all students in the sample were in non-selective state schools, school type was controlled for.

Table 1 presents a profile of the students in the sample. They were almost evenly divided between male and female students. The majority of students was in either primary school (40 per cent) or junior secondary school (52 per cent), of English speaking background (83 per cent) and living in a metropolitan area (55 per cent). Overwhelmingly, these students lived in households that were dependent on social security payments (88 per cent) as the main source of income and had parents who had not completed Year 12 (66 per cent). There was a slightly higher tendency for students to come from one-parent families (58 per cent) as opposed to two-parent families (42 per cent) and to live in private (51 per cent) rather than public (49 per cent) housing.<sup>7</sup> With respect to school performance, the majority of students attained average results (70 per cent). For the remaining students, 13 per cent attained poor results while 17 per cent achieved outstanding results.

#### **4 Odds Ratio Analysis**

The extent to which particular defining characteristics affected the likelihood of attaining outstanding results is presented in terms of odds ratios in Table 2. Girls, for instance, were 1.7 times more likely to achieve outstanding results compared to boys.

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6 Data on income levels were not available so it was not possible to test whether household income levels differed significantly according to main source of income. Information on parental education level was only available for the highest educated parent. Confidentiality requirements precluded identification of this parent's sex. Discussions with program staff, however, indicated that for one-parent families (58 per cent of the sample) parental education level data is for the mother in the majority of cases.

7 The majority of those in private housing were in private rental accommodation.

**Table 1: School Results by Various Characteristics**

	Poor %	School Average %	Results Outstanding %	N	Total %
<i>Total students in sample</i>	13	70	17	3329	100
<b>Characteristics</b>					
<i>Sex</i>					
Male	16	71	14	1612	48
Female	9	70	21	1717	52
<i>School level</i>					
Primary	11	74	15	1321	40
Junior secondary	13	67	18	1722	52
Senior secondary	12	65	23	286	9
<i>Absences</i>					
No unexplained absences	12	69	19	2871	86
Had absences that were unexplained	13	80	7	458	14
<i>Ethnic Background</i>					
Australian born/English speaking	13	71	16	2752	83
Non-English speaking	9	58	32	360	11
Middle East/African	9	78	12	217	6
<i>Location</i>					
Metropolitan	14	67	19	1834	55
Rural	10	75	15	1495	45
<i>Family Composition</i>					
Two-parent family	13	69	19	1403	42
One-parent family	13	71	16	1926	58
<i>Parental main source of income</i>					
Social Security	13	70	17	2921	88
Employment	11	69	20	408	12
<i>Parental education level</i>					
Less than year 10	18	73	9	580	17
Completed year 10, not year 12	13	72	15	1637	49
Year 12	10	70	20	413	12
TAFE/other post-secondary	11	73	16	440	13
University	5	51	44	259	8
<i>Housing Type</i>					
Public housing	15	70	15	1633	49
Private housing	9	71	20	1696	51

Older students had improved odds of performing better in school than younger students, with students in senior secondary school being 1.5 times more likely than primary school students to achieve outstanding results. Students in junior secondary students were only 1.1 times more likely to achieve outstanding results compared to students in primary school. The difference between senior and primary school students suggest that a selection bias is occurring with poorer performing or



disadvantaged students leaving school earlier than better performers. The level of schooling was controlled for in the multivariate analysis and is discussed below.

Dichotomous comparisons between those with no unexplained absences and those with unexplained absences, revealed that those students with no unexplained absences were three times more likely to attain outstanding results compared to those students with at least one unexplained absence. The odds of achieving outstanding results also significantly increased for students with parents who had high education levels. Compared to students whose parents had not completed Year 10, students whose parents had completed Year 12 were 1.2 times more likely to achieve outstanding results and students whose parents had a university education were 4.5 times more

**Table 2: Odds Ratio of Getting Outstanding Results**

<b>Characteristics</b>	<b>Odds Ratio</b>
<b>Sex</b>	
Female	1.7
<b>School Level</b>	
Junior secondary	1.1
Senior secondary	1.5
<b>Unexplained absence</b>	
None	3.0
<b>Ethnic Background</b>	
Non English speaking	2.6
Middle East/African	.66
<b>Location</b>	
Metropolitan	1.3
<b>Family Composition</b>	
One-parent Family	.84
<b>Parental income source</b>	
Employment	1.2
<b>Parental education level</b>	
Completed Year 10, not Year 12	.83
Year 12	1.2
TAFE/other post- secondary	.83
University	4.5
<b>Housing Type</b>	
Private Housing	1.4

Notes: 1) Students on the Learning for Life Program who received outstanding results.

2) An odds ratio of 1 means there is no difference between the comparison groups.

Based on the categorisation of ethnic background described earlier, students from NESB (excluding Middle Eastern/Africa) were almost three times as likely as other students to gain outstanding results. Students from Middle-Eastern/African backgrounds were less likely than other students to achieve outstanding results.

For students living in a household where the main source of income was from employment earnings the odds of achieving 'outstanding' results was only 1.2 times higher than for students from households where the main source of income was from social security benefits. Of slightly more importance than income source appeared to be the type of housing that students lived in, with those living in private housing 1.4 times more likely to achieve outstanding results compared to those living in public housing.

Similarly, students from metropolitan areas were 1.3 times more likely to achieve outstanding results compared to those living in non-metropolitan areas. Students from one-parent families were slightly less likely to achieve outstanding results compared to those from two-parent families.

## 5 Multivariate Analysis

In order to determine the extent to which particular factors influence the achievement of outstanding results while keeping the effects of other variables constant, we ran a binomial logistic regression on academic results (1 if the student attained outstanding results and 0 otherwise). This approach allows us to estimate the 'pure' effects of, for instance, student sex, adjusted for the effects of other variables. The interpretation of the model is based on the value at which the non-linear independent variables are set. The independent variables were set at their mean (standard convention).<sup>8</sup>

Table 3 displays the logistic regression results estimating the extent to which individual, family, behavioural and socio-economic factors contribute to students' achieving outstanding results. The model Chi-square statistic was highly significant ( $\chi^2 = 257.404$ ,  $df = 14$ ,  $p < .0001$ ) while the Hosmer and Lemeshow test revealed a good fit between the data and the model (Goodness-of-Fit  $\chi^2 = 6.1638$ ,  $df = 8$ ,  $p = .6289$ ).

With respect to the independent variables, the Wald test of significance showed the coefficients were statistically significant for sex, ethnicity (with the exception of those students from Middle Eastern/African backgrounds, students from NESB were more likely to achieve outstanding results), unexplained absences, parent's educational attainment, housing type, and student age as reflected by school level. Family structure (i.e. two-parent vs. one-parent family), the main source of family income, and geographical location did not significantly predict school performance outcomes.

We also tested for any interactive effects between some of the variables of interest. No interactive effects were significant, for example, the predicted probability of achieving outstanding results was the same for boys from a one-parent family as it was for girls from a one-parent family. In other words, the findings do not support the argument that one-parent households may have relatively more detrimental effects on boys than girls.

To facilitate interpretation of the logit model, the Beta coefficients in Table 3 were converted into predicted probabilities. With all variables held constant at their mean, an 'average' student would have a 15 per cent predicted probability of achieving outstanding results. Table 4 shows the change in predicted probabilities of attaining outstanding results based on each defining characteristic. With all other variables held

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8 Using a different value (e.g. the median) may alter the interpretation.

constant at their mean, female students had a significantly higher predicted probability of achieving outstanding (18 per cent) results than male students (12 per cent). Similarly, at a predicted probability of 19 per cent, senior secondary students performed better than younger students (predicted probabilities were 16 per cent for junior secondary and 13 per cent for primary school students). Those with no unexplained absences had higher predicted probabilities (17 per cent) compared to those with unexplained absences (14 per cent). Students from NESB also had a significantly higher predicted probability (23 per cent) of outstanding results than students from either an English-speaking (14 per cent) or Middle Eastern/African background (eight per cent).

With regard to other significant characteristics, a student who lived in private housing had a four percentage point higher predicted probability (17 per cent) of attaining outstanding results than a student who lived in public housing (13 per cent). Generally, as the parental level of education increased a student's predicted probability of attaining outstanding results also increased. A student whose parents were university educated had a 39 per cent predicted probability of achieving outstanding results while the predicted probability of attaining outstanding results was only nine per cent for a student whose parents had not completed Year 10. In the case of parents with a Year 10 education, a student's predicted probability of achieving

However, for those students whose parents had completed a TAFE qualification, their predicted probability of achieving outstanding results dropped to 14 per cent.

In the preceding analysis the influence of individual, family and socio-economic characteristics have been interpreted with respect to the average student (i.e. with all other variables set at their mean). However, setting the values of the independent variables to that of an actual student allows for a more meaningful interpretation of the influence these variables have on achieving outstanding results. In the following hypothetical examples, the independent variables have been set to reflect the individual and family characteristics typical of large groups of actual students in the sample. These examples illustrate the influence that multiple factors have on a student's predicted probability of achieving outstanding results.

Example 1: A student in senior high school from a two-parent family financially dependent on employment income, from a non-English speaking background, who has no unexplained absences, lives in private housing in a metropolitan area, with one parent having a university education.

Predicted probability of achieving outstanding results: male 63 per cent; female 74 per cent.

Example 2: A student in senior high school from a two-parent family financially dependent on employment income, from an English speaking background, who has one unexplained absence, lives in public housing in a metropolitan area with one parent who completed TAFE qualifications.

**Table 3: Logistic Regression Equation Predicting Outstanding Results**

<i>Variables</i>	$\beta$	<i>SE</i>	<i>Wald</i>	<i>Sign [p]</i>	<i>Odds Ratio [Exp (<math>\beta</math>)]</i>
Female	.537	.098	30.0	.000	1.711
NESB	.587	.148	15.8	.000	1.799
Middle East/Africa	-.639	.230	7.7	.006	.528
Unexplained absences	-.201	.046	19.3	.000	.818
Private housing	.283	.102	7.7	.005	1.33
Employment income	.111	.149	0.6	.456	1.12
Metropolitan location	.196	.105	3.5	.061	1.22
One-parent family	.038	.105	.1	.716	1.04
<i>Parental education</i>					
Completed Year 10, not 12	.601	.162	13.7	.000	1.82
Year 12	.711	.195	13.3	.000	2.04
TAFE/other post-secondary	.509	.201	6.4	.011	1.66
University	1.857	.202	84.6	.000	6.40
<i>School level</i>					
Junior secondary	.250	.104	5.8	.016	1.28
Senior secondary	.425	.168	6.4	.012	1.53
<i>Constant</i>	-2.94	.202	212.6	.000	

*Notes:*

- 1) Students on the Learning for Life Program who received outstanding results.
- 2) No interactive effects were significant.
- 3) A second model was run with senior secondary students excluded from analyses to determine the extent to which level of schooling impacted on the results. The beta co-efficients and standard errors held constant across both models.
- 4) Another model was run using 'unexplained absences' as a categorical variable. This model Chi-square was significant but the Goodness-of-fit  $\chi^2$  was not. For the purposes of multivariate analyses, therefore, 'unexplained absences' was entered as a continuous variable. In order to test for a possible early school leaver bias (i.e. poorer performing or disadvantaged students generally leave school earlier than better performers), we also ran separate models for senior secondary and junior/secondary students. The beta coefficients and standard errors held constant across both models suggesting that the factors influencing academic performance were consistent across the different school levels.<sup>9</sup>

outstanding results was 15 per cent. This increased to 17 per cent for those students with parents who had completed Year 12.

Predicted probability of achieving outstanding results: male 13 per cent; female 20 per cent.

<sup>9</sup> These results are available on request from the authors.

**Table 4: Effects of Student Characteristics upon the Predicted probability of Attaining Outstanding Results**

<i>Characteristics</i>	<i>Predicted probability (%)</i>	<i>Percentage Difference</i>
<i>Sex</i>		
Male	12	
Female	18	6
<i>School level</i>		
Primary	13	
Junior secondary	16	3
Senior secondary	19	6
<i>Unexplained absences</i>		
No unexplained absences	17	
One unexplained absence	14	-3
<i>Ethnic Background</i>		
Non English Speaking	23	
Middle East/Africa	8	-15
Australian born/English speaking	14	-9
<i>Location</i>		
Metropolitan	16	
Rural	14	-2
<i>Family Composition</i>		
Two-parent family	15	
One-parent family	15	0
<i>Parental main source of income</i>		
Social Security	15	
Employment	16	1
<i>Parental education level</i>		
Less than Year 10	9	
Completed Year 10, not year 12	15	6
Year 12	17	8
TAFE/other post -secondary	14	5
University	39	30
<i>Housing Type</i>		
Public housing	13	
Private housing	17	4

Notes: 1) Students on the Learning for Life Program who received outstanding results.

2) All other variables are set at mean values.

Example 3: A student in primary school from a one-parent family financially dependent on Social Security benefits, from an English speaking background, with three unexplained absences, lives in public housing in a metropolitan area with one parent who did not complete Year 10.

Predicted probability of achieving outstanding results: male 4 per cent; female 6 per cent.

Example 4: A student in junior secondary school from a one-parent family financially dependent on Social Security benefits, from an English speaking background, with three unexplained absences, lives in private housing in a rural area with one parent who did not complete Year 10.

Predicted probability of achieving outstanding results: male five per cent; female eight per cent.

## **6 Discussion and Policy Implications**

The above results raise several implications for public policy with respect to education and human services more generally. A key finding is that even within a group with considerable financial disadvantage, socio-economic status as reflected by the level of parental education, was a key predictor of student academic achievement. This finding lends support to the notion advanced by some studies that the social and the economic components of the socio-economic status equation may have distinct and separate influences on educational outcomes. While both components are important, social factors, such as parents' educational attainments, have been found to be more significant than economic factors in explaining children's educational outcomes and among the most replicated results in child development studies (Shonkoff and Phillips, 2000). Higher status families, some researchers suggest, foster a higher level of achievement and provide higher levels of psychological support for their children (Williams, 1987; Williams et al., 1993). Our findings suggest that this is the case even within financially disadvantaged families.

Most government approaches to addressing the effects of low SES in education are aimed at the economic redistribution of resources and direct financial assistance (Graetz, 1995). Some have therefore concluded that 'there is some danger of recommending cures for socio-economic disadvantage when the malady is social rather than economic' (Williams et al., 1993: 23). While not wishing to discount the importance of financial assistance (whether to schools or families), policies and programs that also assist parent/s in providing appropriate psychological and educational support for their children should therefore be encouraged. The level of parental education, for instance, has been found to be strongly associated with factors such as the home literacy environment, parents' teaching styles and investing in resources that promote learning such as quality child care, educational materials and visits to museums (Shonkoff and Phillips, 2000). While families with low income face greater hurdles in achieving effective parenting which in turn often harms their children's development and educational achievement (Berk, 1997: 549), our findings support the thesis that low income alone is not the only factor.

The findings are therefore consistent with the current policy direction at state and federal level with respect to early intervention programs such as *Families First* (NSW) and the recent *Stronger Families and Communities Strategy* initiated by the federal Department of Family and Community Services. While not aimed solely at educational issues, these programs are designed to assist parents in preparing their

children for school and provide appropriate community based services for a range of parenting based needs, support and advice (Calvert, 2000; Newman, 2000).

In contrast to much publicised recent research and media comments on the negative effects of one-parent families on children, however, our findings do not support such a conclusion. Neither do our findings support the argument that one-parent households may have relatively more detrimental effects on boys than girls. Consistent with other studies, however, our findings do confirm the existence of a significant gender gap in educational achievement among students from low socioeconomic status. This suggests that the current policy focus on improving the performance of boys at school should also ensure that any programs cater for boys from low SES families (Kemp, 2000; Arndt, 2000; West, 2000). Also consistent with other recent studies, our findings suggest that some ethnic groups seem to be more disadvantaged than others in terms of educational outcomes (Cahill, 1996; Dobson et al., 1996).

Finally, while geographical location was not a significant predictor of academic achievement, whether children live in private or public housing was found to be significant even after controlling for other factors. Whether housing type is acting as a proxy for neighbourhood influences, such as lower levels of local social capital in some public housing estates or lower levels of economic resources, is unclear. Using the Index of Relative Socio-Economic Disadvantage developed from the 1996 Census, 36 per cent of students in the sample, for instance, lived in areas that ranked in the bottom quartile of this index, with just under a quarter in the next quartile (ABS, 1998). In any case, the significance of housing type suggests that public policy approaches to addressing disadvantage which are neighbourhood and community based, such as place management initiatives should be encouraged (Zappalà and Green, 2001).

## 7 Conclusion

Although there is a vast literature on the relationship between family socio-economic status and the academic performance of children, the factors that may influence educational outcomes *within* particular SES bands have not been as exhaustively examined. This paper presented new data on over 3 000 students from financially disadvantaged backgrounds to estimate the extent of socio-economic, family, individual and contextual factors on school educational performance. Despite some data limitations, our model specification and results were robust. The results from the logistic regression indicated that sex, unexplained absences, ethnicity, parental educational attainment, housing type and student age as reflected by school level were all statistically significant variables and predictors of academic performance. In contrast, family structure, the main source of family income and geographical location did not significantly predict variation in school performance once other factors were controlled for.

The finding that, even within a group with considerable financial disadvantage, socio-economic status as reflected by the level of parental education was a key predictor of student academic achievement raises several policy implications.

In brief, it supports the notion that the social and the economic components of the socio-economic status equation may have distinct and separate influences on educational outcomes. While financial assistance to schools and families in need is

important, policies and programs that assist low-income parent/s in providing appropriate psychological and educational support for their children should also be promoted. Low income is not the only factor that harms effective parenting and children's development and educational achievement. The findings also lend support to policies that address issues of boys' behavioural problems, the needs of some groups from NESB, as well as neighbourhood and community based frameworks for addressing disadvantage.

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