

VIA04495

Gender differences in the first year of a longitudinal study of adolescent emotional well-being and academic outcomes

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Introduction

This paper reports on the gender patterns in the initial data gathered as part of the Illawarra Social, Emotional and Academic Longitudinal Study (ISEALS). The aim of this longitudinal study is to identify the factors that put adolescents at risk for academic and emotional problems. In particular, we are seeking to establish which social and psychological variables are most powerfully related to academic and emotional outcomes among youth.

Although the retention rates of Australian students from years 7 to 12 have steadily increased over the last two decades, we still lag behind countries such as the United States, Canada, and Japan (Australian Bureau of Statistics, 2001). In 2001 the Australian retention rate from Year 7 to Year 12 was 73.4%. There are also significant gender differences with the retention rates for girls being somewhat higher than for boys. In 2001 the retention rate to Year 12 for girls was 79.1%; for boys it was only 68.1% (ABS, 2001).

Likewise, there are also notable gender differences with respect to academic performance. Recent data show that girls have caught up with boys and now outperform them in most Year 12 subjects (Collins, Kenway & McLeod, 2000; Forgasz & Leder, 2001). Thus, there are some notable gender differences in terms of progression through to Year 12 and ensuing performance measures.

Academic underperformance in students is closely related to their emotional well-being and general psychological adjustment. Evidence shows that unhealthy emotions can undermine attention and memory. Depression leads to the biased recall of information (Forgas, 2001), while anxiety and worry decrease working memory capacity, making it particularly hard for people to perform complex cognitive tasks (Eysenck, 1992; MacLeod & Donnellan, 1993). Hostility may make it difficult for students to get along with teachers and fellow students (Heaven, 2001). In sum, evidence suggests that academic underachievement is linked to emotional maladjustment.

Factors Influencing Emotional and Academic Outcomes

Based on a thorough review of the literature on adolescents, we have identified a number of factors that are potentially important in predicting well-being and academic success. These include individual factors (student's attitudes to education, personality, attributional style, a student's sense of hope), family experiences as reported by the student, socio-economic background of the family, and environmental factors such as peer group influences.

Individual factors: Personality

Evidence suggests that particular personality and individual difference factors have an important impact on the school performance and later emotional well-being of young people. Self-esteem has an impact from the earliest days of high school. The transition to high school is an exciting time for young people, but it is also a time that may set the scene for later

adjustment and performance problems. For many students, the new culture of high school may be associated with stress and loss of self-esteem (Yates, 1999). Moving to a large new school, for example, may serve to reduce self-esteem. While this initial dip in self-esteem may be overcome for most students (Gross, 1997), some students retain low self-esteem, which may be associated with negative attitudes to school and teachers, truancy, and poor school performance.

Several other personality domains have also been said to predict school performance and emotional well-being. For example, given that individuals high on conscientiousness have been described as “persistent” and “well-organized” (Costa & McCrae, 1985), it is to be expected that conscientiousness will predict academic outcomes. We found that this factor was predictive of positive school attitudes and higher self-rated academic performance (Heaven et al., 2002). Nelson-LeGall (1990) also found that underachievers were more likely to resort to inefficient work strategies. Low conscientiousness has also been found to be related to increased levels of anti-social and risk-taking behaviour among youth (Heaven, 1996; Mak, Heaven & Rummery, 2003).

Eysenck’s toughmindedness factor is also an important predictor of academic outcomes and emotional well-being (Eysenck & Eysenck, 1985). For instance, Goh and Moore (1978) found a negative correlation between toughmindedness and grade point average while Aluja-Fabregat and colleagues (1999) found that students who demonstrated interest in school were low on toughmindedness. These findings appear to be part of a broader pattern in which high toughmindedness is associated with low motivation and poor work habits (Furnham & Medhurst, 1995) and poor adjustment (Furnham & Heaven, 1999). Indeed, Eysenck’s toughmindedness measure is predictive of a range of misdemeanours and related to various indices of maladjustment including delinquency and anti-social behaviours (Heaven, Newbury & Mak, in press), aggression and hostility (Matthews & Deary, 1998).

Empirical evidence shows that being hopeful leads to enhanced outcomes in a number of different ways (Snyder, 2000; Snyder, Rand & Sigmon, 2002). This suggests that if students are hopeful, their expectations about success are likely to be raised, thereby increasing the probability that they will indeed be successful. Conversely, if students expect to fail and expect to have low emotional competencies, this expectation is also likely to be met.

Family factors: Parenting Style

Parenting styles are related to the academic achievement of adolescents. Research indicates that authoritative parenting is most strongly associated with academic achievement, while authoritarian and permissive styles are not (Cohen & Rice, 1997). In fact, authoritative aspects of parenting facilitate rather than simply accompany academic performance (Steinberg et al., 1989). Steinberg compared different parenting practices such as authoritative parenting, level of parental involvement in school activities, and encouragement of their children to succeed. It was found that authoritative parenting was by far the best predictor of later school success among students. Moreover, parental encouragement and school involvement was greatest among authoritative parents. Lamborn and colleagues (1991) found authoritative parenting to be associated with emotional well-being and academic competence in youth, while Shucksmith and colleagues (1995) found positive attitudes to school among children with authoritative parents.

Method

Participants

Participants were 565 students in Year 7 from five high schools in the Wollongong Catholic diocese. There were approximately equal numbers of males and females in the sample size and the modal age was 12 years.

Instruments

Each participant completed a questionnaire that contained the following components:

1. *Children's Hope Scale* (Lopez, Ciarlelli, Coffman, Stone, & Wyatt, 2000; Snyder et al., 2002). This scale consists of six items and has demonstrated reliability and validity. Responses were indicated on a 6-point Likert scale ranging from "none of the time" (scored 1) to "all of the time" (6). In our study, Cronbach's coefficient alpha was .82.
2. *Personality*. A number of different personality measures were used including Rosenberg's (1979) self-esteem measure, which has ten items measuring global self-esteem (e.g. "Generally I feel satisfied with myself"). Items were coded 1 ("yes") or 0 ("no") and negative items were reverse-scored. This measure has demonstrated validity and on the present occasion alpha coefficient was .82. Corulla's (1990) 12-item revised version of the toughmindedness scale for children was also included. A sample item is "Do you sometimes bully and tease other kids?" Items were coded 1 ("yes") or 0 ("no") and negative items were reverse-scored. On this occasion, the alpha coefficient was .66. Conscientiousness was measured with a 16-item instrument devised by Mak and colleagues (2003). Sample items include "I like to do things perfectly", "I am a well organised person", and "I pay attention at school". Responses were indicated on a 5-point Likert scale from "not at all like me" (1) to "a lot like me" (5), while negative items were reverse-scored. On this occasion, the alpha coefficient was .85.
3. *Parental Authority Questionnaire* (Buri, 1991). This 30-item measure assesses adolescents' perceptions of parenting style. Separate measures are gained for mother and father and the three styles of permissive, authoritarian, and authoritative. Responses were indicated on a 5-point Likert scale from "strongly disagree" (1) to "strongly agree" (5). Negative items were reverse-scored. On the present occasion the following alpha coefficients were obtained: permissiveness = .71, authoritarian = .80, and authoritative = .76.
4. *Attitudes to education*. This set of items developed by Furnham and Gunter (1989) measures students' attitudes to school.

Procedure

Consent was obtained from the Wollongong Diocese, the high schools, the Year 7 students and their parents. Questionnaires were administered during school-time in class groups supervised by one of the researchers or their teacher. Students completed the questionnaires individually and anonymously but codes were included so that the students' responses could be matched with the basic skills measures and school grades (to be collected and analysed in December 2004).

Results

Gender differences on the measured variables were tested by conducting a one-way MANOVA with gender as the independent factor. This revealed a significant multivariate effect: Wilks' Lambda = .839, $F = 6.184$, $p < .000$. Univariate analyses on the dependent variables were conducted with gender as the independent factor. Table 1 displays the complete set of variables and their level of significance. As this table illustrates, males scored significantly higher than females on the toughmindedness scale and negative affect (anxiety and depression). The females scored significantly higher than the males on conscientiousness, hope, mother's authoritative parenting and attitudes to schooling. Despite these significant differences, only a moderate amount of the variance was explained by the measured variables (16%). The greatest proportion was toughmindedness which accounted for 7.7%, while conscientiousness accounted for 2.8%.

Table 1: Gender differences on a range of measures illustrated in univariate F values, level of significance and variance

	F	Sig.	Partial Eta Squared
Self-esteem	3.419	.065	.006
Conscientiousness	16.069	.000	.028
Hope	5.083	.025	.009
Anxiety	12.460	.000	.022
Aggression	3.510	.062	.006
Depression	12.008	.001	.021
Joviality	3.205	.074	.006
Mother Permissive Style	.271	.603	.000
Mother Authoritarian	.639	.424	.001
Mother Authoritative	9.089	.003	.016
Father Permissive Style	.526	.469	.001
Father Authoritarian	2.670	.103	.005
Father Authoritative	.495	.482	.001
Toughmindedness	47.196	.000	.077
Attitudes to Education	8.625	.003	.015

Discussion

This paper presents the patterns of gender differences on a range of personality and family measures of young adolescents. These are preliminary data and cannot yet be related to the academic and emotional outcomes that are the key interest in our longitudinal study. Despite this limitation, though, the patterns of difference obtained in the first wave of data collection are similar to those that have been associated with differential social, emotional and academic outcomes of young people.

It is well-established that females are out-performing males academically and therefore it is not surprising that the variables positively associated with higher academic attainments are those where the females in our study significantly outscored their male colleagues. Conscientiousness was the most significant difference favouring females in our study and this has been associated with desire for achievement (Costa & McCrae, 1985). The literature (Austin & Vancouver, 1996; Snyder et al, 2002) has also associated the characteristics of conscientiousness with hope, which was also significant for females in our study. Together, these characteristics are linked with setting

clear goals, self-discipline, diligence and persistence, all of which contribute to academic attainment. They are also positively related to emotional well-being.

The positive characteristics of conscientiousness and hope coincide with the females in our study also scoring higher on positive attitudes to school and mother's authoritative parenting style. This is a style of parenting that may be regarded as a democratic style as the parents set clear boundaries and expectations of behaviour and discuss rules and decisions with their children rather than imposing rules in a dictatorial manner. Positive attitudes to school and authoritative parenting are associated with higher scholastic achievement (Bronson, 2000; Reeve, Bolt & Cai, 1999) and less risk for delinquency (Mak et al, 2003).

By contrast, males scored significantly higher than females on the toughmindedness measure and, in fact, this was the most significant difference of all the variables measured. High scores on toughmindedness are associated with poorer academic performance and emotional functioning (Heaven et al, in press). The males in our study also scored significantly higher on anxiety and depression, which are also associated with lower academic performances and increased risk for negative emotional outcomes.

In conclusion, the initial data from our study reveal that the gender patterns on a range of personality and family measures align with those most closely associated with academic outcomes and emotional well-being. At this stage of the data collection, we cannot confirm such a relationship but as data are collected over the following five years, we hope to be able to determine the combination of factors that will best predict academic and emotional outcomes. We will continue to monitor gender differences because the differential outcomes of students may not be the same for males and females, which would imply the need for different interventions to address students at risk.

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