

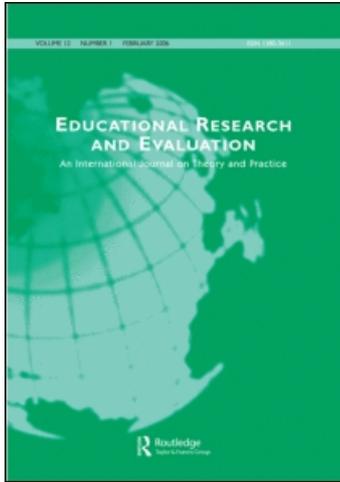
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On Being Gifted, but Sad and Misunderstood: Social, emotional, and academic outcomes of gifted students in the Wollongong Youth Study

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This research examined the relationships among personality factors, social support, emotional well-being, and academic achievement in 65 gifted secondary students, a sample drawn from a longitudinal study of over 950 students. The research demonstrated that, compared to their nongifted peers, gifted students had significantly higher academic outcomes for all subject areas except Geography and Physical Education. Teachers rated the gifted students as being well-adjusted and less likely to have behavioural or emotional problems than nongifted students. The gifted students, however, reported feeling more sad and less satisfied with their social support than their nongifted counterparts. There were no significant differences in terms of self-esteem, trait hope, problem orientation, or attitudes towards education. Within the gifted sample, the research found that the students who were most likely to get poor grades were those who scored high in psychoticism and low in conscientiousness, trait hope, joviality, and in attitudes towards schools. Interestingly, self-esteem was entirely unrelated to gifted performance.

Introduction

Adolescence is characterised as a time of great change and upheaval in both the academic and popular literature. Poised between childhood and adulthood, adolescents undergo a range of physical, psychological, social, and emotional changes that can make it a difficult time for the young people themselves, as well as for the adults who care for them. The developmental issues that face all adolescents are comprehensively documented in the research literature. What is not as clear, however, is how giftedness interacts with the pressures of adolescence. Does

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giftedness act as a protective factor for young people or does it exacerbate this critical developmental phase?

The specific issues for gifted adolescents have not been fully explored in the literature, because most research on giftedness has focused on younger children (Bireley & Genshaft, 1991; Dixon & Moon, 2006). Without undermining the importance of the research on gifted children, there is a need to expand our understanding of the particular experiences of gifted adolescents as it is another critical developmental point in the translation of gifted potential into performance or talent (Gagné, 1985, 2003). Over the last 2 decades, there has been growing acceptance in Australia of the developmental conceptions of giftedness proposed by Tannenbaum (1983, 2003) and Gagné (1985, 1995, 2000, 2003), which highlight the role of a range of catalysts that are both internal and external to gifted individuals in the realisation of their talents. Gagné's model also draws attention to the importance of catalysts in the realisation of potential, which are categorised under the broad headings of intrapersonal factors and environmental factors. More specifically, Gagné's (2000, 2003) model emphasises the critical role played by factors such as physical characteristics, motivation, effort, personality, milieu, people, and chance in the development of talent.

There is also a need for longitudinal research to more clearly understand the developmental trajectories of gifted youth into adulthood. There have been a small number of longitudinal studies of gifted students that have demonstrated the interplay of personality and educational interventions in their emerging talent, but most of these have focused on the highly gifted (e.g., Brody & Benbow, 1987; Brody, Lupkowski, & Stanley, 1988; Brody & Stanley, 1991; Gross, 2004; Hollingworth, 1942). The Wollongong Youth Study was designed to track a cohort of 950 adolescents from the 1st year of high school (Year 7) through to their final years of schooling and early adulthood and, as such, will provide valuable longitudinal data on the development of the gifted students who are part of that cohort.

Social and Emotional Outcomes

Moon and Dixon (2006) describe adolescence as the time when identity development and relationship building are critical. Therefore, a focus on social and emotional outcomes for gifted adolescents is warranted. Several researchers have singled out identity formation as being as important a consideration for gifted adolescents as it is for all adolescents (Coleman & Cross, 2001; Hébert, 2000; Zuo & Cramond, 2001; Zuo & Tao, 2001). The importance of gifted adolescents developing healthy identity status was emphasised by the researchers, but Coleman and Cross (2001) argued further that giftedness added to the stresses faced by gifted adolescents as they had to deal with conflicting societal expectations and demands. Hébert and Kelly (2006) proposed that the successful resolution of these challenges to identity formation may distinguish between gifted achievers and underachievers: "If an intelligent young person is able to resolve the question of 'Who am I?', then it seems logical that student will also be able to resolve the question of 'Where do I want to go in life?'" (p. 46).

Neihart (1999) posited that the psychological well-being of gifted adolescents is a function of the educational setting, the nature and degree of giftedness, and personality characteristics. Although there are many features of educational settings that have been the topic of research, a large proportion of the literature in gifted education has been dedicated to ability grouping. Meta-analyses of this research conducted by Rogers (1991) and Kulik (1992) have demonstrated positive academic outcomes for gifted students, particularly when the ability grouping includes a differentiated curriculum. The research on the gifted students' affective outcomes is not as strong, and some researchers have suggested that attention needs to be given to gifted students' affective needs in full-time gifted settings (e.g., Craven & Marsh, 1997).

Interacting with the educational setting, the nature and degree of giftedness also have an impact on the social and emotional outcomes for gifted adolescents. The literature suggests, for example, that the highly gifted are more likely to feel socially isolated (Gross, 2004; Hollingworth, 1942; Neihart, 1999; Sheldon, 1959; Silverman, 1993). Other research has found that students who are verbally gifted are lower in self-esteem than those who are mathematically gifted (Dauber & Benbow, 1990; Neihart, 1999). By contrast, research by Baker (1995) and Cross, Cassady, and Miller (2006) found no differences between gifted adolescents and their nongifted peers on depression, stress, and suicide ideation. Worryingly, though, approximately 10% of Baker's gifted and nongifted participants reported that they experienced serious levels of depression.

The third factor that is significant for the social and emotional outcomes of gifted adolescents relates to personality characteristics. It is clear that gifted adolescents are not only different from each other in the type and degree of their giftedness but also in various aspects of their personality. Although personality may seem to be more closely linked with social and emotional outcomes, researchers are also demonstrating how ability may be translated into achievement (Chamorro-Premuzic & Furnham, 2003). The research consistently demonstrates that Psychoticism (Gigantic Three) and Conscientiousness (Big Five) are the most significant personality domains associated with academic performance. High levels of psychoticism have been consistently associated with poor work habits and lower academic performance (Eysenck & Eysenck, 1985; Heaven, Mak, Barry, & Ciarrochi, 2002; Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005), whereas conscientiousness is associated with positive attributes and higher academic performance (De Raad & Schouwenburg, 1996; Furnham, Chamorro-Premuzic, & McDougall, 2003; Heaven et al., 2002; Wolfe & Johnson, 1995).

The interplay of these three factors argues for different educational responses to different "types" of gifted adolescents, and a goodness-of-fit hypothesis may be more appropriate given the contradictory evidence in the research. Coleman (1995), for example, argues that there is no single best way to cater for gifted individuals. The notion of goodness-of-fit, however, is complicated by the fact that social-emotional outcomes and academic outcomes may be differentially affected by the three factors of educational setting, type and degree of giftedness, and personality.

Academic Outcomes

The academic underachievement of gifted students is also of concern to educators and researchers. Although the literature on gifted underachievers indicates that the pattern of underachievement begins in the elementary or primary school years, it is well-established by high school (Assouline & Colangelo, 2006; Lau & Chan, 2001; McCoach & Siegle, 2003; Reis & McCoach, 2000; Richert, 1991; Whitmore, 1980) and therefore an important consideration in the education of gifted adolescents. The etiology of underachievement is complex with individual, family, and school factors contributing variously to its expression.

Researchers have emphasised the importance of social support in academic outcomes for gifted adolescents. Csikszentmihalyi, Rathunde, and Whalen (1993), for example, explored the patterns of support in the families of talented teenagers and delineated three types: supportive (nurturing and responsive), autonomous (encouraging independence), and complex (providing support and encouraging autonomy). They found that students who performed best at school were those with supportive families. By contrast, the talented teenagers from autonomous families did not attain high grades but were often highly rated for their talent by teachers. The third group of talented teenagers from complex families expended the most effort on schoolwork and on developing their talent. The researchers concluded that the combination of familial support and autonomy leads to positive outcomes for gifted adolescents.

Conversely, Shilkret and Nigrosh (1997) demonstrated that family dynamics can negatively impact academic performance. They found that talented young women may underperform in college because of their perceptions that their success would negatively impact other family members.

In terms of social support, peers are vitally important in adolescence and play a significant role in both positive and negative academic outcomes for students generally (Clasen & Clasen, 1995; Reis, Hébert, Diaz, Maxfield, & Ratley, 1995). In relation to gifted adolescents, Betts and Neihart (1988), proposed that some gifted students may “go underground” to fit in with same-age peers, whereas Gross (1989) drew attention to the “forced choice” that gifted students often face in either pursuing excellence at the cost of friendships or sacrificing their own interests to gain acceptance from chronological peers. It would seem, then, that the source and effectiveness of social support is an important dimension to consider in the academic outcomes of gifted adolescents.

Self-esteem has an impact on students from the earliest days of high school. The transition to high school is an exciting time for young people, but it also presents new challenges. For many students, the new culture of high school may be associated with stress and loss of self-esteem (Yates, 1999). The question of interest is whether gifted adolescents encounter such declines in self-esteem and, if so, what impact these have on their academic outcomes. The self-esteem and self-concept of gifted students are areas that have received a great deal of research attention, particularly since the 1980s (Neihart, 1999; Plucker & Stocking, 2001) and have often resulted in diametrically opposed conclusions.

At the centre of the debate in Australia has been the work of Marsh and colleagues, who argue that a decline in self-concept, termed the “big-fish-little-pond-effect” (BFLPE), occurs when high-ability students are placed in homogeneous settings (Craven & Marsh, 1997; Marsh, Chessor, Craven, & Roche, 1995; Marsh & Craven, 1994, 1997). The counterposition was presented by Gross (1997), whose research in academically selective and comprehensive high schools in New South Wales indicated that any drops in self-esteem were more closely aligned to the motivational orientations of the gifted students than their being in a selective environment. Other research has produced similarly disparate conclusions. Zeidner and Schleyer (1999), for example, reported higher academic self-concepts for gifted students in mainstream educational settings compared to homogeneous settings but also emphasised that the gifted students did not have lower self-concepts than their nongifted peers. However, Vaughn, Feldhusen, and Asher’s meta-analysis (1991) revealed that program placement had no effect on self-concepts, either positively or negatively.

Comparisons between the self-concepts of gifted and nongifted students have also yielded inconsistent findings with several studies finding no differences (Bracken, 1980; Hoge & McSheffrey, 1991; Maddux, Scheiber, & Bass, 1982; Tong & Yewchuk, 1996) and others revealing stronger self-concepts for gifted students (Ablard, 1997; Chan, 1988; Colangelo & Pflieger, 1978; Dwairy, 2004; Janos, Fung, & Robinson, 1985; Janos & Robinson, 1985; Milgram & Milgram, 1976). Finally, a small number of researchers reported lower self-concepts for gifted students compared to nongifted students (Coleman & Fufts, 1982; Forsyth, 1987; Lea-Wood & Clunies-Ross, 1995).

Despite some arguments linking self-concept and academic achievement in gifted students (Kelly & Jordan, 1990; Supplee, 1990; Van Boxtel & Monks, 1992), there does not appear to be evidence of a causal connection. It may be, as Helmke and Van Aken (1995) suggest, that academic achievement affects self-concept more than the reverse (see also Filozof et al., 1998). In a previous paper (see Vialle, Heaven, & Ciarrochi, 2005), we examined the self-esteem data for the gifted students in the Wollongong Youth Study. Our research concluded that, although self-esteem may be an important goal in itself, it does not directly impact the school grades of the gifted students in our sample. Rather than focusing on the resolution of this debate, Delisle and Galbraith (2002) argue that educators should attend to both the academic outcomes and self-esteem of gifted students.

Purpose of the Current Study

Based on a thorough review of the literature on adolescents, we have identified a number of factors that are potentially important in predicting psychological well-being and academic success. In the Wollongong Youth Study, we intend to focus on the relationships among this range of personal factors, social support, and academic performance data collected over a period of 8 years from a cohort of 950 secondary students to determine the combination of variables that best predict their emotional well-being and academic outcomes. In this paper, we examine the outcomes for the

65 gifted students in this cohort in the first 2 years of the longitudinal study to determine any differences between gifted adolescents and their nongifted peers. We were also interested in determining what factors differentiated high achievers from low achievers within the gifted group.

Method

Participants

The gifted students in this study were drawn from a cohort of over 950 students attending five high schools in a Catholic Diocese in New South Wales, Australia. The schools are located in regional and metropolitan areas and include students from diverse cultural backgrounds. Socioeconomic indicators, such as family occupation and structure, pertaining to our sample were compared with information from the Australian Bureau of Statistics (2005) and revealed that our sample is representative of national trends.

In the absence of any formal identification measures of giftedness, we selected the gifted students by utilising the data from the ELLA and SNAP standardised tests undertaken by all students in their first year of high school (Year 7). Although these tests are not measures of intelligence, they measure students' aptitudes in literacy and numeracy. In line with Gagné's (2000) model of giftedness, we selected the students who scored in the top 10% on both the ELLA and SNAP tests. As a result, we obtained a sample of 71 students, 30 of whom were male and 41 female. This sample reduced to 65 students when missing data were taken into account.

Measures

Giftedness measures. As indicated above, the ELLA and SNAP tests were administered when the students were in the first term of Year 7. ELLA is the acronym for English Language and Literacy Assessment, which is routinely administered in New South Wales Department of Education schools and many Catholic and Independent schools in Years 7 and 8. Designed originally as a diagnostic tool for schools, it measures students' literacy skills, particularly those deemed essential for academic success in secondary schools. SNAP is the acronym for the Secondary Numeracy Assessment Program. Also designed as a diagnostic tool to identify students' skills in the aspects of numeracy required for academic success in secondary schools, SNAP measures students' numeracy skills in problem-solving, number, measurement, data, and space.

Personality measures. The following scales were utilised.

1. Psychoticism (also known as toughmindedness) was measured with Corulla's (1990) revision of the junior psychoticism scale. It has 12 items and yielded an alpha coefficient of .73.

2. Trait hope was measured with the Children's Hope Scale (Lopez, Ciarlelli, Coffman, Stone, & Wyatt, 2000; Snyder, Rand, & Sigmon, 2002). The scale contains six items, which measure agency and pathways aspects of hope, and utilises a 6-point Likert scale. It has demonstrated reliability and concurrent validity and yielded a Cronbach's coefficient alpha of .82.
3. To measure positive (joviality) and negative affect (fear, sadness, and hostility), we used the PANAS-X (Watson & Clark, 1994). Students identified their feelings and emotions over the previous month. We obtained the following internal consistency coefficients: hostility = .82; fear = .85; sadness = .91; and joviality = .94.
4. Problem-solving orientation (Frauenknecht & Black, 1995) was included to determine how the students generally think and feel about problems in living, as well as their own problem-solving ability.
5. Conscientiousness was measured with a 16-item scale developed by Mak, Heaven, and Rummery (2003). It has good internal consistency and validity.
6. Attitudes to school were assessed by using a scale developed by Furnham and Gunter (1989).

Self-esteem measure. The Rosenberg Self-Esteem Scale (1965, obtained from Rosenberg, 1989) was selected because it has been widely used in other research reporting high reliability with test-retest correlations in the range of .82 to .88 and Cronbach's alphas in the range of .77 to .88. The scale includes 10 items that are answered on a 4-point Likert scale, ranging from *strongly agree* to *strongly disagree*. Examples of items include "I am able to do things as well as most other people" and "At times I think I am no good at all."

Social support measure. We used the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983) to assess students' perceptions of who is providing them with social support and how satisfied they are with that support across a number of domains. The scale has yielded excellent reliability of approximately .85.

Teacher rating measure. We utilised the multidimensional teacher rating form from the Jyvaskyla Longitudinal Study of Personality and Social Development (Pulkkinen, Kaprio, & Rose, 1999). The scale, comprising 34 items to assess overall emotional adjustment, behavioural problems, and emotional problems, was completed by each student's "home room" teacher. It has demonstrated concurrent and discriminative validity and yielded coefficient alphas of .90, .93, and .85 on the three subscales.

Academic grades. The students' academic grades were obtained by collecting the end-of-year results for each student in each of their subjects. These subject results were entered into a database separately, and, additionally, an average grade across all subjects was calculated for each student.

Procedure

Having obtained consent from schools and parents, we invited students to participate in a study on "Youth Issues". The student questionnaires were administered in the first half of the school year during regular classes under the supervision of one of the researchers or a teacher who had been briefed by the researchers. Students completed the questionnaires individually over a period of approximately 40 min. The students were thanked for their participation and debriefed at the conclusion of this session. Teachers completed the behavioural checklist at the end of each school year and student grades were also collected at that time. Data were entered into a database and analysed through SPSS.

Results

Gender Distribution

As indicated previously, the gifted group was selected by taking the top 10% of students based on their performance in the ELLA and SNAP standardised tests administered at the beginning of Year 7. This yielded a gifted group comprising 31 males (from 351 males in the total cohort for whom the entire dataset is complete) and 41 females (from 348 females in the total cohort). Although this distribution favours females, the difference is not statistically significant.

Academic Grades

To analyse the performance of the gifted group compared to the nongifted group in their academic grades at the end of Year 8, some initial calculations were required. Each school subject reported the students' performance on a number of learning outcomes, which were identical across the various school sites, on a 5-point scale. These learning outcome scores were added and averaged to produce a score for each student for each subject. These scores were entered into the database and means and standard deviations computed. These data were then subjected to an analysis of variance (ANOVA). As Table 1 indicates, the gifted group outperformed the nongifted group in every subject. To correct for Type 1 error, the Bonferroni adjustment was used with the alpha set at .004. Significant differences pertained for most subjects, with the exceptions being Design (practical subjects such as Cooking and Woodwork), Human Society and its Environment (HSIE), Geography, and Physical Education. However, the numbers of gifted students enrolled in HSIE, Geography, and Physical Education were quite small, which may explain that discrepancy. Given the practical nature of the Design and Physical Education subjects, the lack of significance in those subjects is not surprising.

Table 1. Comparison of academic grades for gifted and nongifted students

Subject	Gifted			Nongifted			F
	N	M	SD	N	M	SD	
English	71	3.1016	.55717	625	2.2785	.79285	72.421*
Religion	71	3.3148	.67094	625	2.4147	.86904	71.289*
Mathematics	71	3.4986	.62417	623	2.2186	1.01323	108.529*
Science	71	3.2996	.67604	623	2.2738	.86481	93.346*
HSIE	14	2.8810	.86338	116	2.1810	1.04340	5.807
Visual Art	67	3.0410	.70447	558	2.5812	.90909	15.983*
Design	71	2.9059	.88200	623	2.6620	.86678	5.026
Personal Dev't	54	3.0273	.59366	538	2.5006	.72405	26.756*
Music	47	3.2660	.52357	413	2.5630	.73938	40.159*
For. Language	57	3.4680	.63623	507	2.5320	1.01613	46.282*
Geography	10	3.1286	.88179	133	2.5489	1.09954	2.646
Physical Educ.	17	2.9059	.56621	86	2.5209	.71835	4.336

* $p < .004$ (Bonferroni correction applied).

Affective Outcomes

The four affect variables measured were fear, hostility, sadness, and joviality. Compared to their nongifted peers, the gifted students had higher means on the negative affect measures and a lower mean on the positive measure. This suggests that the gifted students were lower in their overall affective states. A multivariate analysis of variance was conducted with the gifted/nongifted group as the independent variable and the four affect measures as the dependent variables. There was a significant multivariate effect, Pillai's Trace = .016, $F(4, 596) = 2.447$, $p < .05$. Individual ANOVAs indicated that only the sadness variable was significant (see Table 2).

Social Support

The social support questionnaire asked students to nominate to whom they would look for social support in a range of situations (quantity) and then to indicate how satisfied they were with the support they received (quality). Examination of the means indicated that, although the gifted students tended to have more social support, they reported feeling far less satisfied with the support they received than did the nongifted students. Multivariate analyses showed there was a significant effect of the quantity and quality of social support by group, Pillai's Trace = .020, $F(2, 490) = 5.040$, $p < .01$. Individual ANOVAs were only marginally significant, however, indicating that the multivariate effect could not be clearly pinpointed to either the quality or quantity component of social support (see Table 3). Nevertheless, this pattern of lower satisfaction with social support reinforces the poorer affective outcomes, indicated above, for the gifted students.

Table 2. Comparison of affective outcomes for gifted and nongifted students

Affect	Gifted <i>M</i> (<i>SD</i>)	Nongifted <i>M</i> (<i>SD</i>)	<i>F</i>	Sig.
Fear	1.674 (.080)	1.641 (.028)	.153	.696
Hostility	1.843 (.086)	1.740 (.030)	1.287	.257
Sadness	2.016 (.110)	1.692 (.038)	7.710	.006
Joviality	4.086 (.106)	4.180 (.037)	.703	.402

Table 3. Social Support Ratings for gifted and nongifted students

	Gifted <i>M</i> (<i>SD</i>)	Nongifted <i>M</i> (<i>SD</i>)	<i>F</i>	Sig.
Social Support Quantity	23.833 (1.203)	21.626 (.422)	2.994	.084
Social Support Quality	5.222 (.098)	5.424 (.035)	3.763	.053

Teacher Ratings

Teachers rated all the students on the likelihood of behaviour problems, overall adjustment, and emotional problems. The multivariate analyses revealed that a significant effect was attained, Pillai's Trace = .043, $F(3, 680) = 10.232$, $p < .001$. As Table 4 illustrates, teachers believed that gifted students were less likely to cause behaviour problems or to experience emotional problems than their nongifted peers. Concomitantly, teachers believed the gifted students were better adjusted overall than the nongifted students. The individual ANOVAs revealed that significant effects were attained for behaviour problems and for overall adjustment.

Variables Associated With Academic Outcomes

Based on our reading of the literature, we had anticipated that self-esteem, psychoticism, conscientiousness, trait hope, problem-solving orientation, and attitudes toward education would be related to students' academic outcomes. We conducted Pearson Correlations between each of these variables and the total academic grade score for the gifted students and the nongifted students (see Table 5). Although there was a strong negative correlation between psychoticism and academic grades and strong positive correlations between the remaining variables and academic grades, further analyses revealed no significant differences between the gifted group and the nongifted group on any of these variables.

Gifted Achievers and Underachievers

In order to determine characteristics that would differentiate high achievers and low achievers within the gifted group, we utilised the Pearson Correlations. As Table 5 illustrates, the gifted students who were most likely to get poor academic outcomes

Table 4. Teacher ratings of gifted and nongifted students

	Gifted <i>M</i> (<i>SD</i>)	Nongifted <i>M</i> (<i>SD</i>)	<i>F</i>	Sig.
Behaviour problems	1.090 (.263)	1.792 (.089)	6.416	.012
Adjustment	7.829 (.320)	6.005 (.108)	29.196	.000
Emotional problems	1.277 (.180)	1.636 (.061)	3.572	.059

Table 5. Correlations between personal variables and academic grades for gifted and nongifted students

	Gifted		Nongifted	
	<i>r</i>	<i>R</i> ²	<i>r</i>	<i>R</i> ²
Self-esteem	-.003	.000	.086*	.007
Psychoticism	-.404***	.163	-.324***	.105
Conscientiousness	.631***	.398	.333***	.111
Trait hope	.416***	.173	.286***	.082
Joviality	.286*	.082	.149***	.022
Problem orientation	.092	.008	.170***	.029
Attitudes to school	.430***	.185	.228***	.052

* $p < .05$; *** $p < .001$.

were those who also scored high in psychoticism, low in conscientiousness (largest effect size), low in trait hope, low in joviality, and low in attitudes towards schools. Of particular interest is the finding that self-esteem is entirely unrelated to academic grades for this sample of gifted students.

Discussion and Conclusions

The picture of gifted students that emerged from this study was one in which these capable young people were performing well academically compared to their peers, but reported feeling sadder and more alone. However, their teachers were oblivious to these feelings and rated them as superior in adjustment and less likely to experience emotional problems or to present behaviour problems. The findings of this research, therefore, have borne out our contention that the social and emotional needs of gifted adolescents warrant the attention of researchers and educators (see also Moon & Dixon, 2006).

Our data indicate that the gifted students are academically outperforming the nongifted students, but the question remains as to whether they are performing at a rate commensurate with their ability. The students in this study all attend Catholic schools that adhere to a policy of catering for gifted students within heterogeneous classes and not implementing any school-wide formal procedures to identify such students. In practice, this may mean that gifted students may be performing at a level

well below their abilities but, because they fall within an accepted range in a heterogeneous class, the underachievement is overlooked by their teachers. Colangelo, Kerr, Christensen, and Maxey (1993) made a similar observation in their research of gifted high and low achievers. Given the potential for gifted students to be underachievers who “stay under the radar,” it would seem appropriate for the schools in our study to implement procedures for the identification of, and programming for, gifted students.

Although most of the gifted group is performing well academically, the social and emotional data from our research suggest that some may be at risk. The gifted students as a group reported more sense of isolation and dissatisfaction with the social support they receive and reported higher levels of sadness. It would seem that, again, these lower ratings are not serious enough to draw the attention of their teachers. However, these may be precursors to more serious social and emotional problems as they progress through school. Research on gifted adolescents has demonstrated that anxiety and isolation become more intense as students continue through their secondary schooling (Assouline & Colangelo, 2006). Suicide statistics show increasing levels across the entire population, and it is the second largest cause of death for adolescents (Cross, 2005). As a note of caution, though, there is no evidence that gifted adolescents are more prone to depression and suicide than the general adolescent population (Baker, 1995; Cross et al., 2006), as we indicated previously.

Therefore, the findings of our research point to the need for educators to be sensitive to the social and emotional states of gifted adolescents and recognise their vulnerabilities. Again, our data would lead us to conclude that schools should consider identifying gifted students and grouping them together for at least some of their time, because research has shown that this is an effective way to reduce the stress and feelings of isolation that many gifted students experience (Cross, 2005; Gross, 2004; Hollingworth, 1942; Silverman, 1993). We would also recommend that gifted students be given the opportunity to undergo training in social skills, how to cope with stress, and so on. In a pilot intervention we conducted at one of our school sites, for example, the students identified their desire to develop skills to interact with others more effectively, citing bullying as their major cause for concern.

Our finding that teachers rated the gifted students as being better adjusted concurs with much of the research literature, which has found adjustment to be similar or superior to that of nongifted students (Baker, 1995; Cornell, 1990; Lehman & Erdwins, 1981; Neihart, 2002; Robinson, Lanzi, Weinberg, Ramey, & Ramey, 2002; Saylor & Brookshire, 1993). Although the discrepancy between teachers' assessments and the students' self-reported affect may not be large, it nevertheless suggests that educators need to remain vigilant in monitoring the psychological well-being of the gifted students.

Our analyses showed that gifted students did not differ significantly from their nongifted peers in self-esteem, trait hope, problem orientation, or attitudes to education. This finding emphasises the reality that gifted adolescents are also adolescents and probably share more similarities than differences with their nongifted

peers. In particular, we found that the strongest relationships with academic performance were psychoticism, conscientiousness, hope, and attitudes to school, and this was consistent across both groups of students. These were the variables, then, that most strongly discriminated between gifted students who were high achievers and those who were low achievers. Given there are more within-group differences than between-group differences, we are reminded of the heterogeneity of gifted students and how important it is for educators to understand those individual differences.

The recommendations that we have drawn from our data are that effort needs to be directed to the identification of gifted students and consideration of specialist programming to meet their social, emotional, and academic needs. This also implies that there will need to be ongoing professional development of teachers to equip them with the necessary skills to identify and differentiate for these students. Currently in Australia, very little preservice teacher training deals with gifted students, a situation that continues despite the recommendations of two government reports (Senate Employment, Workplace Relations, Small Business and Education References Committee, 2001; Senate Select Committee, 1988).

Limitations

Although the findings reported in this paper are congruent with other research with gifted adolescents, there are some limitations that mean that caution must be exercised when generalising the findings. The research was conducted solely in Catholic schools and therefore may not be representative of gifted students in other educational settings. The method of selecting the gifted group was also not ideal. Our use of the ELLA and SNAP test data may have skewed the sample toward a more highly achieving group of students and therefore missed potentially gifted students who were chronic underachievers. Finally, our reliance on survey research has some limitations with regard to understanding individual differences among the gifted respondents.

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