

The relationship between self-esteem and academic achievement in high ability students: Evidence from the Wollongong Youth Study

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Abstract

The relationship between self-esteem and academic achievement is one that is regarded by many educators as a well-established fact. This belief has been often invoked in order to argue against the provision of ability grouping for gifted students. Refuting that commonly-held belief, this research examined the relationship between self-esteem and academic achievement in 65 high-ability secondary students, a sample drawn from a longitudinal study of over 900 students. The research demonstrated that there were no differences in measured self-esteem between the gifted and non-gifted students. More contentiously, though, the research found no correlation between self-esteem and academic achievement for the gifted group.

Introduction

In 1997 and 1998, the *Australasian Journal of Gifted Education* (AJGE) published a lively debate on the topic of the self-esteem (or self-concept) of gifted students. On one side of the debate, Craven and Marsh (1997) argued that the Big-Fish-Little-Pond Effect (BFLPE) needed to be considered when grouping gifted students. The BFLPE suggests that the self-concept of gifted students is detrimentally affected when they move from heterogeneous classes (e.g. comprehensive high schools) to selective, homogeneous settings such as selective high schools in New South Wales. The "opposing" view was expressed by Gross (1997), utilising her research in selective and comprehensive high schools in New South Wales. Gross (1997) defended the principle of grouping gifted students together and concluded that movement in self-esteem was more closely linked to the motivational orientations of the gifted students than their educational placement. The following issue of the journal contained responses by the authors (see Gross, 1998; Marsh & Craven, 1998), which came no closer to "resolving" the debate. Rather, the debate seemed to become more focused on the appropriate educational environment for gifted students rather than self-esteem itself.

While drawing attention to the BFLPE on gifted students' self-concepts, Craven and Marsh (1997)

did not conclude that selective environments should be abolished. Instead, they argued that attention needed to be given to the development of strategies to enhance the self-concepts of gifted students in selective settings. Nevertheless, anecdotal evidence from teachers and schools in the ensuing years has suggested that the research of Marsh and colleagues is often invoked to argue against grouping gifted students together. Ironically, perhaps, this belief among teachers was strengthened by an inquiry into public education in New South Wales (see Vinson, 2002). Vinson reviewed the Craven and Marsh, and Gross articles in the AJGE and concluded that "findings to date in relation to academic self-esteem and high ability grouping are not in themselves sufficiently conclusive to determine policy recommendations in relation to selective schooling or opportunity classes" (Ch 4, p. 24). Nevertheless, his recommendation that the majority of New South Wales' selective schools should be disbanded was seen by many teachers as support for Marsh's position.

This debate was revived for us when we embarked on a longitudinal research project on adolescent emotional well-being and academic outcomes, funded by the Australian Research Council and in collaboration with the Wollongong Catholic Diocese. While we were informally talking with the principals in the early stages of the project, one principal commented that Marsh's research "made a lot of sense" and supported heterogeneous grouping, a comment which gained some agreement from his colleagues. As self-esteem was one of the variables of import in our study, we were interested to see what patterns our own research would reveal.

Self-concept vs self-esteem

In the introductory section, we have used two terms, self-concept and self-esteem. We have done so because Craven and Marsh focused on self-concept, particularly academic self-concept, while Gross used self-esteem in her research. In fact, the terms are frequently used interchangeably in everyday contexts—and

sometimes in the research literature. They are closely related ideas and some theorists would see one being subsumed under the other. Nevertheless, they do have distinct meanings, theoretically and practically. Woolfolk (2005) defines self-concept as the image individuals have of their attributes, abilities, attitudes, feelings and so on. The formation of self-concept is a cognitive act that requires self-assessment and is differentiated across a range of activities. Individuals' self-concepts are susceptible to change through experiences and are influenced by comparison and feedback from others, including family, friends, and teachers.

Self-esteem is defined by Woolfolk (2005) as an affective act and encapsulates the value or worth we attach to our self-assessments. Self-esteem is widely acknowledged as being less malleable than self-concept as it encompasses the ways that individuals feel about their strengths and weaknesses. For example, an individual may be hopelessly uncoordinated when playing sport; cognitively, that person may appraise his or her performance and form a low self-concept for sport-playing capacity. However, if that person wasn't concerned about sport, viewing it as an unimportant hobby, then the self-esteem of that individual may not be affected. High self-esteem, according to Harter (1990), comes from our competence in the things we value, while low self-esteem is the outcome of negative judgements, when individuals focus on their weaknesses.

The research literature on self-concept and self-esteem is extensive and it is beyond the scope and intent of this article to exhaustively review that body of research. Instead, we examine the issue of whether self-esteem and self-concept research, conducted with general school populations, is applicable to gifted students.

Self-concept, self-esteem and gifted students

One of the points of contention in the debate between Gross and Marsh's group is whether research conducted on general populations is relevant to gifted students. Marsh and his colleagues have consistently argued that the research is relevant and, in particular, claimed that the BFLPE is evident in students across the full spectrum of abilities (Craven & Marsh, 1997; Marsh, Chesson, Craven & Roche, 1995; Marsh & Craven, 1994; 1997).

Irrespective of the merits or otherwise of Marsh's contention, there has been a marked increase over the last two decades in self-concept and self-esteem research dealing specifically with gifted students. Our review has determined that this research focuses on these broad areas:

- the impact of educational placements (mainstream versus special grouping);
- comparisons between gifted and non-gifted students;
- developmental patterns; and,
- the relationship between self-concept and social factors.

The majority of the research has drawn on measures of self-esteem, social self-concept or general academic self-concept. Recently, some researchers have called for research on gifted students that draws on subject-specific self-concepts rather than the more general measures commonly utilised (see, for example, Plucker & Stocking, 2001).

Debates over the most desirable grouping strategy (mainstream versus special classes) for gifted adolescents has often centred on self-concept and/or self-esteem. While relationships have been drawn between self-concept and academic outcomes, more often the research has focused on affective outcomes. Zeidner and Schleyer (1999), for example, reported that gifted students in mainstream educational settings had higher academic self-concepts than gifted students in homogeneous classes. Nevertheless, they also emphasised that the gifted students still had comparable or stronger self-concepts than their non-gifted peers. Significantly from our perspective, the authors did not examine the relationship between self-concept and academic outcomes across the two educational contexts.

Zeidner and Schleyer's (1999) results on the relationship between educational placement and self-concept are not replicated across all other studies. In a meta-analysis of experimental or quasi-experimental research that included control groups (nine studies), for example, Vaughn, Feldhusen and Asher (1991) concluded that program placement did not affect self-concepts, either positively or negatively.

Zeidner and Schleyer's (1999) comparison of gifted and non-gifted self-concepts is generally supported by other research with some notable exceptions. A number of research studies found no differences between the self-concepts of gifted and non-gifted students (Bracken, 1980; Hoge & McSheffrey, 1991; Maddux, Scheiber & Bass, 1982; Tong & Yewchuk, 1996) while others demonstrated stronger self-concepts for gifted students (Ablard, 1997; Chan, 1988; Colangelo & Pfleger, 1978; Dwairy, 2004; Janos, Fung & Robinson, 1985; Janos & Robinson, 1985; Milgram & Milgram, 1976). While the majority of the studies favour the gifted, some researchers have demonstrated lower self-concepts for gifted students compared with their non-gifted peers

(Coleman & Fults, 1982; Forsyth, 1987; Lea-Wood & Clunies-Ross, 1995).

Self-concept has been positively associated with social coping (Buescher & Higham, 1987; Swiatek, 2001; Tomchin, Callahan, Sowa & May, 1996). In particular, Swiatek's (2001) research revealed that positive strategies for developing social relationships (e.g. helping others, using humour, or maintaining high levels of activity) were associated with higher self-concept scores while negative strategies (e.g. underachievement) were associated with lower self-concept.

The underlying message in much of the research on self-concept and self-esteem, as Gross (1997) argues, is that "the bigger, the better" prevails. It seems that there is a popular belief that a positive self-concept is synonymous with all things desirable for students in school while a negative self-concept equates to undesirable outcomes (Colangelo & Assouline, 2000; Dawes, 1998). The difficulty is to know at what point the continuum slides from positive to negative. Given the lack of authority on where to draw this line, it would seem to us that the notion of a healthy, as opposed to high, self-esteem is more useful (Gross, 1997).

Relationship with academic achievement

Our longitudinal research seeks to identify the combination of factors that will predict emotional well-being and academic outcomes of adolescents. Given this focus, we were particularly interested in the nature of the relationship between self-esteem and academic achievement. Gagné's (1995, 2000) influential reconceptualisation of giftedness as potential and talent as performance includes self-esteem as one of the catalysts contributing to talent development. Hence, self-esteem is positively associated with academic outcomes in the theory that underpins most gifted provision in Australian schools.

However, our review has suggested that what is largely missing from the gifted literature is a solid empirical base for the widespread assumption that a positive self-concept is essential for academic achievement in gifted students.

Research conducted on the relationship between academic achievement and self-esteem or self-concept with general populations has supported a correlational relationship (see, for example, Byrne, 1984). Further, a relationship between self-esteem and students' future academic and career aspirations has been suggested (see, for example, Chiu, 1990). Notably, though, Byrne recommended that additional studies investigate this relationship in diverse student populations.

While self-concept and academic achievement may also be related in gifted students, as Supplee (1990) argues (see also Kelly & Jordan, 1990; Van Boxtel & Monks, 1992), it is not clear that there is any causal connection between self-concept and achievement. Notably, Helmke and Van Aken (1995) suggest that academic achievement has more of an impact on self-concept than the reverse. This was also evident in research conducted by Filozof and colleagues (Filozof, Albertin, Jones, Steme, Myers & McDermott, 1998), although their sample was a general ability group rather than a gifted group.

Plucker and Stocking (2001), however, found that the relationship between achievement and self-concept is not that clear, particularly when subject-specific measures are used. Their study used the internal-external frame of reference (i.e. self-concept is formed by comparing one's ability in one subject with ability in another subject—internal—and by comparing one's abilities with others' abilities—external) and found that the high mathematics achievement of gifted students was negatively correlated with verbal self-concept. Such research confirms that the nature of the relationship is complex and that further research is warranted (Williams & Montgomery, 1995).

Despite the lack of research that attributes a causal role to self-esteem, there is, nevertheless, a popular belief that underachieving gifted students will perform better academically if their self-esteem is targeted for improvement. Donna Ford's research with gifted African-American students, for example, has concluded that their poorer achievement can be largely attributed to poor self-esteem, low academic self-concepts and low social self-concepts (Ford & Thomas, 1997; Grantham & Ford, 2003).

In analysing the literature on gifted students' self-esteem, it is clear that the emphasis is on social and emotional outcomes rather than academic outcomes. In fact, when the needs of gifted students generally come under the spotlight, there are frequently trade-offs between affective and academic outcomes. Such a trade-off is apparent in the specific area of self-esteem and giftedness, as the title of one of Marsh's articles suggests: "Is it better to be a relatively large fish in a small pond even if you don't learn to swim as well?" (Marsh & Parker, 1984). We would argue that educators should not have to choose between affective and cognitive outcomes, but recognise that both are important goals for gifted students. Delisle and Galbraith (2002) argue that educators should not be concerned about the direction of the relationship and instead be concerned about both their gifted

students' academic outcomes and their self-esteem. Despite their argument that the nature and direction of the relationship was unimportant, we believed that it was still worthwhile to examine the relationship between self-esteem and academic achievement in our cohort.

The Wollongong Youth Study

As we have indicated, the Wollongong Youth Study is a longitudinal study investigating the combination of variables that best predict emotional well-being and academic outcomes for a cohort of adolescents. The study involves tracking the cohort of over 900 students in the Wollongong Catholic Diocese, from Year 7 to Year 12 and beyond. At the time of writing, we have analysed the first two waves of data, covering Years 7 and 8, and we are in the process of collecting the third wave of data for Year 9. Our data include student questionnaires, teacher ratings, standardised testing and end-of-year academic outcomes.

Comparisons between our cohort and information from the Australian Bureau of Statistics (2005) show that our sample is representative of national trends with regard to socioeconomic indicators of family occupation and structure; further, the sample includes students from regional and metropolitan areas and reflects diverse cultural heritages. Therefore, we were confident that an examination of the relationship between self-esteem and academic achievement of the gifted students in our sample would be of value.

Method

Participants

The selection of students as gifted for our analysis was made difficult because of the absence of objective measures of giftedness. The students were members of heterogeneous groups and no efforts had been made by the schools to identify gifted students. For the purposes of this article, then, we selected our gifted sample by taking the top 10% of students in the ELLA and SNAP scores (see below) administered in Year 7. While these tests are not IQ measures, they do provide a standardised measure of students' literacy and numeracy aptitude. We selected the top 10% as a generous percentage to allow for any shortcoming in the testing. This figure is also in line with the percentage recommended by Gagné (2000) for the creation of talent pools.

Our selection procedure resulted in a sample of 71 students, 30 of whom were male and 41 of whom were female. When missing data were taken into account, our sample comprised 65 students.

Procedure

The ELLA and SNAP tests were administered when the students were in the first term of Year 7 (2003). The acronym, ELLA, refers to English Language and Literacy Assessment. It is normally administered in New South Wales Department of Education schools and many Catholic and Independent schools in Years 7 and 8. It is a measure of students' literacy skills, particularly those deemed essential for secondary school success, and is designed as a diagnostic tool for schools in the first instance.

ELLA's companion test is the Secondary Numeracy Assessment Program (SNAP) which measures students' numeracy skills in problem solving, number, measurement, data and space. It, too, is a diagnostic tool intended to assist schools in identifying students' skills in the aspects of numeracy required for success in secondary school curricula.

Self-esteem was measured in mid-2003 and mid-2004 when students were in Years 7 and 8 respectively. The Rosenberg Self-Esteem Scale (1965, obtained from Rosenberg, 1989) was selected because it is, arguably, the most widely-used self-esteem measure in social science research. It comprises ten items that are answered on a four 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". Research using the scale has reported high reliability with test-retest correlations in the range of .82 to .88, typically. Cronbach's alphas in the range of .77 to .88 have also been reported (see also Blascovich & Tomaka, 1993; Rosenberg, 1986).

The students completed the self-esteem scale as part of a questionnaire comprising a range of personality and social measures. The questionnaires were administered at each of the six school sites in the students' pastoral care groups under the supervision of a researcher and/or a teacher who had been briefed on the study. The questionnaire took the students between 30 and 50 minutes to complete and they were debriefed at the conclusion of the data collection.

The students' academic outcomes were obtained by collecting the end-of-year learning outcomes for each student. The numerical scores for each subject were calculated by adding and averaging the result for each learning outcome within that subject. These results were entered into a database separately as well as being combined to create an average grade for all subjects for each student. For the purposes of this article, the average of all subjects was used for analysis. The

data were analysed by entering the data into SPSS and performing a Pearson Correlation with self-esteem and total grades as the variables.

Results

The self-esteem measure yielded a mean of .745 for the gifted group and of .781 for the non-gifted group, which was not statistically significant. This supported the pattern of no discernible differences between gifted and non-gifted samples reported in some of the research reported previously (Bracken, 1980; Hoge & McSheffrey, 1991; Maddux, Scheiber & Bass, 1982; Tong & Yewchuk, 1996).

As indicated, a Pearson Correlation was conducted to determine the relationship between self-esteem and grades. Surprisingly, there was no significant correlation between the variables for the gifted group ($r = .020$, ns). Statistically, there was a small correlation between self-esteem and grades for the non-gifted group but this was likely to be an artefact reflecting the large sample size. This finding contrasts with the research that demonstrates a significant relationship between the variables for gifted students (Helmke & Van Aken, 1995; Kelly & Jordan, 1990; Van Boxtel & Monks, 1992).

Discussion

The finding that there was no correlation between self-esteem and academic outcomes for our gifted sample contrasts dramatically with prevailing attitudes about that relationship. As we have indicated, educators frequently invoke self-esteem to argue for or against ability grouping. While our gifted sample was grouped heterogeneously, the absence of a correlation would call into question whether the academic side of that argument can be sustained. It does not, admittedly, challenge the importance of self-esteem in its own right. However, research has more consistently shown an advantage in social self-esteem for gifted students grouped homogeneously (see, for example, Hoge & Renzulli, 1993a, 1993b).

There are obvious limitations in our study, related primarily to the selection of our gifted sample. Nevertheless, the lack of a relationship between self-esteem and academic achievement for gifted students in a mainstream setting, we maintain, suggests that popular beliefs (as opposed to research-based evidence) regarding the impact of self-esteem on academic outcomes are erroneous.

More importantly, though, the widespread popularity in schools of self-esteem enhancement programs (irrespective of their intrinsic value) targeting academic underachievement also needs to

be challenged. Our data suggest that the pathway to reversing academic underachievement is more complex than such a one-pronged approach. This conclusion is echoed by researchers such as Grantham and Ford (2003) who acknowledge the complexity of factors interacting with self-esteem, self-concept and academic achievement. In their research with gifted African-American students, for example, they suggest that racial identity is an important intervening variable.

Despite its limitations, our research contributes to understanding of the complexities of gifted students' self-esteem. As we continue to collect and analyse our longitudinal data, we anticipate being better placed to report on the relationship over time. In addition to assessing the relationship of self-esteem to academic outcomes, our longitudinal data should also reveal the role of self-esteem in gifted students' affective outcomes. To our knowledge, such longitudinal analyses of self-esteem and academic and affective outcomes in gifted students have not been forthcoming.

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