THE AFFECTIVE CHARACTERISTICS OF UNDERACHIEVING INTELLECTUALLY GIFTED CHILDREN

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ABSTRACT

This project examined the academic self-concept and self-expectations for future achievement of achieving gifted, underachieving gifted and average achieving children.

Subjects were chosen from a total nonreferred Form 1 population of 1,220 children from all the intermediate schools in two New Zealand cities. The group intelligence test, the Test of Scholastic Abilities (Intermediate B)(TOSCA) was used as an initial screening device and those students who had a predicted Weschler Intelligence Scale for Children (Revised)(WISC-R) IQ score of 118 or more were administered the Full WISC-R test. Forty one students had a WISC-R Full Score (FS) IQ>125 and were classified as gifted. Seven of these students were classified into an underachieving gifted group as their actual Performance Achievement Test (PAT) measures were one standard error of estimate or more below their predicted scores, whereas the remaining 34 were placed into an achieving gifted group. A third group, classified as average achievers, was composed of children who had WISC-R FS IQs ranging between 90 to 110 and whose achievement on the PAT was within one standard error of estimate of prediction.

The Student's Perception of Ability Scale (SPAS) was administered to all three groups to test the hypotheses that significant differences in academic self-concept would be found between all three groups and that over time there would be a perceptible decrease in this self-concept. There was a significant difference in academic self-concept between the achieving gifted and average achieving groups (p<0.05), but no significant differences between underachieving gifted and either achieving groups was found. No significant decline in academic self-
concept occurred over time.

The self-expectations for future achievement were assessed using the Projected Academic Performance Scale (PAPS) to test the hypothesis that there would be significant differences between achieving gifted and underachieving gifted, between achieving and average achievers but not between underachieving gifted and the average group. This hypothesis was confirmed (p<0.01). The self-expectations also declined over time for all three groups with the greatest difference noted for the achieving gifted children.

On the basis of the above findings it was concluded that self-expectations for future achievement could be the most useful characteristic for further investigation and the most likely target for the remediation of underachievement.

**BACKGROUND**

Underachievement has long been acknowledged as a problem for some gifted children. Indeed, it has been argued that these individuals not only may become relatively nonproductive members of adult society but also they have potential personal problems (Gonzalez and Hayes, 1988).

Whilst controversy and uncertainty exists as to the definition and identification of underachievers (Dowdall and Colangelo, 1982) and concomitantly, the identification of underachievers (Anastasi, 1982; Thorndike, 1963), the literature does suggest a number of specific explanations for underachievement amongst gifted children (Adams, 1986; Purkey, 1969; Krouse and Krouse, 1981; Van-Boxtel et al., 1992; Whitmore, 1984). These can be summarised as follows:

1. Inadequate motivation; lack of challenge leading to poor study habits and eventually skill deficits; inability to persevere;

2. Social pressure or maladjustment, resulting in rejection by peers unless they conform to group standards;

3. Inadequate school curriculum content and poor teaching; a school atmosphere low in intellectual content and challenge; the school may fail to recognise the child as being gifted;

4. Home climate and parental rejection; parental attitude towards education; unrealistic pressures to achieve;

5. Personality characteristics, specifically lowered self-concept, negative outlook on life; strong ego defences; perfectionism and
unrealistic expectations for achievement; and,

6. Undiagnosed learning difficulties.

Each individual case of underachievement has its own particular combination of causal factors. However, the main thrust of research to date has looked within the individual to basic personality inadequacies which are adjudged to be associated with lowered academic achievement. Typically these children are described as lazy, unmotivated, perpetually 'offtask', bright but not trying very hard (Adams, 1986; Whitmore, 1984). These characteristics lead to these children not being referred to programs for the gifted, particularly if the programs are based on high demonstrated academic standards and use teacher nominations as the first part of the identification process (Minner, 1990).

Whitmore (1987) found that subgroups of gifted children such as gifted underachievers, are not being provided for educationally. Gonzalez and Hayes (1988) believed that there are few initiatives to cater for the gifted underachiever in Australian education systems. In New South Wales there is a paucity of programs for gifted children outside the opportunity class and selective high school system. Those children who are not chosen for selective schools are not guaranteed the provision of any real alternative.

AFFECTIVE CHARACTERISTICS OF UNDERACHIEVING GIFTED CHILDREN

Affective characteristics are now being recognised for the significant interaction they have with achievement. Bloom (1976) has asserted that the affective variables can enhance or inhibit an individual's academic potential because they predetermine whether a person will be sufficiently motivated to persevere. In this regard, recent prominence has been given to two affective characteristics which are purported to have a significant relationship to achievement. These are academic self-concept and self-expectations for future achievement.

Although numerous studies have found that nongifted underachievers have lowered self-concepts, this same result has not been achieved with underachieving gifted (Gonzalez and Hayes, 1988; Olszewski-Kubilius et al., 1988). Studies such as those by Kanoy et al. (1980), Saurenman and Michael (1980) and Winne et al. (1982) have only been able to discriminate between achieving gifted and underachieving gifted using the academic subscales of the global self-concept instruments. These results, coupled with
the theoretical shortcomings of using global self-concept scores, suggest that academic self-concept may be a more fruitful area for investigation.

The second characteristic of self-expectations for future achievement, has yet to be extensively studied with achieving and underachieving gifted children. While there is evidence to show that negative expectations are positively correlated with depressed academic achievement, and that over time self-expectations have a direct influence on motivation (Brophy and Good, 1974; Jones, 1977; Entwistle and Hayduk, 1978; Chapman and Boersma, 1980), these factors should be investigated to discover if gifted underachievers have lower expectations than their achieving counterparts.

AIMS OF THE RESEARCH

The overall aim of this study was to focus on academic self-concept and self-expectations for future achievement using a sample of 11 year old achieving and underachieving gifted children from a nonreferred population not involved in any gifted program. This age group was considered appropriate as it has been acknowledged that the characteristics that distinguish underachievers from achievers are present before adolescence and if remedial efforts are to be successful they must counteract these trends as soon as possible (Gallagher, 1975; Pirozzo, 1982). Moreover, it does seem that most children begin their schooling with exceptionally high expectations and self-evaluations but by 11 the majority have developed affective characteristics which are a more realistic reflection of their achievement levels (Stipek, 1981). In addition, the majority of New Zealand children enter the intermediate school system at this age. The change to a larger, more competitive environment could have an appreciable effect on the affective characteristics of gifted children (Marsh, 1991; Marsh and Johnston, 1993). This study therefore, was carried out over a school year, not only to identify crucial periods during which affective development takes place and thereby pinpoint where effective remedial intervention may be most beneficial, but also to indicate which variables are still malleable. On a more general level, it was hoped that an examination of the affective characteristics of underachieving gifted children could indicate if their school failure is associated with the development of negative school-related affective attitudes. In turn, this information may suggest which of these affective variables would be the most appropriate to include in remedial programs, so that these children could be encouraged to achieve at levels commensurate with their high ability.
HYPOTHESES

ACADEMIC SELF-CONCEPT

Underachievers and failure-prone children have generally been characterised by lower academic self-concepts than those of achievers of the same ability levels (Chapman and Boersma, 1980). However, as underachievers who are gifted may have achievement levels that are average for the general school population it was hypothesised:

1. that achieving gifted children would have higher selfconcepts than underachieving gifted children;

2. that achieving gifted children would have higher selfconcepts than average achieving children; and,

3. that the underachieving gifted and average achieving groups would not differ from one another.

Furthermore, as all of these children were experiencing a slight change in their reference group, by entry into a more competitive environment; as academic self-concept gradually declines annually during the elementary period; and as academic achievement worsens each year for underachievers, it was further hypothesised:

4. that there would be a decrease of academic self concept for all subjects over the school year.

SELF-EXPECTATIONS FOR FUTURE ACHIEVEMENT

It was hypothesised:

1. that there would be a significant difference in self-expectations for future achievement between the achieving gifted and underachieving groups;

2. that there would be a significant difference between the achieving gifted and average achieving groups;

3. that there would be no significant differences between the underachieving gifted and average achieving groups; and,

4. that over the time of the testing period all the groups would
show a decline in their self-expectations scores.

METHODS

SUBJECTS

Eighty children were chosen from 1220 children, the total 1982 Form 1 cohort in all five Intermediate Schools from two cities in New Zealand. These children were participating in a larger three year longitudinal study of affective development. The Test of Scholastic Abilities (TOSCA)(Intermediate B: Reid et al., 1981) was used as an initial screening device for selecting the gifted groups. The TOSCA raw score of all those children who gained a Stanine of eight or nine was regressed onto the Wechsler Intelligence Scale for Children Revised (WISC-R) (Wechsler, 1974) IQ score. All individuals whose predicted WISC-R score was greater than 118 were administered the WISC-R Full Scale (FS) test by the experimenter. Only those children whose WISC-R FS IQ was greater than or equal to 125 were included in the study (n=41).

From within this group of subjects the regression equation method (Thorndike, 1963) was used to discriminate the achieving gifted from the underachieving gifted group. The WISC-R FS IQ scores were used to form a regression line equation which predicted an expected achievement on four Performance Achievement Test (PAT) achievement measures for each child. Those students whose actual PAT scores were one standard error of estimate or more below their expected scores on three out of the four scales were classified as underachievers (n=7).

The average achieving group was chosen from those students who scored in the 90-110 range of a previously administered WISC-R FS test. Those children whose achievement was within one standard error of estimate of their predicted achievement as determined by regression equation were classified as average achievers (n=39).

ANOVA of the achievement data reveals that in three measures of the PAT (Raw Scores) - Reading Comprehension, Reading Vocabulary, Listening Comprehension - the achieving gifted group was significantly different from the underachieving gifted and average groups. These latter two groups did not differ. On the Mathematics test, a statistically significant difference was only observed between the underachieving gifted and average groups.

INSTRUMENTS
IQ Measures

The TOSCA was used in the first step of the selection process for the gifted children. The TOSCA, developed specifically for use in New Zealand schools, is a pencil and paper test with 70 strongly school-related items (Reid et al., 1981).

The WISC-R was used to assess the IQ of all individuals participating in this study.

Achievement Measures

To assess achievement levels, four of the tests in the PAT (Level 5, Form B) - Reading Comprehension, Reading Vocabulary, Listening Comprehension, Mathematics - were used. These tests are self administered, New Zealand normed, paper and pencil scales, administered by the majority of New Zealand primary and intermediate schools at the beginning of each school year (Beck and St George, 1983).

Affective Measures

(i) Academic Self-Concept

Boersma and Chapman's (1977) Student's Perception of Ability Scale (SPAS) was used to measure academic self-concept. The SPAS contains 70 forced-choice "Yes/No" items which cover attitudes about school in five basic academic areas and to school in general. These items are grouped into six subscales, originally derived through factor analysis. The subscales are Perception of General Ability, Perception of Arithmetic Ability, General School Satisfaction, Perception of Reading and Spelling Ability, Perception of Penmanship and Neatness, and Confidence in Academic Ability. This test was specifically constructed for use with primary age children. Items are read aloud to minimise the effects of reading difficulties. Scores derived from the SPAS may range from 70 (high academic self-concept) to 0 (low academic self-concept).

The available technical data summarised include a Full Scale mean score of 46.24 with a standard deviation of 11.71 and a standard error of measurement (SEm) of 3.41. For the Full Scale, Cronbach's alpha is 0.915 with 0.803 being the median alpha for the subscales. Full Scale test-retest reliability was 0.834.
(ii) Future Academic Expectations

The Projected Academic Performance Scale (PAPS) developed by Chapman and Boersma (1978) was used to assess selfexpectations for future academic achievement. This instrument has 42 four response multi-choice items allocated to six subscales each containing seven items - Spelling, Reading, Language Arts, Mathematics, Social Studies, Science. The items concern predicted performance in the near- and long-term future. Responses are weighted on a four point scale with higher values reflecting higher expectations. Full Scale scores range from 42 (low expectations) to 168 (high expectations). The available technical data (Chapman and Boersma, 1979) indicate a Full Score mean of 121.41 and a standard deviation of 17.37. Cronbach's alpha was 0.901 while the test-retest stability was 0.801. Although this is a relatively untried instrument, it appears to have promising possibilities.

PROCEDURES

IQ Measures

The TOSCA was administered in April by two senior researchers and two graduate education students to the Form 1 (year 6) cohort from which the present sample was drawn.

The WISC-R was administered to the average group during June, July and August by the same four personnel as well as the experimenter.

For both gifted groups, the WISC-R was administered in April by the author.

Affective Measures

The SPAS, and PAPS were administered in February and November. The children were tested in their regular classroom groups as part of a larger study.

Subjects were informed that the questionnaires were being used in a city-wide survey to find out something about "what kids thought about school and schoolwork". It was emphasised that the questionnaires were not tests and that although it was necessary to be honest, there were no right or wrong answers.
Testing time took 35 to 45 minutes. All items were read aloud by the tester. The administration was conducted in the absence of teachers by the same five personnel who conducted the WISC-R testing.

STATISTICAL PROCEDURES

Differences between the groups in the affective variables (SPAS and PAPS) were examined using an hierarchical procedure beginning with analysis of variance with repeated measures (MANOVA) and examining univariate effects when appropriate.

RESULTS

IQ MEASURES

Both the achieving and underachieving gifted had the same mean WISC-R FS IQ scores. However, the subscale scores showed differing patterns. The achieving group had a higher Verbal IQ, whereas the underachieving group had a much higher Performance IQ. For the underachieving gifted children there was a discrepancy of 10 points between their mean verbal and performance scores in contrast to only one point in the two scores for the achieving gifted group.

ACHIEVEMENT MEASURES

On the Reading Comprehension, Reading Vocabulary and Listening Comprehension tests of the PAT it was found that underachieving gifted children scored well below their achieving counterparts, but no better than average achievers. For Mathematics, there were no significant differences between the two gifted groups but both were significantly above the average achieving group. Therefore, the majority of underachieving gifted children were deficient in the reading skills area.

Although the average achievers fulfilled the criteria for selection, many of these individuals had high achievement levels given their IQ so that the achievement for this group as a whole was slightly above average.

ACADEMIC SELF-CONCEPT

The SPAS instrument tested the hypothesis that significant
differences in academic self-concept would be found between the achieving gifted, underachieving gifted and average achieving groups and, that over time there would be a perceptible decrease in academic self-concept for all groups. As predicted, the results of the repeated measures analysis of variance for academic self-concept reveal a statistically significant main effect for group (F=6.31, P<0.05).

Analyses of variance were performed to clarify this result. These analyses revealed that on both testing occasions, the group effect was the result of a significant difference between the achieving gifted and average achieving groups. Contrary to expectation, there was no statistically significant difference between either gifted groups, although the mean score of the underachieving group was below that of the achievers. There was no statistically significant difference between the underachieving gifted and average achieving groups on the SPAS at either testing time.

The repeated analysis of variance also revealed, unexpectedly, that there was no main effect for time. In other words, over the 10 month period between the first and second testing occasions, there was no change in the children's self-concept of academic ability, nor did any of the groups change in their relative positions with regard to each other. The change to a new academic situation (viz., their progression from primary to intermediate school) did not result in an alteration of the academic self-concept of these children. In summary, although the groups scored in the ranking positions hypothesised (achieving gifted, underachieving gifted and average achieving groups), the difference between the two gifted groups was not found to be significant, whereas there was a marked difference between the achieving gifted and average children. There were no changes over time in either scores, or rankings as a result of exposure to a new social milieu, nor was there the typical small drop in self-concept as a result of age.

SELF-EXPECTATIONS FOR FUTURE ACHIEVEMENT

It was hypothesised that, for future academic expectations as assessed by the PAPS, there would be significant differences between the two groups of gifted children, between the achieving gifted and average children. It was also hypothesised that the scores of all these groups would decrease between the first (T1) and second (T2) testing occasions. The repeated measures analysis of variance revealed a main effect for group and time but there were no interaction effects.
The univariate analysis of variance at T1 revealed that the significant group effect was caused by the underachieving gifted and average groups differing significantly from the achieving gifted group but not from each other.

The hypothesis that the PAPS scores of all three groups would deteriorate over the year was supported. At T2, all group mean scores on the PAPS had decreased. The greatest difference was recorded by the achieving gifted group and the least by the average group. Hence, underachieving gifted and average achievers clearly hold lower expectations for future academic performance than achieving gifted children.

DISCUSSION

The prediction that academic achieving gifted children would have significantly higher self-concepts than achieving average children was clearly supported at both testing times. Obviously, the success experienced by these gifted students in the academic area has led to relatively high perceptions of ability.

The prediction that the perception of ability of underachieving gifted children would be significantly below those of the gifted achieving group was not supported at either testing time. This result was unexpected given previous results found in the literature.

These buoyant academic self-concepts are not a reflection of the academic achievement of this group of children as their achievement is not different to that of achieving average children in four subject areas.

It was also hypothesised that over the ten months of the experimental period, the self-concepts of all of the groups would decline and that the change would be greatest for the gifted group. Again the prediction was not supported. There was no change over time for any of the groups. Clearly then, academically gifted children are characterised by higher academic self-concepts than average achieving children. Underachieving gifted children could not be discriminated on this variable.

The results in the area of expectations for future achievement were quite consistent with the hypotheses. At T1 achieving gifted children had significantly higher ratings than the underachieving or average achieving groups. Between T1 and T2 the scores of all the groups declined with the greatest change being found for the gifted achieving group.
Support was also found for the contention that underachievers hold lower expectations of future success than achievers of the same ability level. Underachieving gifted students clearly hold lower expectations of future success than achieving gifted children. This occurs in spite of their high potential of which they seem aware. The implications of these relatively lower expectations are potentially serious as low expectations for success would probably contribute to reduced motivation to learn and thereby interfere with attempts aimed at helping such children reach their potential.

However, unlike academic self-concept, this variable appears more sensitive to change.

CONCLUSIONS

Some caution must be exercised in the interpretation of these results due to the small numbers of underachieving gifted students that were identified. Nevertheless, the following picture emerges of the affective characteristics of the groups under study.

Achieving gifted children have high perceptions of ability which seem to be relatively stable by age 11. They accept responsibility for their successes and refute it for their failures. They have high self-expectations for future success but these are subject to change.

The pattern is not very different for underachieving gifted children. Their academic self-concept is slightly below those of the gifted achievers, but this was not significant. The most significant finding of this study was a difference in self-expectations for future achievement. In spite of high ability their expectations for success are only those of average achievers whose achievement they equalled except in mathematics.

Self-expectations were depressed for all groups over the 10 months of the testing period, probably as a result of the move to a larger more competitive environment, with the change being greatest for the achieving gifted.

Whilst it might be disappointing that more definitive results were not obtained on all variables, the malleability of the self-expectations findings suggest that this could be a profitable place to start any remediation efforts.
REFERENCES


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