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The relationship between underachievement of gifted students and their attitudes toward school environment

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Abstract

Institute of Gifted and Talented Students enrolls students according to their IQ levels. Although these students show high performance academically, they may experience underachievement in primary schools. The purpose of this study is to analyze the reasons for underachievement of gifted. The School Attitude Assessment Survey-R (McCoach, 2002) was applied to gifted students who are high achievers and underachievers. The sample consisted of 54 students from primary schools; 35 high achievers and 24 underachievers. Gifted achievers and gifted underachievers showed difference in their attitudes toward school, attitudes toward teacher, motivation, self-perception, and goal valuation. In addition, as the grade level increases, means of five sub factors of the instrument decrease for our sample. This study is an important step toward identifying factors related to the underachievement of gifted students in primary schools.
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1. Introduction

The purpose of this study is to examine whether gifted achievers and underachievers at primary level differ in their general academic self-perception, attitudes toward school, attitudes toward teachers, motivation, self-regulation and goal valuation according to their GPAs. This study extends the work by McCoach and Siegle (2003a) which aimed to identify the characteristics of gifted underachievers at the university level using School Attitude Assessment Survey-Revised (SAAS-R). Institute of Gifted and Talented Students serves special education for gifted

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students who have level of IQ greater than 130. Although the students have high IQ levels, they may face with underachievement.

Giftedness is perplexing phenomena. Historically the identification of gifted and talented students has been inextricably linked to intelligence tests. During the early part of the 20th century, Terman (1916) focused on developing and administrating the Standford-Binet Intelligence Scale. The phrase "gifted and talented" equaled an intelligence test score of at least 135. Intelligence and achievement tests continue to be developed and modified to identify the intelligence and talents of children and adults. IQ test results have affected people's views on children's abilities throughout the 20th century (Scott et al., 2005).

Gardner (1983) proposed the theory of multiple intelligences. Seven intelligences (linguistics, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal) were initially identified. One or more of these intelligence types could be the focus of an IQ assessment. Scott et al. (2005) reviewed Gifted and Talented Education Report (Council of State Directors Program for the Gifted, 1999) and this report included various definitions for gifted and talented for the different states. For example;

> Idaho Definition: Gifted and talented means those students who are identified as possessing demonstrated or potential abilities that give evidence of high performing capabilities in intellectual, creative, specific academic or leadership areas, or ability in the performing or visual arts and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities (Council of State Directors Program for the Gifted, 1999).
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> Georgia Definition: Gifted student –a student who demonstrates a high degree of intellectual and /or creative abilities, exhibits an exceptionally high degree of motivation, and /or excels in specific academic fields, and who need special instruction and /or special ancillary services to achieve at levels commensurate with his or her abilities. (Council of State Directors Program for the Gifted, 1999)

Different countries prefer to apply different kinds of IQ identification procedures. For instance; Scholastic Aptitude Test-Mathematics (SAT-M), Scholastic Aptitude Test Verbal (SAT-V), American College Testing program (ACT) tests are used in order to identify talented students for seventh grade students in USA (Davis and Rimm, 1998).

Based on the literature, we can say that there is no one definition and one type of assessment device for gifted students.

Another perplexing phenomenon is underachieving gifted students. Definition of gifted underachievement as a discrepancy between potential and performance are by far the most common (Reis &McCoach, 2000). Clark (1997) concentrated primarily on three factors associated with underachievement among the gifted: home and parental variables, personality characteristics, and school related factors.

Self-concept, perfectionism, competition, and actual school situations are closely tied to underachievement among gifted students (Başlantı, 2008). Reis and McCoach (2000) listed general traits that underachievers exhibit in their study. Some of them are;

- Low self-esteem, low self-concept, low self-efficacy
- Negative attitude toward school
- Possessing poor self-regulation strategies
- Depression
- Lack of goal directed behavior
- Attributing successes or failures to the external factors
- Lack of insight and critical ability

McCoach and Siegle's (2003a) study examined the differences between gifted high achievers and underachievers in terms of general academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation and self-regulation and goal valuation using the SAAS-R.

1.1. Statement of the hypothesis

There is no significant difference between gifted achievers and gifted underachievers on general motivation, self-regulation, attitudes toward school, and attitudes toward teachers, goal valuation, and academic self-perception.

2. Methodology

2.1. Participants

Participants for this study were selected from Institute of Gifted and Talented Students which provides special education for gifted students including extracurricular activities, mind games, creativity, and project management. The study sample consisted of two groups. One group was gifted achievers and the other was gifted underachievers. The criterion for choosing the groups was students' GPAs. Students who had GPA's 85 and above out of 100 were considered as achievers and students who had GPA's between 49 and 84 were underachievers. Students were from 3th, 4th, 5th and 6th grades. 35 of the participants were gifted achievers and 24 of them were gifted underachievers. The sample consisted of 36 males and 23 females. In addition, there were 8 students from 3rd graders, 23 students from 4th graders, 18 students from 5th graders, and 10 students from 6th graders.

2.2. Instrument

The school Attitude Assessment Survey-R contains 43 items designed to measure five factors of interest in this study: academic self-perceptions, attitudes toward teacher, attitudes toward school, goal valuation and motivation/self-regulation. The instrument utilizes a seven-point Likert scale ranging from "strongly disagree" to "strongly agree". Researchers (McCoach & Siegle, 2003b; McCoach, 2002) provided evidence of the construct validity and reliability of the instrument. It was 0.88 for the 4-item attitude toward teachers subscale, 0.85 for attitude toward school subscale, 0.82 for the 5-item Academic Self-Perceptions subscale, 0.92 for the 6-item Goal Valuation subscale, and 0.94 for the 11-item Motivation/Self-Regulation subscale. The scores for this instrument showed internal consistency reliability coefficient of at least .85 on each of the five factors (McCoach & Siegle, 2003b).

2.3. Procedures of data collection and analysis

The survey was applied to 59 students from Institute of Gifted and Talented. 35 of them were gifted achievers and 24 of them were gifted underachievers. T-test was used to understand whether there is a significant difference between the two groups in terms of the given factors or not.

3. Results

The scores of both high achiever and underachiever students by SAAS-R were analyzed in this study. One group is 24 gifted underachiever students and the other group is 35 achiever gifted students. Following tables show t-test results of high achiever and underachiever gifted students in terms of factors respectively (academic self-perception, attitude toward school, attitude toward teacher, motivation and goal valuation).

Table 1. Independent samples test for five sub scales

	Achievement						95% CI for Mean Difference			
	High			Low						
	M	SD	n	M	SD	n		t	df	Sig. (2 tailed)
Self-perception	58.36	5.54	35	42.81	4.96	24	12.61, 18.48	10.62	57	0.00
Att. teacher	48.89	8.77	35	32.92	6.93	24	11.68, 20.25	4.76	57	0.00
Att. school	43.65	7.12	35	34.04	8.17	24	5.56, 13.65	6.80	57	0.00
Goal valuation	47.82	1.53	35	38.71	6.17	24	6.91, 11.32	8.28	57	0.00
Motivation	72.52	13.27	35	48.08	13.54	24	17.24, 31.63	6.81	57	0.00

The t test results show that there is statistically significant difference between the mean scores of the 24 underachievers and those of 35 high achievers in terms of academic self-perception, attitude toward teacher, attitude toward school, goal valuation, and motivation ($p < 0.05$).

Table 2. Class report

Class		Selfper	Teacher	School	Goal	Motivation
3	Mean	60.00	52.13	48.50	48.25	77.75
	N	8	8	8	8	8
	Std. deviation	3.63	4.12	0.75	0.71	7.92
4	Mean	53.59	46.22	41.52	44.55	62.33
	N	22	23	23	22	21
	Std. deviation	9.17	8.86	5.69	5.63	18.86
5	Mean	50.00	35.88	34.53	40.77	57.88
	N	17	18	17	18	18
	Std. deviation	9.89	11.99	10.61	7.60	19.04
6	Mean	44.87	34.50	32.10	38.50	57.40
	N	8	10	10	10	10
	Std. deviation	5.59	10.33	9.24	3.50	14.65

The mean scores of the five sub scales decrease as the grade level increases.

4. Discussion

The goal of this study was to analyze the reasons of underachievement of gifted students who are attending Institute of Gifted and Talented Students. In order to reach this goal, School Attitude Assessment Survey-Revised was used. The instrument consists of 43 questions and the questions focus on five key factors that can be considered as the main reasons for underachievement. According to t-test results; there is significant difference between underachievers and high achiever students in terms of self-perception, attitude toward school, attitude toward teacher, motivation, and goal valuation. This means that underachievers have low self-perception, low attitude toward their teacher and school, low motivation and goal valuation with respect to high achievers.

According to t-test results, the greatest mean difference between gifted achievers and underachievers was in motivation. The mean score of gifted achievers was over 1.5 points higher than that of the gifted underachievers. The results suggest that using motivation factors of the SAAS-R may help teachers and counselors to identify gifted students who are at the risk of underachieving in primary schools. Educators should identify whether gifted students are motivated to attain the goal of the school and curriculum. Many students may underachieve because they find no intrinsic or extrinsic benefits of school. In addition, interventions that make classes more enjoyable and intrinsically motivating for students may help to reverse academic underachievement.

According to the class report, we can see that the mean scores of five sub factors are decreasing as the grade level increases. This means that, gifted students have maximum self-perception, attitude toward school and teacher, motivation, and goal valuation when they are at their small ages. This may stem from perfectionism. As they get older, they become more perfectionists and they want to be in the best conditions. Although they develop different interests in different areas, the environment may not satisfy their interests.

4.1. Limitations and Future Research

One limitation of this study is that it focused exclusively on personal characteristics associated with underachievement. We did not include any learning disabilities, ADHD, or other medical, emotional, or psychological problems of the students in our study. Academic underachievement can sometimes be an indicative of more serious physical, mental, or emotional problems such as learning disability, ADHD, or hearing impairment. Therefore, the school personnel should screen underachieving gifted students for a wide variety of physical, mental, and, emotional problems before the intervention.

Secondly, the number of participants is limited. There were only 35 high achievers and 24 underachievers. A bigger sample size would be better in order to get more satisfactory results. The sample of the study consists of only 3rd, 4th, 5th, and 6th grade students; there is no data for other graders. Therefore, it may be difficult to generalize the results to all gifted underachievers.

Future research should begin to explore the casual relationships between these five sub factors and academic achievement by collecting longitudinal data on gifted achievers and underachievers. In addition, there was a great deal of variability in the underachievers' mean scores for the five factors. Therefore future research could try to document quantitatively the existence of different subtypes of gifted underachievement.

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