

DOCUMENT RESUME

ED 452 338

UD 034 165

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TITLE A Longitudinal Study of the Course of Academic Achievement of Urban and Minority Gifted and General Education Students.
PUB DATE 2001-04-11
NOTE 22p.; Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *Academically Gifted; *Black Students; Elementary Secondary Education; Grades (Scholastic); *Graduation; Low Income Groups; Scores; Socioeconomic Influences; *Urban Schools

ABSTRACT

This study examined patterns of academic progress and outcomes in different inner city school settings (identified as gifted or general education) for African American and White lower, middle, and upper socioeconomic strata students. It followed 287 students' progress from kindergarten through their graduation year, 185 of whom were considered gifted and enrolled in a self-contained gifted program for all subjects in elementary school and core academic subjects in secondary school. Students' grades for math, reading, and science were recorded over time. Overall academic outcomes (grades and standardized test scores) were higher for gifted students enrolled in the program sometime during their school career than for general education students. Graduation rates were higher for gifted students who remained in the gifted program than for gifted students who left for general education or for general education students. Though the gifted program retained more African American than White students, a substantial group of African American students went to the general education program. White students remained in the gifted program at a higher rate than they did in the general education program. Income was a factor in gifted students' graduation outcomes and grades, and standardized test scores varied by grade, program placement, race, and gender. (Contains 13 references.) (SM)

A LONGITUDINAL STUDY OF THE COURSE OF ACADEMIC ACHIEVEMENT OF URBAN AND MINORITY GIFTED AND GENERAL EDUCATION STUDENTS

Elizabeth A. Rose

Paper presented at the 82nd Annual Meeting of the American Educational Research Association
Seattle, April 11, 2001

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A longitudinal study of the course of academic achievement of urban and minority gifted and general education students

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(Paper Presentation for AERA National Conference, April 11, 2001, in Seattle, WA)

Introduction

The characteristics and programming needs of gifted students in general, and those of urban, minority students, specifically, seem to differ from those of the regular education middle class majority. Being an African-American youth from an inner-city, who is gifted may be an experience so different from the mainstream that our current theories about gifted education and education, in general, may not apply (Bireley & Genshaft, 1991, Exum, 1983, Ford, 1992a, 1992b, Ford, Harris, & Schuerger, 1993, Ford & Webb, 1994, Fordham, 1988, Frasier & Passow, 1994, Milner & Blyth, 1989).

What is happening to inner-city students in public school programs? What is the academic profile of a poor urban, inner-city student, or a minority gifted student? Where are the pitfalls, the boons in our educational approaches? Some reviews of research suggest that there seems to be little interest in the situations of culturally different or disadvantaged gifted students (Torrance, 1998). This lack of interest in the plight of minority and poor gifted students, and lack of attention to contributing factors of both between-group and within-group differences has resulted in research findings lacking in clarity for gifted students, and especially for inner-city minority gifted students. (Frasier, 1989, Frasier & Passow, 1994, Kitano, 1991). If appropriate, positive and successful

educational program plans for majority and minority students, as well as for disadvantaged gifted students, are to be put in place, such factors must be studied for best practices to be determined.

Finally, to effectively meet the needs of all children research factoring the role of poverty in achievement, regardless of gender, race or cultural background is needed. Research by Johnson, Miranda, Sherman and Weill (1991) suggests that we do not yet understand the extent of the impact poverty may have. The research on gifted poor children is scarce and inadequate at best. Is a gifted child impacted differently by growing up in an impoverished environment? Not only do the questions themselves need to be asked, these areas of inquiry necessitate research endeavors.

Therefore, this research was pursued to consider the pattern of academic progress and outcomes in different inner-city urban educational settings for African-American and Caucasian lower, middle and upper socio-economic strata students identified as gifted and general education. The rationale for this study is that such an endeavor would be a considerable contribution to our knowledge base and would begin to allow for a research based approach to efficacious planning for this unique group of talented young people. For the purpose of this presentation, emphasis will be given to a limited number of the academic factors considered within the elementary school years, as well as to the overall academic outcome of graduation from high school.

It is from the theoretical framework of developmental contextualism that the study of the academic progress of inner-city and minority gifted and general education students was considered. Developmental contextualism calls attention to the unique and multilevel aspects of change in human behavior; and further, seeks to study the interrelationship of these continually changing levels as they relate to individual behavior change.

Information was gathered on the novel context for behavior that was presented by the unique situation, history and characteristics of each individual. In other words, behavior was not studied in a social or environmental vacuum.

Instead the complex arrays of variables unique to each individual, such as educational, social, demographic and familial differences, to name a few were considered in understanding behavior. Therefore, this study has a quantitative and a qualitative component. Selected factors from the groups of demographic and school factors considered by this study will be discussed here. For the purposes of this discussion, quantitative home and social factors will not be considered here. Moreover, Qualitative aspects of this longitudinal study will not be considered for the purposes of this presentation.

Methods

This longitudinal study followed the academic progress of two hundred and eighty-seven (287) inner city and minority students from their kindergarten year until their class' graduation year. One hundred and eighty-five students (185), who were identified as

gifted and enrolled in a self-contained gifted program for all subjects in elementary, and for core academic subjects for middle and high school, were included in this study. In addition, the progress of a group of one hundred and two (102) grade-mate peers in four classrooms from the same school population, matched to the senior classrooms of gifted students, but enrolled in a general education program, was followed. The gifted and general education students' grades for the core academic subjects of math, reading (or English) and science were recorded from kindergarten through their senior year. This large urban school district from a mid-sized, mid-western city was made up of 25,500 students. The racial make-up of the school district was approximately 70% African-American students and 30% other, including Caucasian, Hispanic and other cultural and ethnic student groups.

The following percentages of students by race and by gender were included in the gifted and general education sample studied:

Table 1.

Numbers of Gifted and General Students by Race

Race	Gender	Gifted		General Education		Total	
		Number	Percent	Number	Percent	Number	Percent
African-American							
	Female	65	35%	35	34%	100	35%
	Male	45	24%	27	26%	72	25%
Total African American		110	59%	62	60%	172	60%
Caucasian							
	Female	38	21%	17	17%	55	19%
	Male	37	20%	23	23%	61	21%
Total Caucasian		75	41%	40	40%	115	40%
Total		185	100%	102	100%	287	100%

Student groups to be considered for outcomes are identified by their placements in twelfth grade. These student groups are:

- 1.) Gifted-movers: gifted students who leave the school district,
- 2.) Gifted-program-leavers: gifted students who leave the gifted program to enroll in the general-education program,
- 3.) Gifted program remainers: gifted students who remain in the gifted program,
- 4.) General-movers: general-education students who leave the school district; and,
- 5.) General-program-remainers: general-education students who remain in the general-education program.

The student remained in the gifted or general-education program if he/she was enrolled up to the end of senior year in high school. The student left the gifted or general-education program if he/she was not enrolled prior to the end of senior year in high school.

Selected academic factors considering the educational progress of the gifted and general education students to be discussed here include:

- a) The final academic outcome by the student's senior year: graduation or not.
- b) Grades: The grades considered for this presentation were those attained for math, reading and science in elementary.
- c) The Iowa Test of Basic Skills (ITBS) standardized test scores attained in reading and math in elementary grades one through five; and,
- d) The Michigan Education Assessment Program (MEAP) Science and Math Score Percent.

Results

Graduation or Not

There were no significant differences between the grades in which gifted students were identified as gifted and graduation rate. However, there was a trend for those identified earlier to remain in the gifted program through to their senior year.

There were significant differences between graduation rates for gifted and general-education students by placement in twelfth grade. The gifted-program-remainers

graduated at the highest rate (98.6%). Gifted-program-leavers graduated at the lowest rate (77%), in comparison to general-program-remainers (79%).

More African-American students remained in the gifted program through to twelfth grade than did Caucasian students. The African-American females gifted-program-leavers graduated at a rate of eighty percent (80%), while African-American females general-program-remainers graduated at a rate of eighty-eight percent (88%). These rates are higher than the African-American male gifted-program-leavers, who graduated at a rate of sixty-four percent (64%), while African-American male general-program-remainers graduated at a rate of seventy-one percent (71%). African-American males who left general-education also left the district, so their graduation information is missing. Less Caucasians remained in the general-education program, but they graduated.

Graduation rate for general-education students by relative income and by the placement in twelfth grade was not significant. Graduation rate for gifted students by relative income and the placement in twelfth grade was not significant. However, a trend suggests that a higher percentage of the poverty group gifted students were represented in the group of gifted students who left the district and did not graduate. Gifted and general-education placements in twelfth grade by race and gender suggest trends for income by placements. A higher percentage of students who were low income left the gifted program (gifted-program-leavers), the greater of which were African-American females. Higher income gifted students were represented evenly in all gifted groups: gifted-movers, gifted-program-leavers and gifted-program-remainers.

Grades

The patterns for grades attained, was not significant overall. For the most part, the patterns remained the same over time. However, the difference between the groups was significant by program identification: general education or gifted, by race and by gender. These groups remained consistently within their percentiles over time, especially in elementary.

Elementary Reading Grades

Reading grades, assigned by teachers on a four-point scale, for first through fifth grades for gifted and general-education students were analyzed for differences by race, gender and placement in twelfth grade through a repeated measures ANOVA. Differences between subjects were significant at the .05 level for race, placement in twelfth grade and gender. Within student group differences were significant at the .01 level for reading grades. There was an interaction within student groups significant at the .05 level for reading grades and race.

Reading grades were highest for gifted and general-education students in first grade (mean = 3.47). Reading grades dropped each year to a mean low of 3.22 in fourth grade and rose to a mean of 3.25 in fifth grade.

Gifted-program-remainers attained the highest overall mean reading grades (mean = 3.40), followed by gifted-movers (mean = 3.56). General-program-remainers attained the lowest overall mean reading grades (mean = 2.92).

Caucasians attained higher mean reading grades (3.41) than African-Americans (3.23). Whereas, females attained higher mean reading grades (3.41) than males (3.23).

Students varied in their reading grades by race. Caucasian (mean = 3.45) and African-American students reading grades (mean = 3.49) are fairly commensurate in first grade. Thereafter, Caucasians mean reading grades are consistently higher at each subsequent grade level.

Elementary Science Grades

Differences in science grades, assigned by teachers on a four-point scale, were investigated through a repeated measures ANOVA, for fourth through fifth grade gifted and general-education students by race, gender and placement in twelfth grade.

Differences between student groups were significant at the .01 level for race, placement in twelfth grade and gender. The between group interaction of race and placement in twelfth grade was significant at the .05 level. Variability within student groups was significant at the .01 level for science grades.

The mean fourth grade level science grade (3.44) was higher than the mean fifth grade level science grade (3.17). Moreover, all groups of gifted students have higher science grades than all groups of general-education students. The highest mean elementary science grades were attained by the gifted-program-remainers (3.73), followed by those gifted-movers (3.60) and gifted-program-leavers (3.52). The lowest mean science grades

were for general-movers (2.66) and general-program-remainders (3.04). Finally, the mean science grades were higher for Caucasian students (3.44), than for African-American students (3.17), and for females (3.47), than for males (3.15).

The between subjects interaction was for race and place in twelfth. The African-American gifted-movers received higher grades, on the average, in science than their Caucasian counterparts. For all other groups considered, the African-American gifted and general-education students received lower science grades than their Caucasian peers.

Elementary Math Grades

A repeated measures ANOVA analyzed differences between gifted and general-education students for math grades, assigned by teachers on a four point scale, for first through fifth grades by race, gender and placement in twelfth grade. Between-subjects differences for mean math grades by grade level were significant at the .05 level for race and at the .001 level for placement in twelfth grade. Within-subjects differences for mean math grades by grade level and an interaction for mean math grades by grade level and placement in twelfth grade were significant at the .001 level.

The means for math grades by grade level for grades first through fifth grades are at the highest level (3.44) in first grade and consistently drop every grade level to a mean of 2.79 in fifth grade. By student group, gifted-program-remainders have the highest mean math grades (3.57), followed by gifted-movers (3.43). The lowest mean math grades were attained by general-program-remainders (2.79). Moreover, African-American

students received lower mean math grades for grades first through fifth grades (3.09) than Caucasians (3.29).

There is an interaction between mean math grades and placement in twelfth grade. The gifted students begin at the same math grade level in first grade. The general-education students begin at a lower, but common grade point range in first grade, as well. By second grade gifted-movers and gifted-program-leavers are at a lower math grade point average, which they maintain in relation to the gifted students who remained in the gifted program through fifth grade.

By third grade, the general-movers and general-program-remainers drop to a lower math grade point average than any other group considered. Nevertheless, the general-program-remainers are higher than their general-education counterpart by the fifth grade and are commensurate with the mean math grades for the gifted-program-changers. However, the general-movers and general-program-remainers have the lowest math grades of all groups considered by the end of fifth grade.

ITBS

ITBS Reading Percentiles

The Iowa Test of Basic Skills (ITBS) is a nationally standardized achievement test. An ANOVA for ITBS reading percentile scores for first through fifth grades for gifted and general-education students for differences by race, gender and placement in twelfth grade was completed. Between-subject differences for race and placement in twelfth grade

were significant at the .001 level. Differences within-student groups were significant at the .001 level for ITBS reading percentile scores.

The mean ITBS reading percentile scores for Caucasian students was higher (68.51%ile) than those of African-American students (58.44%ile). The percentiles also varied by mean score according to the placement in twelfth grade, with gifted student groups scoring consistently higher than general-education student groups.

Gifted-movers scored a higher mean percentile score (81.68%ile) than gifted-program-remainders (77.62%ile) and gifted-program-leavers (70.09%ile). General-movers (45.39%ile) scored higher mean ITBS reading scores than general-program-remainders (42.58%ile). Overall ITBS reading percentile means were highest in second grade (67.33%ile) and lowest in third grade (60.47%ile).

ITBS Math Percentiles

An ANOVA for ITBS math percentiles for first through fifth grades for gifted and general-education students for differences by race, gender and placement in twelfth grade was completed. Between-subjects differences for race and placement in twelfth grade were significant at the .001 level. Within-subjects differences were significant at the .001 level for ITBS math percentiles by grade and by placement in twelfth grade.

The mean ITBS math percentile rankings were lower for African-American students (66.28%ile) compared to their Caucasian peers (75.97%ile) (Table 51, page x). The

highest mean ITBS math percentile scores by student group were attained by the gifted-program-remainers (86.23%ile), followed by gifted-movers (84.79%ile). The lowest mean ITBS math percentile scores by student group were attained by the general-program-remainers (49.44%ile), followed by general-movers (54.80%ile).

By grade level, the highest mean ITBS math percentile score was attained in second grade (77.47%ile), followed by the first grade math percentile score (74.66%ile). The math percentile scores consistently drop from third grade (69.52%ile) to fifth grade (66.27%ile).

There was a within-student group interaction between ITBS math percentile score and placement in twelfth grade. All gifted student groups scored consistently higher than general groups. However, gifted-movers started out in first grade at a higher mean ITBS percentile score and were lower in fifth grade than the gifted-program-remainers.

Similarly, the general-movers started out in first grade at a higher mean ITBS percentile score and were equivalent to the general-program-remainers by fifth grade.

MEAP

MEAP Math 4th Grade

The Michigan Educational Assessment Program (MEAP) math test fourth grade percentile scores for gifted and general-education students were considered for differences by race, gender and placement in twelfth grade. The results of an ANOVA showed no difference for these factors between gifted and general-education students.

The mean MEAP Math percentiles were highest for those general-education-remainers (mean = 89.92) and for gifted-movers (mean = 89.07). The lowest mean MEAP Math percentiles were obtained by gifted-program-leavers (mean = 84.57) and for general-movers (mean = 87.48).

MEAP Science 5th Grade

The Michigan Educational Assessment Program science test fifth grade percentile scores for gifted and general-education students were considered for differences by race, gender and placement in twelfth grade. The results of an ANOVA demonstrate a significant difference at the .05 level for race and MEAP fifth grade science test scores. African-American students attained lower science percentile rankings, on the average (mean = 79.39 %), than did Caucasian students (mean = 85.68%). It is interesting to note that although gender, race and gifted or non-gifted identification were variables considered, the only characteristic differentiating groups at a statistically significant level was race.

Implications of the Study

Addressing the research issue of the pattern of academic progress within differing program formats for urban minority general education and identified gifted students is necessary in planning for the development of their full potential. It is this author's opinion that, by far the most important implication, for this study of the course of academic achievement throughout the school career of a group of urban minority gifted

and general education students, was the high graduation rate for those identified gifted students who remained in the gifted program until graduation.

All but one gifted student who remained in the gifted program graduated and this student did not for health reasons. The other 74 gifted students graduated. In comparison the gifted students who left the program to enroll in general education (gifted-program-leavers) graduated at a rate of 77%. Of these 52 students who left the gifted program, 12 did not graduate. The graduation rate for the general-education students who remained in their program through twelfth grade (general-program-remainers) was 79%. It is notable that of these 46 general-education students, 12 also did not graduate. When the 98.6% graduation rate for gifted students who remained in the gifted program is compared to the lower graduation rate of 77% for gifted students who left for the general education program and to the 79% graduation rate for general education students who remained in their general education program, there is the implication that without gifted program intervention, urban minority gifted students may be more at risk for not graduating than their general education peers.

Therefore, the graduation rate of the students who left the gifted program for general education was dissimilar to that of the graduation rate of gifted students who remained. Remaining in the gifted program did increase a gifted student's chances of graduating from high school. This result suggests that gifted students are more at risk for academic failure within a general education than within a gifted setting.

The gifted program retained more African-American students than Caucasians. However, Caucasians also remained in the gifted program at a higher rate than they did in the general-education program.

Although the gifted program did have greater holding power for African-American students compared to Caucasians, a substantial group of African-American students went to the general-education program. An interesting phenomenon was the loss of African-American females from the gifted program, who subsequently all graduated, while fewer African-American males who went to general education graduated. Reasons for these results may hinge upon the social and peer group pressures these students experienced. Both African-American females and males may be reacting to differing pressures to be accepted by their peer group.

Graduation outcomes were not notably different for general-education students of low, median and high-income brackets. However, income does appear to be a factor in the graduation outcomes of gifted students. 100% of the higher-income gifted students graduated. The graduation rate for the median-income group of gifted was 90%, while the graduation rate for the lowest relative income group of gifted students was 85%. This result suggests that giftedness in children living in poverty may have an additive effect for being at-risk for adverse educational outcomes in comparison to their non-gifted peers.

Both grades and standardized test scores vary by grade, program placement, race and gender. Variation by program placement in each set of variables was expected, but differentiation by grade level, and to a greater extent, by race and gender was not expected. Fluctuations in scores and grades by level calls into question curriculum consistency and quality. Variation in scores and grades by race and gender is more difficult to explain. One would certainly hope that schools do not differentiate student achievement by attributes associated with racial, ethnic or gender characteristics. Further exploration of the data may reveal more explanations for these unexpected outcomes.

Results suggesting that the MEAP fourth grade math test did not significantly differentiate any student group from another were also unexpected. The general-program-remainers' mean score was slightly higher than that of the gifted-program-remainers and the gifted-program-leavers. The lowest mean MEAP math score was attained by the gifted-movers.

The outcome concerning the MEAP fifth grade science test which differentiated student groups by race only was unexpected. The mean MEAP science score for African-American students (79.39%) was lower than the score attained by Caucasians (85.68%).

In contrast to the MEAP score means attained, the mean reading grades significantly differentiated student groups. For example, gifted students, consistently scored higher, than general-education students. It also differentiated students by race and gender. Moreover, the analysis of math grades, science grades and ITBS scores yielded similar

results: there were distinctly different outcomes for gifted and general education student groups.

Questions arise from this lack of significant differences between these student groups on the MEAP math scores and the distinctions made by race only on the MEAP science scores. What is different about the MEAP fourth grade math test that causes student group outcomes to be similar on this measure regardless of consistent and significant differences by gifted and general education group on other measures such as grades or standardized achievement test scores? Why does the MEAP science test distinguish by race, but not by program placement? These are important questions to answer due to the emphasis placed upon state assessments.

In conclusion, overall academic outcomes such as grades and standardized test scores were higher for gifted students who were enrolled in the program sometime during their school career than for general-education students. The overall graduation rate was higher for gifted students who remained in the gifted program than for those gifted who left for general-education classes, or for general-education students. Such results suggest that best practice for an appropriate, positive and successful educational program for gifted urban students, as well as for disadvantaged urban gifted students, may well include a self-contained gifted program.

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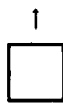
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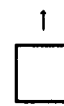
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EFF-088 (Rev. 9/97)