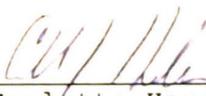


**THE ACADEMIC ACHIEVEMENT OF ADOLESCENT FEMALE
GIFTED STUDENTS**

THERESA OPHELIA MUCKLEROY

To the Graduate Council:

I am submitting herewith a field study written by Theresa Ophelia Muckleroy entitled "The Academic Achievement of Adolescent Female Gifted Students." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Educational Specialist, with a major in Educational Administration and Supervision.



Dr. Carlette Hardin, Major Professor

We have read this field study and recommend its acceptance.



Dr. Susan Simms



Dr. Penny Masden

Accepted for the Council:



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Date April 11, 2002

The Academic Achievement of Adolescent Female Gifted
Students

A Field Study
Presented to the
Graduate and Research Council of
Austin Peay State University

In Partial Fulfillment
Of the Requirements for the Degree
Educational Specialist

Theresa Ophelia Muckleroy

May 2002

DEDICATION

This project is dedicated to my husband, Lee Muckleroy. He is always there to support and inspire me to achieve my goals.

ACKNOWLEDGMENTS

I would like to express my gratitude and appreciation to the professors on my field study committee at Austin Peay State University. Dr. Carlette Hardin, Dr. Susan Simms, and Dr. Penny Masden are exceptional role models for females in the professional educational world and have inspired me to continue with my goals and dreams.

ABSTRACT

This research attempted to determine if school achievement differed in adolescent gifted female and male students. Achievement scores, A.C.T. scores, and enrollment in advanced and Advanced Placement classes were compared between the two groups to note any statistical differences. No significant differences were found in the A.C.T. scores or enrollment in advanced and Advanced Placement classes between gifted male and female adolescent students. On achievement tests, there was a significant difference in the language scores indicating the female students slightly outperformed the males. However, on the math subject area of the achievement test, there was no significant difference in the scoring of the two groups. School achievement of adolescent gifted students does not appear to be affected by the sex of the student. Gifted female adolescent students performed as well, or better than, gifted male adolescent students.

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CHAPTER I

INTRODUCTION

Adolescents exhibit multidimensional and complex personality and character traits. Studies indicate that this is truer of females than males (Kerr, 1994). At an early age, gifted females exude high self-esteem and satisfaction in their world. They are outspoken and confident in their abilities. These feelings of self-confidence are displayed in the classroom, on athletic fields, and in social situations. However, with the onset of adolescence come feelings of insecurity, lack of self-esteem, and doubt in oneself. There are external barriers, as well as internal barriers, which influence gifted females' achievement. Gifted females are not achieving their potential due to these barriers. This, in turn, results in a lack of females in high school advanced placement classes, as well as challenging college courses. Many girls identified as gifted in elementary school do not become gifted women. The change in gifted females' self-concept from elementary to high school is instrumental in their lack of success (Kerr, 1994).

Kerr (1994) observes: "It is a national tragedy that so few of gifted women have attained eminence while the

remainder accept obscurity. How long can society continue to squander the brilliance of gifted women" (p. 240)?

The educational system is not meeting the needs of gifted females. Schools must prepare both girls and boys to become active and influential in their families, communities, and the work force. Schools must build a culture that supports choices for both females and males.

This was a study to examine the academic differences in female gifted students and male gifted students through the adolescent years. Examining the academic differences of these groups could be helpful to educators in developing and designing programs to address the needs of this special underachieving population.

Statement of the Problem

Adolescence marks the time of declining self-esteem for gifted girls. Sexism and discrimination, both external and internal, destroy the confidence and self-concept of gifted females (Reis, 1998). This means that gifted females waste their abilities by adjusting to what others expect from them, rather than developing their potential. Due to these limitations, gifted females are an underachieving population.

Importance of the Problem

Underachievement and underutilization of gifted girls and women is a fact. The attitudes and overt discrimination of our culture has created an environment that is hostile to feminine achievement. This is particularly true for gifted females, because they face the dilemma that having talent brings to the position of females in our society. While women make up nearly half of the labor force, only one in five workers in science and engineering are female. For gifted females to fulfill their potential and their responsibilities to society, there are two requirements. First, the gifted female must be willing to accept her giftedness and to understand it as a promise to be fulfilled. Second, the educational society must take substantial responsibility for the guidance of gifted girls and for creating situations that nurture, inspire, and develop a better self-concept in gifted females.

Research Questions

The following research questions were explored in the study:

1. How do achievement scores of previously identified female gifted students and previously identified male gifted students differ?

2. How the enrollment numbers in high school advanced and Advanced Placement classes of previously identified female gifted students and previously identified male gifted students differ?
3. How do the A.C.T. scores of previously identified female gifted students and previously identified male gifted students differ?

Hypotheses

The following null hypotheses were tested:

1. There will be no significant difference between the achievement scores of previously identified female gifted students and previously identified male gifted students.
2. There will be no significant difference between the enrollment numbers in high school advanced and Advanced Placement classes of previously identified female gifted students and previously identified male gifted students.
3. There will be no significant difference in the A.C.T. scores of previously identified female gifted students and previously identified male gifted students.

Definitions of Terms

The following definitions are provided for better understanding of certain terms that were used in this study:

1. gifted- gifted students as identified by the Clarksville-Montgomery County School System (total I.Q. 130 or above and ninety-sixth percentile on Total Reading, Language, or Math on T.C.A.P.)
2. self-concept- a person's perception of self
3. achievement scores- the math and language total scores on the Tennessee Competency Achievement Program (The achievement tests given in the state of Tennessee, which require students to obtain a 70% in order to graduate prior to 2005.)
4. A.C.T. scores- American College Testing Program are predictive tests that students take to indicate how well they will perform in college. The scores also help determine a college's acceptance of the student.
5. A.P. classes- Advanced Placement classes are classes that enable high school students to take courses that earn college credits. The students must achieve a required score on an Advanced Placement test at the end of the course to obtain college credit.

6. advanced classes- Classes which progress at a faster pace than average classes and require a more in-depth level of commitment from the student. Students enrolled in these classes are teacher-recommended based on students' previous performances.

Assumptions

The following assumptions applied to this study:

1. The students' scores that were examined were identified gifted students during the 1997-1998 school year in the Clarksville-Montgomery County School System and were presently enrolled in the Clarksville-Montgomery County School System.
2. Test scores were accurate indications of student abilities.
3. The students' scores that were examined were currently enrolled in high school.

Limitations

The following limitations applied to this study:

1. This study was limited to gifted students in a single school system in the Southeast.
2. The sample of students whose data was analyzed was limited to those who were identified in 1997-1998

and were still in the Clarksville-Montgomery County⁷
School System in high school.

3. This study did not compare any data of non-gifted students.

Preview

This study reviewed current research concerning the academic achievement and fulfillment of potential of female gifted students. Achievement scores, advanced and advanced placement class enrollment, and ACT scores were analyzed to note the differences between female and male gifted students. Analysis of this data provided information to enable educators to effectively assist and educate female gifted students in making the appropriate life and educational choices.

CHAPTER II

REVIEW OF LITERATURE

Underachievement of Gifted Females

There is compelling evidence that indicates females are not receiving the same quality of education as males. The American Association of University Women Educational Foundation (1992) compiled a report entitled "How Schools Shortchange Girls" detailing the inconsistencies between the educations of the sexes. The authors of the report determined that women and girls were underrepresented in curriculum materials, that teaching behavior and tests tended to favor boys, and that girls trailed boys in mathematics and science. This report provided convincing data that suggested gifted females are still not achieving at the expected levels and are not choosing career options commensurate with their abilities.

Reis (1998) found that talented females are more critical and insecure in their abilities than other women, which makes them more vulnerable to social expectations and limitations than the average population. Giftedness does not exclude them from the detrimental effects of gender bias; in fact, quite the opposite is true. Gifted females have abilities that urge them forward to explore and excel,

but the educational world does not promote their exploration (Silverman, 1989).

Dr. Barbara Kerr provides information that answers the question of why many gifted girls fail to achieve their potential. In the book, *Smart Girls Two* (1994), she began her research by doing a qualitative study of her own former gifted female classmates. She did several follow-up studies on these same women. Their lives proved to parallel other gifted females in other research studies. These studies provide data to show that gifted boys and girls start out on equal footing in the early years with approximately the same number in gifted programs. However, by middle school, boys far outnumber girls in the gifted programs, which then translates to fewer girls in advanced high school math and science classes. Without these advanced classes, girls then limit their options in educational and career choices when they pursue college degrees.

Smart Girls Two also specifies that girls are more developmentally advanced in early years than boys, but begin to regress by adolescence. Girls' IQ scores begin to decline, as well as their abilities needed for success in adult life. Females hold more negative attitudes towards math than boys do. There are gender differences in self-confidence in high school and college. Fewer girls are

identified for gifted programs in middle school and high school compared to boys. Gifted adult women do not achieve high career status compared to their male counterparts.

Clark (1997) also found that during adolescence gifted females maintained academics at a high level, but lowered in IQ. This research also determined that between the ages of twelve and fourteen there is a noted decline in self-esteem in gifted females, and they take less rigorous courses in high school and become more socially engaged than gifted boys.

Internal Barriers

For gifted girls, the discrepancy between ability and self-image may assume different forms. Klein and Zehms (1996) did a study examining the self-concept scores of 134 gifted and non-gifted female subjects. The data indicated that the total self-concept scores of gifted girls declined significantly between grades three and eight and between grades five and eight. Eighth grade gifted girls had a much more negative sense of self in the cluster areas of behavior, intellectual and school status, and popularity than non-gifted girls in the same grade.

In a study of gifted females, grades one through twelve, Kline and Short (1991) found that as gifted girls grow up their self-confidence progressively declines, and

their perfectionist tendencies increase. Females' concerns about making mistakes increases from grade six to grade eight, while the pattern for males fluctuated insignificantly (Siegle & Schuler, 2000). Additionally, Callahan, Cunningham, and Plucker (1994) concluded in their study of sixth, seventh, and eighth grade gifted adolescent women that while none of the females directly expressed their own feelings of self-doubt in their abilities, their behaviors and the statements of the people around them provided evidence of such feelings. All of the participants contributed success to something other than extraordinary ability.

In another American Association of University Women (1991) study that included 3,000 students in fourth through tenth, it was found that as girls got older their self-esteem dropped dramatically. They began to lose confidence in their abilities around thirteen or fourteen and continued to decline in high school. This study also indicated that the decrease in girls' self-esteem was three times greater than boys. Reis (1998) continued this type of study with extensive interviews of gifted females and found insecurities in talented females at almost every age level. In one of Linda Silverman's (1993) numerous studies on gifted females, she found that girls who have high grade

point averages were more likely to be depressed than boys and suffered from lower self-esteem and psychosomatic symptoms.

In research by Arnold (1995) with high school valedictorians, it was found that by the second year of college over twenty-five percent of the female high school valedictorians had lowered their self-rankings of their intelligence. They indicated that they were merely of average intelligence. By contrast, male valedictorians remained consistent or actually improved. This pattern continued at graduation from college.

Also noted in the Lea-Wood's and Clunies-Ross' study (1995) of 158 adolescent girls, comparing the self-esteem of gifted and non-gifted female students, it was found that non-gifted female students were higher in both total and social self-esteem than the gifted girls. Additionally, the differences in total self-esteem were related to grade level.

Societal Influences

Not only do internal, self-inflicted barriers affect gifted girls' achievement, so do external, societal barriers. Reis' (1998) interviews with gifted females detailed such pressures. Girls and women are constantly surrounded by unrealistic body images. Many talented girls

are affected by the pressure to be attractive and seek approval of the males they date. As Mary Pipher (1994) noted, females in today's society are bombarded with stereotypes of the "perfect girl." Advertisements, television, and music videos all emphasize beauty above brains. The gifted females studied by Kramer (1991) deliberately tried to camouflage their abilities in order to avoid being seen as physically unattractive or lacking in social competencies.

Martha Ludwig (1996) conducted research with elite female Olympic athletes. She found that the female athletes continued to encounter the obstacles of traditional gender roles. They continued to try to juggle a career, a romantic relationship, and parenthood instead of a primary career focus like the male athletes.

Parental and Family Influences

Parents send mixed messages to their daughters by expecting them to get good grades, but requiring the stereotypical polite, well-mannered, helpless female. Interviews with both young girls and older women suggest that too much attention paid to manners in childhood can damage a gifted girl's attitudes and her ability to question and speak out. Parents' statements such as "don't interrupt, don't ask so many questions, don't raise your

hand so much, don't be so aggressive" promotes passivity in the female child. Children's beliefs about their own abilities were more strongly influenced by their parents' beliefs and attitudes about their achievements than the actual achievements themselves (Reis, 1998). In another study conducted by Reis (1995), she found that parents usually encouraged gifted females to do well in school, but provided little encouragement to pursue a career after college. Parents expected their daughters to marry and have families.

Recent research has found that gifted girls with career-oriented mothers tended to develop a variety of talents and feel less conflict about becoming independent, assertive women (Reis, 1998). By contrast, Lashaway-Bokina (1996) found that girls who had mothers who stayed home and watched soap operas tended to feel confused and unsure about their own talents. Their academic abilities, if developed, would lead to a completely different life from the one in which they live and which their mothers would always live. Family values and the choices families make for their daughters play an important part in female development (Hollinger & Fleming, 1993).

Schlosser and Yewchuk (1998) studied eminent Canadian women in an exploratory study that described their

reflections of their childhood. The purpose of the study was to find a common factor in childhood that might have influenced the success of these women. Seventy-six percent of the respondents indicated they were considered special or had a definite role as children within the family of origin. Those given special treatment most often attributed it to their birth order, scholastic achievement, condition of health, or display of talents. Family members expressed this specialness by bestowing an abundance of attention, love, and caring. Many participants reported having roles within the family or designated nicknames such as "the bookworm," "the brain," or "the responsible one." These participants had highly developed skills and abilities, which were valued by their parents and siblings. The recognition of these participants in childhood and their differences from their siblings led the way for adult distinction and prestige. By contrast, in a study by Reis (1995) of 67 gifted females enrolled in graduate programs in education, she found that the majority of these gifted females believed that their parents encouraged them to go to college but not to pursue a specific career. They felt that their parents encouraged a future that would be good for them in order to pursue potential future family obligations. Many were unsure about whether they had

selected the right career. It is necessary for parents to provide appropriate levels of encouragement and support to their daughters to pursue challenging goals and careers in the future. 16

School and Teacher Influences

While some progress has been made regarding females' attitudes about math and science, research has shown that females still tend to have delinquencies in these areas.

In Gipps and Murphy's 1994 study, Japanese girls scored lower than Japanese boys, but higher than American boys. These contradictions suggest that the academic differences between males and females are modifiable. Schools are important in the socialization and achievement of girls. When the belief that girls are better at English and poorer in science is reflected, different preparation is needed. Lack of mathematics preparation has become a barrier to the advancement of women in business, as well as higher education.

The discrepancies in science and math achievements and attitudes between males and females still continue today, as shown in the recent Joyce and Farenga (2000) study. The results of their study showed no significant difference between the number of science courses selected by high-ability and average-ability girls. This finding suggested

that the girls' behavior – selection of science courses – might be related more to their gender than their academic abilities.

In 1994, Strauss and Subotnik conducted a study of teenage males and females to determine their confidence in their mathematical abilities in school. They determined in their study that on a scale of one to four (four being most comfortable) males averaged 3.1, and females averaged 2.8 in their comfort level for sharing a solution in math class. The degree of confidence before a math exam averaged 2.6 for males and 2.1 for females. These studies indicated that math confidence is more highly correlated with math performance than any other variable. Therefore, if females do not have a strong self-confidence in their mathematical abilities, then their mathematical performance in school will be affected.

Siegle and Reis (1998) conducted a study to determine whether female gifted students viewed the quality and importance of their work, effort, and ability differently than male gifted students, and whether teachers perceived male and female students differently in the areas of mathematics, language arts, social studies and science. The study was conducted with a sample of 5,385 fourth through eighth grade students and their teachers. All of the

students were identified as talented and gifted by their respective school districts. The data showed that females were perceived by classroom teachers to work harder and produce higher quality work than males. In addition, the only difference in ability of gifted male and female students was in the content area of language arts. Females were rated higher in that area. This finding may represent some progress with teachers regarding gifted females' abilities in the areas of math and science.

However, the females' perceptions of their own abilities did not indicate the same progress. Gifted males reported firmer beliefs about their own abilities than did the gifted females in mathematics, social studies, and science. Again, the research indicated that a key factor in keeping gifted females involved in higher-level mathematics and science courses is their self-perception of their own ability.

Females' self-perceptions are partially determined by teachers' responses to their work. Based on a three-year study of over 100 fourth, sixth, and eighth grade classrooms, Sadker and Sadker (1994) identified four different types of teacher responses: praise, acceptance, remediation, and criticism. Males received more of all four types of teacher responses. If a teacher specifically

evaluated a student's performance, the student receiving the response was more likely to be male.

Importance of Role Models, Mentors and Career Guidance

Gifted females need to be able to share and learn from role models and mentors in an environment of self-acceptance and exploration. In the study done by Battle, Grant, and Heggoy (1995), the students indicated that the most influential aspects of their secondary curriculum was not the gifted programming, but rather from mentors during informal educational opportunities. However, in a follow up study done five years later on these same women, it was found that continued career guidance interventions would have helped the career decision making of these gifted females (Grant, Battle, & Heggoy, 2000).

Janice Bizzari (1998), in her intergenerational, narrative study that focused on the obstacles and challenges confronting gifted females, found that the lack of counseling played an important role in unplanned careers and decisions. Her findings indicated the importance of role models to influence gifted females' life and educational decision-making. In contrast, a program for high-achieving girls, which paired female scientists and female teachers with students to work on projects related to environmental science, showed positive effects on the

students and found that participation increased self-confidence about math and science (Rohrer & Welsch, 1998).

Additionally, Smith and Erb (1986) found that exposing middle school students to role models who were women in science-related careers had a positive effect on both females' and males' attitudes toward women in the science field. Gifted females would benefit from contact with women role models in science and engineering considering the numerous internal and external barriers they face in pursuing these fields.

Conclusions

In a qualitative study by Battle, Grant, and Heggoy (1995) of beginning college freshmen gifted female students, family support in the development of their daughters was a major factor in the females' success. In addition, support of their interests in non-traditional subjects and careers allowed them the knowledge to select a career appropriate for their abilities and interests. Also, exposure and acknowledgement of the strengths they possessed provided them with self-confidence in their abilities. They had high involvement in school and extracurricular activities. Each had significant female role models who influenced their decisions. These young women viewed themselves as intelligent, independent,

21
outspoken, and goal-directed. They perceived themselves to be gifted females bound for great achievements.

In a study Noldon and Sedlacek (1998) involving 172 male and 153 female academically talented college freshman students, significant differences were found between the males and females on a series of attitudinal, behavioral, and demographic survey items. These differences should be addressed when developing programs for the academically talented students. Gifted females need the help of parents, teachers, and counselors to work through the maze of adolescence to emerge as the confident risk-takers they were in elementary school.

CHAPTER III

METHODOLOGY AND PROCEDURES

The Sample

The purpose of this study was to examine the academic achievement of adolescent female gifted students as compared to adolescent male gifted students. The school system from which the sample was selected was located in a suburban school district with thirty schools. There were six high schools in the district. Permission to collect data for the study was obtained from the appropriate personnel in Clarksville-Montgomery County School System and from Austin Peay State University's Institutional Review Board. Parental permission or consent was not needed due to the nature of the study. The study only involved data analyzation, so no direct human involvement took place.

The sample that was used for the study originated from a list of 377 identified gifted students from the Clarksville-Montgomery County School System during the school year 1997-1998. From that list 118 were eliminated, because at the time they were not yet in high school. There were 259 remaining students from the list who were in high school. Those students' names were entered into a tracking

computer program called "Open District." This program located any student enrolled in the district and provided personal information, such as the high school of enrollment. Once a list was obtained of all students currently enrolled in Clarksville-Montgomery County and in high school, their individual high schools were contacted with a request for the students' records. The records that were requested were each student's cumulative card. This card contained testing scores and high school class schedules.

Data Collection

The data that was analyzed was each student's T.C.A.P. math and language total battery achievement scores. Additionally, any student who had taken the A.C.T. test had the total score of that test analyzed. Also, the enrollment in advance and Advanced Placement classes in high school was noted. Three lists of information were made containing the above data. The information was divided into male and female student scores.

Statistical Procedures

Mean scores were obtained from the scores of the female T.C.A.P. math and language total battery achievement scores and from the male T.C.A.P. math and language total

battery achievement scores. Mean scores were obtained from the scores of the female A.C.T. total scores and from the male A.C.T. total scores. From those means, a t test was used to test the null hypothesis regarding the observed difference between the two means. This was done for both the achievement test scores and the A.C.T. scores.

The enrollment in advanced and A.P. classes was analyzed to note the difference in male and female enrollment numbers.

These statistics provided information to determine if the null hypotheses in the study were correct.

CHAPTER IV

DATA AND RESULTS

Demographics

This study began with a sample of 377 identified gifted students from the 1997-1998 school year. From that sample, 118 students were eliminated, because they were no longer enrolled in the Clarksville-Montgomery County School System. Copies of the cumulative record cards of the remaining 259 students were obtained from the six different high schools in the district. Those records were analyzed. It was determined that records of the students currently enrolled in ninth grade did not provide enough data to warrant use in the study. Subsequently, those records were eliminated.

Of the final sample group of 153 students' records that were analyzed, fifty-eight were in tenth grade, forty-one were eleventh grade, and fifty-four were in twelfth grade. (Figure 4-1)

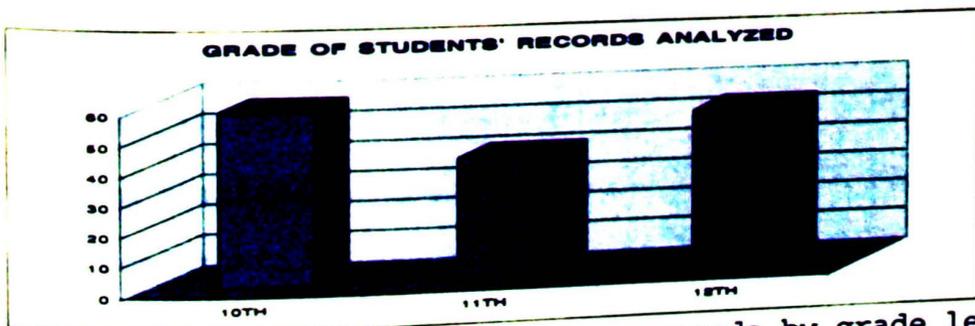


Figure 4-1 The number of students' records by grade level analyzed in the study.

Of the final sample group of 153 students' records that were analyzed, sixty-six were female and eighty-seven were male. (Figure 4-2)

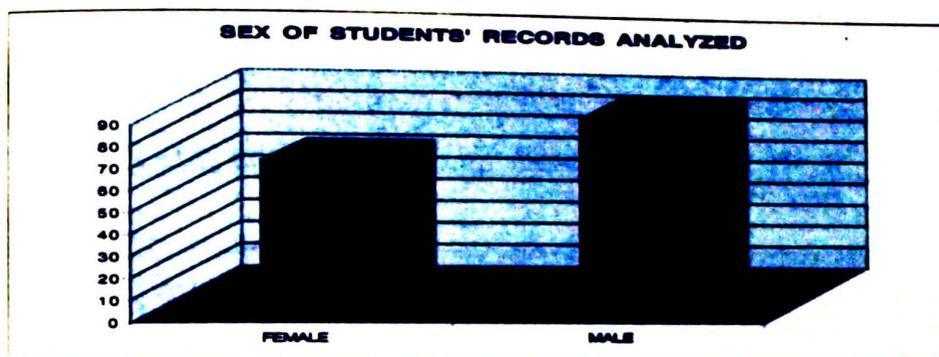


Figure 4-2 The number of students' records by sex analyzed in the study.

Statistical Analyzation and Results

The data from the students' records was analyzed using a statistical software program called SPSS 10.0. This program computed t-tests on the data given to determine if there were statistical differences between the male and female information.

When comparing the female students' T.C.A.P. Math scores with that of the male students' T.C.A.P. Math scores, it was determined that there was no significant difference in the two groups' scores. Table 2-1 summarizes the group statistics, and Table 2-2 summarizes the statistical tests performed, which indicated no statistical differences.

Table 2-1 Group Statistics T.C.A.P. MATH

SEX	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
TCAP MATH M	87	93.44	5.05	.54
F	66	92.70	4.57	.56

Table 2-2 Independent Samples Test T.C.A.P. MATH

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Diff. Low. Upper	
Equal Variances Assumed	.738	.392	.935	151	.351	.74	.79	-.82	2.30
Equal Variances Not Assumed			.948	146.257	.345	.74	.78	-.80	2.28

When comparing the female students' T.C.A.P. Language scores with that of the male students' T.C.A.P. Language scores, it was determined that there was a significant difference in the two groups' scores. The statistical analysis indicated that females were slightly outperforming male students on the T.C.A.P. Language. The mean difference was greater than the accepted range of (+1 < -1). Therefore, the discrepancy of .31 exists. Table 2-3 summarizes the group statistics, and Table 2-4 summarizes the statistical tests performed, which indicated statistical differences.

Table 2-3 Group Statistics T.C.A.P. LANGUAGE

SEX	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
TCAP LANG M	87	92.15	3.23	.35
F	66	93.45	3.92	.48

Table 2-4 Independent Samples Test T.C.A.P. LANGUAGE

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Diff. Low. Upper	
Equal Variances Assumed	.593	.442	-2.254	151	.026	-1.31	.58	-2.45	-.16
Equal Variances Not Assumed			-2.196	124.303	.030	-1.31	.59	-2.48	-.13

When comparing the female students' A.C.T. scores with that of the male students' A.C.T. scores, it was determined that there was no significant difference in the two groups' scores. Table 2-5 summarizes the group statistics, and Table 2-6 summarizes the statistical tests performed, which indicated no statistical differences.

Table 2-5 Group Statistics A.C.T.

SEX	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
TCAP ACT M	32	28.38	3.36	.59
F	26	28.85	3.67	.72

Table 2-6 Independent Samples Test A.C.T.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Diff.	
								Low.	Upper
Equal Variances Assumed	.276	.601	-.510	56	.612	-.47	.92	-2.32	1.38
Equal Variances Not Assumed			-.505	51.370	.616	-.47	.93	-2.34	1.40

When comparing the female students' enrollment in advanced or Advanced Placement classes with that of the male students' enrollment, it was determined that there was no significant difference in the two groups' enrollments. Table 2-7 summarizes the group statistics, which calculated the standard deviation to determine the amount of variability in the enrollment.

Table 2-7 Mean and Standard Deviation Scores for Enrollment in Advanced and Advanced Placement Classes

SEX	GRADE	Mean	N	Std. Deviation
M	10	2.94	34	1.50
	11	4.75	20	2.71
	12	6.12	33	2.63
	Total	4.56	87	2.65
F	10	2.83	24	1.49
	11	4.71	21	2.39
	12	6.33	21	1.80
	Total	4.55	66	2.38
Total	10	2.90	58	1.48
	11	4.73	41	2.52
	12	6.20	54	2.33
	Total	4.56	153	2.53

Further analyzation of the students' enrollment in advanced and Advanced Placement classes using a univariate analysis of variance (ANOVA) was done. It was determined that while grade level made a difference in the number of advanced and Advanced Placement classes taken, sex of the student did not.

and their counterparts.

Students were located and

and taken from their

grades, I.C.P. scores, and

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CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was conducted to determine if there were differences in the achievement of adolescent gifted female students, when compared with their male counterparts. Previously identified gifted students were located and information for comparison was obtained from their cumulative records. Achievement scores, A.C.T. scores, and enrollment in advanced and Advanced Placement classes were chosen as measures of achievement for this study. The scores for T.C.A.P. Math and Language tests were statistically compared for any significant differences between female and male students, as well as a comparison of A.C.T. scores. Gifted female students' enrollment in advanced and Advanced Placement classes was then contrasted with gifted male students' to note any statistical differences.

Conclusions

Research Question One

The first question called for the comparison of the achievement scores of previously identified female gifted students and previously identified male gifted students.

The T.C.A.P. Math scores of the female and male students were statistically compared using t-tests. It was found that there was not a significant difference between the female and male students' scores. When the T.C.A.P. Language scores of the female and male students were statistically compared, it was found that there was a significant difference in the scores with the female students scoring slightly higher. Therefore, it can be concluded that based on achievement scores adolescent gifted females do as well as adolescent gifted males in math and slightly better in language.

Research Question Two

Question two examined the difference in gifted adolescent female and male students' enrollment in advanced and Advanced Placement classes. The standard deviations were investigated, and it was found that there was not a significant difference in the number of female students enrolled, as compared to the male students. Based on these results, the sex of the student does not appear to have an effect on the difficulty of classes chosen in high school.

Research Question Three

The last question posed by this study investigated any significant differences between the A.C.T. scores of previously identified gifted female and male students.

Again, when statistically examined, no significant difference was noted between the two groups' scores. Thusly, it can be inferred that based on A.C.T. scores, there is no difference in the achievement of gifted female students and gifted male students.

Hypotheses

The hypotheses considered for this study stated:

1. There will be no significant difference between the achievement scores of previously identified female gifted students and previously identified male gifted students.
2. There will be no significant difference between the enrollment numbers in high school advanced and Advanced Placement classes of previously identified female gifted students and previously identified male gifted students.
3. There will be no significant difference in the A.C.T. scores of previously identified female gifted students and previously identified male gifted students.

Hypotheses two and three are accepted based on the analysis of the data collected in this study. However, hypothesis one is only partially correct. There is no significant

difference in math achievement scores, but there is a significant difference in the language achievement scores.

Discussion

The conclusions of this research indicated a difference in the findings of the data examined for this study, when compared with the literature reviewed. The review of current literature indicated significant differences in the academic achievement of adolescent gifted females, as compared to adolescent gifted males. The data analyzed for this study did not illustrate significant differences in the achievement of the two groups. Therefore, several interpretations of the results may be made.

Perhaps the school district in the study has overcome the internal and external barriers that face gifted female students, and they are maximizing adolescent females' gifted abilities. It could also be concluded that a larger sample of students is needed to gain a truer indication of any differences in achievement. In addition, gains in gifted female achievement may have risen in the past few years since some of the research was conducted.

However, many of the studies reviewed were qualitative studies instead of quantitative. Personal interviews and various surveys were used to indicate how the participants

perceived their achievement. Thus, the students' self-image was a determinative factor in how well they thought they did. Much of the research provided data in the females' own perceptions of their abilities rather than a quantitative number indicating achievement. The current study examined numerical data to indicate achievement. The discrepancies could indicate how well adolescent gifted female students think they perform and achieve versus how well they actually do, when quantitative data is analyzed. Thusly, the socio-emotional image of the adolescent female gifted student could have damaged the results of many of the studies reviewed.

Recommendations

The following recommendations are proposed as a result of the data collected from this study:

1. It is recommended that further data be compiled comparing achievement of non-gifted female versus non-gifted male students.
2. It is recommended that a self-concept survey be administered to high school students to note any differences between gifted and non-gifted female and male students.
3. It is recommended that this study be enlarged to collect data from a larger sample group.

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APPENDICES

APPENDIX A

C.M.C.S.S. Application and Approval for Research

**CLARKSVILLE-MONTGOMERY COUNTY SCHOOL SYSTEM
APPLICATION FOR RESEARCH PROJECT APPROVAL**

1. TITLE OF PROJECT:

The Academic Achievement of Adolescent Female Gifted Students

2. PRINCIPAL INVESTIGATOR INFORMATION:

Name: Theresa Ophelia Muckleroy

Faculty ___ Staff ___ Graduate Student X Undergraduate Student ___

Department: Education

Mailing Address: 1717 Riverhaven Drive, Adams, Tennessee 37010

Phone#: (931) 358-2089

Email Address: theresa.muckleroy@cmcss.net

3. FACULTY SUPERVISOR:

Name: Dr. Carlette Hardin

Department: Education

Campus Mailing Address: Austin Peay State University, College of Education,
Box 4545, Clarksville, Tennessee 37044

Office Phone #: (931) 221-7593

Email Address: HARDINC@apsu.edu

4. SOURCE OF FUNDING FOR THE PROJECT:

Financed by the principal investigator

5. PURPOSE OF THE INVESTIGATION:

To determine the differences in academic achievement based on achievement scores between adolescent female gifted students and male gifted students.

To determine the differences in academic achievement based on ACT scores between adolescent female gifted students and male gifted students.

To determine the differences in academic achievement based on enrollment in advanced placement classes between adolescent female gifted students and male gifted students.

To implement programs into school and guidance curriculum to help improve adolescent female gifted students' self-concepts and educational decisions.

6. A. THIS RESEARCH IS BEING CONDUCTED TO FULFILL REQUIREMENTS FOR A GRADUATE DEGREE. YES X NO

B. THIS RESEARCH IS BEING CONDUCTED TO FULFILL REQUIREMENTS FOR A COURSE. YES X NO ___;

IF YES: DEPT Education COURSE# 6050 INSTRUCTOR Dr. Delores Gore

7. DESCRIBE WHO PARTICIPANTS WILL BE, HOW PARTICIPANTS WILL BE RECRUITED, THE NUMBER AND AGE OF THE PARTICIPANTS AND ANY PROPOSED COMPENSATION.

There were 377 identified gifted students in Clarksville-Montgomery County during the 1997-1998 school year. The participants will be selected from that list of original students and will consist of the students who are remaining in Clarksville-Montgomery County School System in high school aged 14 to 18. A parental consent letter will not be necessary since the research project involves only data analyzation and no direct student contact. The results will be utilized to incorporate programs into school and guidance curriculum to help improve female gifted students' self-concepts and educational decisions.

8. DESCRIBE THE RESEARCH PROCEDURES IN NON-TECHNICAL LANGUAGE:

Personnel at the Clarksville-Montgomery County School System Central Office will provide the investigator with a list of 377 student names who were identified as gifted in the 1997-1998 school year. From that list, the investigator will use an open district tracking program to identify the students who are still students in the CMCSS and in high school. During this process, the investigator will determine the high school of attendance. The investigator will contact the appropriate high schools and request the students' records with the names blackened out. The achievement scores of these students will be analyzed. Male and female results will be correlationally compared to determine if there is a significant difference in their progressive scores. The eleventh and twelfth graders who have taken the ACT will have their results correlationally compared to determine if there is a significant difference in the scores of males and females. The students' schedules will be examined to compare the enrollment of males and females in high school advanced placement classes.

9. POTENTIAL BENEFITS AND ANTICIPATED RISKS:

Potential benefits will include a better understanding of the education decisions and self-concept of adolescent female gifted students, as well as implementation of programs and curriculum to help improve female gifted students' educational decisions and self-concepts. Since the study only involves the analyzation of existing data and the students will not be directly involved in the research, there will be no risks to the students.

10. DESCRIBE THE INFORMED CONSENT PROCESS. INCLUDE A COPY OF THE INFORMED CONSENT DOCUMENT.

A parental consent letter will not be necessary due to the students' retention of anonymity. The research will only involve data analyzation and not student

involvement. In addition, scores and not student names will be reported. Data collected will be used to incorporate programs into school and guidance curriculum to help improve female gifted students' educational decisions and self-concepts. This data will be secured in a locked file cabinet at the principal investigator's school. Appropriate approval from the Clarksville-Montgomery County School System will be obtained after approval is granted from the APSU Institutional Review Board.

This is to certify that the only involvement of human participants in this research study will be as described above.

Principal Investigator's Signature (Theresa Ophelia Muckleroy)

Principal Investigator's Name: Theresa Ophelia Muckleroy
The date of

Principal Investigator's Contact Information: Theresa Ophelia Muckleroy
The principal has the

Principal Investigator's Information: Theresa Ophelia Muckleroy

November 8, 2001

Theresa Muckleroy
Assistant Principal
Rossvie High School
1237 Rossvie Road
Clarksville, TN 37043

Dear Mrs. Muckleroy:

Your research project titled "The Academic Achievement of Adolescent Female Gifted Students" has been approved by the research committee. The date of approval was November 8, 2001.

Now that you have approval from the research committee, you may contact the principal for approval. According to Board Policy File IFA, the principal has the final authority and responsibility for approving or disapproving research conducted in his/her building.

Please read the Research Policy and Procedures Handbook for all information concerning research in the Clarksville-Montgomery County Schools.

If you have questions, please call my office at (931) 920-7824.

Sincerely,



B. J. Worthington, Ed.D.
Chief Academic Officer

tr
cc: Research Committee

APPENDIX B

A.P.I.R.B. Research Involving Human Subjects

AUSTIN PEAY STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD (APIRB) APPLICATION FOR PROJECT APPROVAL

1. TITLE OF PROJECT:

The Academic Achievement of Adolescent Female Gifted Students

2. PRINCIPAL INVESTIGATOR INFORMATION:

Name: Theresa Ophelia Muckleroy

Faculty ___ Staff ___ Graduate Student X Undergraduate Student ___

Department: Education

Mailing Address: 1717 Riverhaven Drive, Adams, Tennessee 37010

Phone#: (931) 358-2089

Email Address: theresa.muckleroy@cmcss.net

3. FACULTY SUPERVISOR:

Name: Dr. Carlette Hardin

Department: Education

Campus Mailing Address: Austin Peay State University, College of Education, Box 4545, Clarksville, Tennessee 37044

Office Phone #: (931) 221-7593

Email Address: HARDINC@apsu.edu

4. SOURCE OF FUNDING FOR THE PROJECT:

Financed by the principal investigator

5. PURPOSE OF THE INVESTIGATION:

To determine the differences in academic achievement based on achievement scores between adolescent female gifted students and male gifted students.

To determine the differences in academic achievement based on ACT scores between adolescent female gifted students and male gifted students.

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6. A. THIS RESEARCH IS BEING CONDUCTED TO FULFILL REQUIREMENTS FOR A GRADUATE DEGREE. YES X NO ___

B. THIS RESEARCH IS BEING CONDUCTED TO FULFILL REQUIREMENTS FOR A COURSE. YES X NO ___;

IF YES: DEPT Education COURSE# 6050 INSTRUCTOR Dr. Delores Gore

7. DESCRIBE WHO PARTICIPANTS WILL BE, HOW PARTICIPANTS WILL BE RECRUITED, THE NUMBER AND AGE OF THE PARTICIPANTS AND ANY PROPOSED COMPENSATION.

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8. DESCRIBE THE RESEARCH PROCEDURES IN NON-TECHNICAL LANGUAGE:

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9. POTENTIAL BENEFITS AND ANTICIPATED RISKS:

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This is to certify that the only involvement of human participants in this research study will be as described above.

Principal Investigator's Signature (Theresa Ophelia Muckleroy)

Faculty Supervisor's Signature (Dr. Carlette Hardin)

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Austin Peay State University
Institutional Review Board

November 12, 2001

Theresa Ophelia Muckleroy
c/o Carlette Hardin
Education Dept.
APSU Box 4545

RE: Your application dated November 8, 2001 regarding study number 02-019: The Academic Achievement of Adolescent Female Gifted Students (Austin Peay State University)

Dear Ms. Muckleroy:

Thank you for your recent submission. We appreciate your cooperation with the human research review process. I have reviewed your request for expedited approval of the new study listed above. This type of study qualifies for expedited review under FDA and NIH (Office for Protection from Research Risks) regulations.

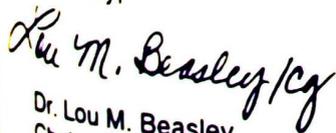
Congratulations! This is to confirm that I have approved your application through one calendar year. The requirement for obtaining informed consent is waived. This approval is subject to APSU Policies and Procedures governing human subjects research. These policies can be viewed at:
www2.apsu.edu/www/computer/policy/2002.htm. The full IRB will still review this protocol and reserves the right to withdraw expedited approval if unresolved issues are raised during their review.

You are granted permission to conduct your study as described in your application effective immediately. The study is subject to continuing review on or before November 12, 2002, unless closed before that date. Enclosed please find the forms to report when your study has been completed and to request an annual review of a continuing study. Please submit the appropriate form prior to November 12, 2002.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Lou Beasley (221-6380; fax 221-7595; email: beasleyl@apsu.edu) if you have any questions or require further information.

Again, thank you for your cooperation with the APIRB and the human research review process. Best wishes for a successful study!

Sincerely,



Dr. Lou M. Beasley
Chair, Austin Peay Institutional Review Board

VITA

VITA

Theresa was born in Zachary, Louisiana and moved to Clarksville, Tennessee, when she was ten years old. She graduated from Northwest High School in 1979 and Austin Peay State University in 1985 and 1989 earning a Bachelor's and Master's degree, respectively. In 1993, she obtained a Doctor of Jurisprudence from Nashville School of Law. She received her Educational Specialist degree in Administration and Supervision from Austin Peay State University in 2002. She has been in the educational field as a teacher and administrator for seventeen years in Kentucky, Texas, Georgia, and Tennessee.