

**A STUDY OF GENDER AND READING AS MEASURED BY THE  
COMPREHENSIVE TEST OF BASIC SKILLS**

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To the Graduate and Research Council:

I am submitting herewith a field study written by Tracey Brame Leath entitled, "A Study of Gender and Reading as Measured by the Comprehensive Test of Basic Skills". I have examined the final copy of this paper for form and content, and I recommend that it be accepted in partial fulfillment of the requirements for the degree of Education Specialist.

  
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Date June 27, 2002

A Study of Gender and Reading as Measured by the Comprehensive Test of Basic Skills

A Field Study

Presented for the

Education Specialist Degree

Austin Peay State University

Tracey Brame Leath

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## ABSTRACT

The focus of this study was to determine to what extent (if any) the difference is between boys' and girls' reading scores on the Comprehensive Test of Basic Skills. These students represent the third grade population from the 2000-2001 school year. A study of the research involving this topic was conducted, along with a review of the data from the 2001 Comprehensive Test of Basic Skills.

The results of this study indicated that girls, on the whole, possess stronger reading skills than do boys. The female population scored consistently higher than the male population in reading in each of the four randomly selected schools involved in this study.

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# CHAPTER I

## INTRODUCTION

Parents play a vital role in the development of a child's literacy. As a child's first teacher, a parent is usually the one who first introduces the child to spoken and written language. A child will then take that knowledge into the academic arena, and will then either flourish or fail. Often times, it is male students who are not advancing their literacy skills, and who are not moving forward at the same pace as female students.

Traditionally, male students have shown more of an interest in the areas of math and science, while female students have shown more of an aptitude in literature-related subjects. As a result, male students have not performed as well as their female counterparts on standardized tests. The reasons for this phenomenon vary from children's natural aptitudes, background, ingrained gender roles, and educational experiences.

### Statement of the Problem

In their 1990 study, Hannon and James quote a pre-school teacher as saying that many times, parents are afraid they will incorrectly teach their children, so they simply do not try. As a result, parents may not properly expose their children to the literacy skills which are so crucial to their development. They then begin school, with some children rapidly catching up and making progress, while others lag behind in the area of literacy.

Another issue in the home is related to gender and the roles taught to boys and girls by their family members. Traditionally, boys play sports with their fathers, while girls read or play with dolls with their mothers. Boys may not have spent much time with

books before they begin school, while in contrast, girls usually have spent time being read to or looking at books. By the time these children have reached the third grade, there is a marked difference in their literacy skills achievement.

### Importance of the Problem

As children go through school, some fall further and further behind in their reading skills. Boys may not be encouraged to develop their literacy skills, and may be at risk of falling behind in the area of reading. Girls may be more encouraged to read and may develop better reading skills as they progress through school. If this cycle does not stop, schools will continue to produce male students who cannot read on the same level as females. This cycle will then continue through to the next generation where again, girls will be encouraged to read, whereas boys will not. This could negatively impact our nation, as boys grow into men who are becoming productive members of society, but who do not possess the same literacy skills as their female counterparts. In schools, standardized test scores will decline, which could result in possible sanctions for schools and teachers. If this cycle of girls becoming “readers”, while boys are encouraged to pursue other activities is not altered, it could have a negative impact on education and life experiences.

### Relationship of This Study to the Problem

A better understanding of the differences between boys’ and girls’ early literacy skills can be accomplished through a study of the findings of research on this topic. While each community is unique, findings from this study could possibly be helpful in

other areas with a similar population. Not only has the research of this topic been studied and reported, but a literature review of related studies has also been conducted.

### Research Question

What is the difference in the degree of impact of girls' reading scores, as compared to boys' reading scores in the third grade as measured by the 2001 Comprehensive Test of Basic Skills (CTBS)?

### Hypothesis

There will be no correlation between childrens' reading scores on the CTBS as defined by gender.

### Definition of Terms

#### Comprehensive Test of Basic Skills

A standardized achievement test required of all Kentucky third graders. The CTBS tests children in three areas: Mathematics, Reading, and Language Arts. Each section of the test is then divided into sub-sections. The test is taken in April and the results are returned to the district by September.

#### Gender Identification

A set of ideals and an understood way of behaving according to what is acceptable for one's gender which is instilled into a child from birth by parents and society.

### One Ball Theory

The theory that boys are raised to play sports, rather than read.

### Assumptions

1. The CTBS is valid and reliable
2. Test scores are reported accurately

### Limitations

1. Intelligence Quotient of each individual is unknown
2. Socio-economic level of each individual is unknown
3. Race for each individual is unknown
4. Four of the eleven elementary schools (36%) in the district were used for this study

## CHAPTER II

### REVIEW OF LITERATURE

“It has been known for some time that, in general terms, boys do less well than girls at reading, almost regardless of the criteria used to assess competence” (Moss, 2000, p. 101). Not only are boys not performing as well as girls in reading, but boys are reading less than girls (Barrs, 1993, and Millard, 1997, as cited in Moss, 2000). In particular, boys are reading less fiction stories than are girls (Lloyd, 1998; Moss, 2000). How has this problem developed?

#### The Home-School Connection

Educators agree that there is a strong connection between what is learned at home and how that learning is translated to the school setting. According to Mikulecky's 1996 study, it was found that how a parent communicates with a child may have a greater impact on reading achievement than reading aloud (as cited in Amstutz, 2000). What does this mean for teachers? This statement means that, by the time a child arrives at school, he has already acquired a set of values and beliefs from his home environment that goes beyond what is read to him. A child has already learned from his parents social norms and rules that have been ingrained in a manner of which parents may not be cognizant. He has already formed his gender identity and his value system based on what he has learned at home, and that gender identity is then reinforced at school (Dutro, 2002; Rubin, 2002). For example, if parents do not communicate using reading and writing, but rely more heavily on oral forms of communication, their child will be less likely to read and write as a result of following the example of his parents (Puckett, 1992). This especially has an impact on very young children: reading aloud to children of pre-school



age can make a greater impact than reading aloud to children as they age (DeBaryshe, as cited in Hardman & Jones, 1999). These characteristics can change over time, but a very young child will arrive at school with what values and beliefs have been ingrained by his parents.

This parental influence lasts longer than just the early grades. If reading is valued at home for all children, the effects will last beyond his or her entrance into school. Children who were taught the value of literacy at a young age were better readers at age seven, and their reading skills continued to improve through age eleven and beyond. (Blatchford, et al, 1987, as cited in Blatchford and Plewis, 1990). Parental influence on their child and the gender roles they have established before the child starts school, along with the parent's value of education, will impact a child through at least the fourth grade. Parents are their child's first teacher, and they are who first introduces their child to various forms of literature (Millard, 1997; Rubin, 2002).

#### Gender and Expectations: A View from the Home

Most educators and researchers agree that gender is ingrained at home, beginning with the birth of the child. Female babies are traditionally clothed in pink and are raised with dolls and books, while male babies are traditionally clothed in blue and are raised with toys which make noise, or relate to sports. Mothers spend time reading to their girls, while fathers take their boys outside to play sports. This is the "one ball theory", in which baseball, soccer, basketball, and football take precedence over books in a young boy's life. Bonding time with dad is spent with a ball, while daughters spend time with mom reading a book, which is usually fiction. If dad does read to his son, those books are generally of the non-fiction genre. These gender manifestations begin at birth, and in

the early years, are exhibited by the child (Rubin, 2002). According to a study conducted by Lloyd (1998), it was found that gender is as much a product of nurture as nature, and that the development of literacy is similar. Further, this nurturing of gender teaches boys to take charge aggressively, while girls are taught to be more retiring (Gradin, 1994). Therefore, by the time a child reaches school, he or she has a deeply ingrained sense of gender associations.

### Gender and Expectations: A View from the School

Once a child is enrolled in school, much is done, whether overtly or covertly, to further perpetuate gender identification. Even though boys and girls are educated together, they may have different experiences (Abilock, 1997; Dutro, 2002). Moreover, a 1999 study found that "girls were more verbally fluent than boys with the advantage increasing with age" (Sincoff & Sternberg, 1987, as quoted in Pomplin & Sundbye, 1999, p. 107). Teachers may, without being conscious of their methods, focus more on their female population during literature-based lessons, while maintaining focus on their male students during scientific or mathematical lessons. Boys may naturally gravitate toward the sciences, while girls may have a natural penchant for reading and literature. Teachers may even *expect* girls to possess stronger literacy skills than boys, and may teach accordingly (Nielsen, 2001; Rubin, 2002). This difference in how boys and girls are treated by their teachers, and the difference in boys' and girls' natural tendencies often results in differences in achievement in subjects such as reading (Daly, 1999; Dutro, 2002).

In the 1970's, authors and schools began pushing for books portraying males as the protagonist who save the helpless female in an effort to attract male readers.

Typically, girls have been portrayed as quiet and needy, and boys have been portrayed as smart and independent – the hero (Ernst, 1995, as discussed in Abilock, 1997).

Furthermore, many K-12 textbooks usually portray men as being more significant than women, and children's books generally contain more male heroes (Lloyd, 1998).

Accordingly, many basal readers used in elementary schools rely more heavily on male characters and situations and less on female characters and situations (Witt, 1996). Such authors as Dr. Seuss, Richard Scarry, Maurice Sendack, and Arnold Lobel focused their literature mostly on male characters, and “teachers and librarians were told these were perfect for group reading because the gender of the character was immaterial to girls, while boys would read only about boys” (Nielsen, 2001, p. 49). This image began to appear in books for children in the 1970's, and the reason for it was to encourage boys to read more books, and more fiction books in particular. The result? Girls, who generally prefer fiction books, will usually read a book with boys or girls as the protagonist, but boys, who generally prefer non-fiction, will usually read only fiction books with a male character as the hero (Abilock, 1997; Dutro, 2002). However, girls still need positive female characters in books.

According to a 1996 study by Collins-Standley & Gan, it was found that 81% of boys chose books containing either violence or horror, as compared to only 42% of girls. Although the girls in this study generally chose books with more nurturing themes, they were also quick to break the gender boundary in their book choices. Usually, the boys were not as willing to explore different book options. This finding has further proven that girls generally do not care about gender in literature, but boys will only read books with a male protagonist. While there may be some truth to this argument, authors now



are trying to move away from the portrayal of a strictly male hero. However, boys are still reading mostly non-fiction (Maclean's, 1998), and fiction involving male characters. Girls are, in general, reading more of each genre. Why is this occurring? The answer again lies in the home. Fathers, in general, read non-fiction with their sons, while mothers, in general, read more fiction with their daughters, and this continues to the school setting where it is reinforced by their peers (Lloyd, 1998). However, while boys' reading choices are more limited, girls' choices are seemingly broader. The result is that girls are, on the whole, stronger readers than boys, and often, this trend continues as students move through school (Reading Today, 1999; Rubin, 2002).

#### National Assessment of Educational Progress Results

What does the National Assessment of Educational Progress (NAEP) have to report concerning literacy and gender? The latest results are from a 1998 study, in which it was found that reading scores had increased as a whole, from an average score of 214 for fourth graders in 1994 to 217 in 1998 among the 31,000 students completing the reading portion of the NAEP assessment tool. This trend was also noted from the eighth and twelfth grade students. However, even though there was an overall increase in reading scores, male students still did not perform as well as female students. Female students in grades four, eight, and twelve outscored their male counterparts on the reading portion of the assessment (Reading Today, 1999; Rubin, 2002). According to NAEP results, parents and educators should be concerned with the discrepancy between the reading skills of males and females, as opposed to overall reading scores. One result of this discrepancy is that more males than females are in remedial reading classes, and various other programs designed to help struggling readers (Brozo & Schmelzer, 1997;

Rubin, 2002). Added to this, boys compose the majority of students who find reading and writing to be difficult tasks (Daly, 1999).

### Effect of the Problem on Society

As gender identification deepens with age, boys fall further into “one ball” sports, while girls spend more time with quieter activities, such as reading. According to Collins-Standley and Gan (1996), it was found that boys often are more active and aggressive than girls, and therefore, do not spend as much time as girls in the quiet pursuit of a good book. As a result, girls are reading more books in their entirety, while many boys have never completed a book. Society tells boys they can read newspapers or sports magazines, but not books. Boys are encouraged to play with tanks, cars, and other noisy toys, while girls are encouraged to color, play with dolls, and read (Collins-Standley & Gan, 1996). This begins in the home, is reinforced by the schools and authors of books, and then is deepened by society as children grow.

Dutro, (2002) describes a scenario in which a kindergarten child, at the end of his library period, checked out Beauty and the Beast. The female children in the class ridiculed him until he replaced Beauty and the Beast with a more “suitable” choice. This practice of some books being “okay” for boys, while all books are acceptable for girls results in boys limiting their reading choices. Eventually, boys’ overall literacy skills will begin to suffer. What is the end result? As boys grow into men, their literacy endeavors may further decline. Nielson, (2001) found that, in a 1967 Newsweek article, one-third of the 1.5 million men turning 21 did not pass what was set forth in the draft as basic requirements for literacy. As a result, two years later, the Secretary of Defense (McNamara) lowered the reading level from seventh grade to sixth grade, because 68.2%



of those tested could not pass. Even though this study took place in 1967, it could likely be argued that the same statistics exist today.

There are certainly more factors which play a role in the attainment of literacy than gender, such as social class, and homes in which English is not the primary language (Riley, 2000; Daly, 1999). However, gender is certainly one of the most dominate factors in how and when children develop as literate readers.

### Solutions

What are some possible solutions to this problem? One is for parents to stop placing their young children in one category – girls with dolls or other passive activities, and boys with sports. Parents can begin to play more games and sports with their daughters, and can read stories to their boys that include different genres. Girls can begin to find satisfaction in participating in team sports, and their growing participation in such sports as soccer and softball can also have a positive impact. Also, boys and girls alike need exposure to books with both genders as the protagonist (Nielson, 2001).

Another possible solution to the problem is for school libraries to provide a wide range of literature, from fiction to biographies; from newspapers to the Internet for students to peruse (Abilock, 1997; Nielsen, 2001). The creation of literature groups in the classroom or the library can also positively affect the interest level of boys and girls alike.

Finally, children should be allowed to self-select books containing authentic text. However, it is important to note that children should be guided to books that they are able to successfully read alone. This practice will prevent children from becoming frustrated and losing interest in their book (Donovan, Smolkin, & Lomax, 2000; Brozo &

Schmelzer, 1997). This will increase the confidence level of the student, which will, in turn, encourage further reading.

These practices will encourage a positive response from both boys and girls. It will do more to promote literacy skills across gender lines, particularly if teachers will continue this trend in their classrooms. This practice will result in increased reading by boys, which will, in turn, likely result in higher reading scores on standardized tests. Boys who are literate will later have the potential to positively contribute to society.

### Conclusion

Gender identification most likely plays a strong role in developing literacy skills. Most of a child's gender identification is defined by the time he/she starts school. Many times, boys are exposed to sports, while girls are exposed to literature. We, as educators, usually assign literary activities which include girls' thoughts, attitudes, and backgrounds, but not boys' (Daly, 1999). Boys are often encouraged to read non-fiction, whereas girls generally prefer fiction. The result is that, by the time children reach the third grade, girls are reading more and at a higher grade level than are boys. This results in higher reading test scores by girls on standardized tests (Reading Today, 1999; Riley, 2000; Rubin, 2002).

Eventually, as boys move through life, their literacy skills fall further and further behind, which will eventually have a negative impact on society as they move into the work world. How can we change this trend?

The answer does not lie in more assignments. According to a 1997 study of NAEP results by Linda Jacobson, it was found that children are completing more assignments today than were children in 1984. However, simply completing more

assignments does not ensure that students are becoming better readers. We, as educators and parents, must do all we can not to perpetuate these trends.

Educators must be aware of how gender and background affects how boys and girls function in the classroom (Lloyd, 1998). We must encourage our boys and girls to read from a variety of genres and types of literature. We must also choose books in which boys and girls are the protagonist. Finally, we must come to terms with the fact that there is, indeed, a gap between boys and girls and their literacy skills. Further, educators must work to bridge the gap between "school reading" and "real-life reading" (Millard, 1997).

According to an article published in *Macleans*, the editor quoted Froese, a professor at the University of British Columbia as saying that "the relatively poor academic performance of young males is 'a problem we just aren't paying enough attention to'" (1998, p. 58). We must, as a society, first realize that there is a problem, and then do whatever is necessary to overcome the problems between gender and reading skills. The final answer will lie not in the completion of expensive and trendy programs designed to be a "fix-all", but in the hands of caring teachers and parents who will work to make changes at a grassroots level (Reading Today, 1999).

## CHAPTER III

### METHODOLOGY

#### Procedure

As part of the state's curriculum, children are required by law to take a test made up of three components: Reading, Language Arts, and Mathematics. This test is called the Comprehensive Test of Basic Skills, or the CTBS. Tests are scored by the company which produces this instrument, with the results being reported back to teachers and the students' families. The scores are analyzed by teachers to help them realize areas in which their students are weak or strong, and each sub-test is analyzed for specific strengths and weaknesses. Children take the complete battery of the CTBS at the end of the second grade, and then take the survey edition at the end of the third grade. For purposes of this study, only the third grade reading scores have been analyzed. The reading portion of the CTBS consists of four sub-tests, which are: Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Reading Strategies.

For this study, permission has been obtained from the Superintendent of this school system. Also, permission has been sought and obtained from the University Independent Review Board in order to compare the children's CTBS scores. Research information was provided by the Supervisor of Instruction and the District Assessment Coordinator, and confidentiality has been maintained by coding the data.

#### Subjects

The subjects studied are students who attend public schools in what is identified as a lower socio-economic region. This county is located in the south-western section of a southern state with a population of approximately 30,000 people. The children in this



study were all third grade students during the 2000-2001 school year, and all students in this study qualify for Title I funding.

For purposes of this study, of the 11 elementary schools in the district, four have been randomly chosen. From this population, every other male student and every other female student have been selected, which yielded a population of 128 students, whose whole battery reading scores were examined. Also, total group scores on each sub-test from the third grade population were analyzed. Randomly selected students from School A consists of 12 females and 21 males; School B, 12 females and 13 males; School C, 21 males and 21 females; and School D, 9 females and 19 males.

#### Analysis of Data

The CTBS results have been examined for a correlational relationship: the gender of the child to his/her reading scores. The independent variable is the gender of the child, and the dependent variable is the child's score on the reading section of the CTBS. The research focus is to what extent a child's gender and those expectations impacts reading levels, and, consequently, reading scores on the CTBS. The childrens' scores on the CTBS have been stratified according to gender, and the results presented in tabular form. A mean score was calculated for each group of students, and the correlation between the child's gender and his/her reading scores on the CTBS has been calculated using a t-Test for Independent Samples. The probability level provided by this test informed whether to reject or fail to reject the null hypothesis. Further, an Analysis of Data (ANOVA) was conducted, with the results informing whether to reject or fail to reject the null hypothesis.



## CHAPTER IV

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

Research has sought to define and clarify the connection between parents and children in the area of literacy. It is thought that gender plays a vital role in a child's literacy development; however, the extent of this connection is unknown. Many of the effects of gender roles are abstract and difficult to measure. However, there is a connection at some level between a child's gender identification and his/her literacy skills.

The purpose of this study was to explore if or to what extent gender affects reading scores. The instrument chosen for this study was the Comprehensive Test of Basic Skills, which is taken each year by third grade students. A review of related literature was also conducted.

Four schools were randomly selected for this study, and students were stratified according to gender. t-Tests for Independent Samples and Analyses of Variance (ANOVA) were performed on each of the four sets of students' total battery scores. In conducting an Analysis of Variance (ANOVA) on the female students' scores, it was found that  $F = 0.844$ ,  $df = 3, 50$ ,  $p < .05$ . For the male students, it was calculated that  $F = 0.950$ ,  $df = 3, 70$ ,  $p < .05$ . Neither is statistically significant. In addition, a t-test was performed on each group's sub-test scores. The findings resulted in the failure to reject the null hypothesis which states that there will be no correlation between childrens' reading scores on the CTBS as defined by gender. Following are tables containing the results of the research, with children's scores by percent based on a scale of 0 to 100.

School A is considered to be an urban school. School A had the third-highest reading scores among the four schools selected for this study, following Schools D and C (see Table 2). In the area of Basic Understanding, the female mean is 50, while the male mean is 43. Analyzing Text yielded a mean score of 46 for the females, and a mean score of 38 for the males. The female mean for Evaluating Meaning is 58, while the male mean is 60. Identifying Reading Strategies is the final category, and the female mean is 42, and the male mean is 38 (see Table 1).

Overall scores for School A once again show the female students' mean score to be ten points higher than the male students' mean score. This difference exists even with there being nine more male students evaluated on their total reading battery (see Table 2).

Even though the male students scored higher than the female students in the area of Evaluating Meaning, it was only by a total of two points. Evaluating Meaning yielded the highest female score on all four sections, with a score of 58, as compared to the male total of 60. Extending and applying meaning carry the most weight in this section, with predicting and hypothesizing, and generalizing each carrying equal weight in the scoring process. It is interesting to note that the males scored higher than the females in the females' highest scoring section (see Table 1).

With a margin of eight points, the largest gap exists in the area of Analyzing Text. In this section, students are asked to compare and contrast, determine cause and effect, and identify story elements and characters. Identifying story elements and characters carries the most weight, with cause and effect and then comparing and contrasting carrying less weight, respectively (see Table 1).

In the area of Basic Understanding, the females again have the edge over the male students by seven points. In this section, students are asked to determine information from graphics, discern stated information, and identify appropriate vocabulary. The vocabulary section is weighted the most, followed by discerning stated information, and then determining information from graphics (see Table 1).

Finally, in the area of Identifying Reading Strategies, the female students again have scored higher than the male students by a difference of four points. This section requires students to self-monitor their reading, and identify vocabulary strategies. The vocabulary section is weighted heavier than the self-monitoring section. Even though the female students scored higher than the male students on this section, they still had a mean score of only 42, as compared to the male mean of 38. This was the lowest scoring section for the females, and this section was tied with Analyzing Text for the lowest male score (see Table 1).

Table 1

**Percentages of School A's sub-test scores on the 2001 CTBS**

| <b>Sub-Test</b>                | <b>Female Percentages</b> | <b>Male Percentages</b> |
|--------------------------------|---------------------------|-------------------------|
| BASIC UNDERSTANDING            | <b>50%</b>                | <b>43%</b>              |
| ANALYZING TEXT                 | <b>46</b>                 | <b>38</b>               |
| EVALUATING MEANING             | <b>58</b>                 | <b>60</b>               |
| IDENTIFYING READING STRATEGIES | <b>42</b>                 | <b>38</b>               |

$$t(6) = 0.682, p < .05$$

Table 2

Percentages of School A's total reading scores on the 2001 CTBS

| Female Percentages | Male Percentages |
|--------------------|------------------|
| 74%                | 37%              |
| 91                 | 33               |
| 11                 | 17               |
| 51                 | 44               |
| 81                 | 46               |
| 62                 | 50               |
| 29                 | 47               |
| 27                 | 41               |
| 35                 | 59               |
| 66                 | 67               |
| 83                 | 59               |
| 39                 | 40               |
|                    | 58               |
|                    | 34               |
|                    | 36               |
|                    | 24               |
|                    | 21               |
|                    | 36               |
|                    | 39               |
|                    | 75               |
|                    | 57               |
| SUM: 649           | SUM: 920         |
| MEAN: 54           | MEAN: 44         |

$$t(31) = 1.455, p < .05$$



School B is considered to be a rural school. School B had the fourth-highest reading scores among the four schools selected for this study for the female students, with the male students being tied for fourth with School A (see Tables 2 and 4). In the area of Basic Understanding, the female mean is 63, while the male mean is 46. Analyzing Text yielded a mean score of 50 for the females, and a mean score of 38 for the males. The female mean for Evaluating Meaning is 67, while the male mean is 46. Identifying Reading Strategies is the final category, and the female mean is 33, and the male mean is 46 (see Table 3).

Overall scores for School B show the female students' mean score to be just two points higher than the male students' mean score. School B is a small school, and there was only one more male student's score than female scores in this section (see Table 4).

The male students scored higher than the female students in the area of Identifying Reading Strategies by 13 points. Again, in this section, students are asked to self-monitor their reading, and identify vocabulary strategies. Even though the male students scored higher than the female students on this section, they still had a mean score of only 46, as compared to the female mean of 33. This was the lowest scoring section for the females, with 17 points being the difference between this section and the female's next highest score of 50 on the Analyzing Text section (see Table 3).

Evaluating Meaning once again yielded the highest female score on all four sections, with a score of 67, as compared to the male total of 46. School B's students were asked to predict and hypothesize, extend and apply meaning, and generalize (see Table 3).

In the area of Basic Understanding, the females again have the edge over the male students by 17 points. In this section, students are asked to determine information from graphics, discern stated information, and identify appropriate vocabulary (see Table 3).

With a margin of 12 points, the smallest gap exists in the area of Analyzing Text. In this section, students are asked to compare and contrast, determine cause and effect, and identify story elements and characters. It is interesting to note that, while Analyzing Text is the largest gap in scores for School A, it is the smallest for School B. It is also noteworthy to mention that the differences in scores between School A's males and females in each category are in the single digits, while the differences in scores in each category between School B's males and females are in the double digits (see Tables 1 and 3).

**Table 3**

**Percentages of School B's sub-test scores on the 2001 CTBS**

| <b>Sub-Test</b>                | <b>Female Percentages</b> | <b>Male Percentages</b> |
|--------------------------------|---------------------------|-------------------------|
| BASIC UNDERSTANDING            | <b>63%</b>                | <b>46%</b>              |
| ANALYZING TEXT                 | <b>50</b>                 | <b>38</b>               |
| EVALUATING MEANING             | <b>67</b>                 | <b>46</b>               |
| IDENTIFYING READING STRATEGIES | <b>33</b>                 | <b>46</b>               |

$$t(6) = 1.17, p < .05$$



Table 4

Percentages of School B's total reading scores on the 2001 CTBS

| Female Percentages | Male Percentages |
|--------------------|------------------|
| 55%                | 20%              |
| 10                 | 13               |
| 51                 | 42               |
| 52                 | 41               |
| 45                 | 63               |
| 50                 | 39               |
| 68                 | 32               |
| 40                 | 58               |
| 50                 | 26               |
| 31                 | 32               |
| 51                 | 41               |
| 50                 | 76               |
|                    | 86               |
| SUM: 553           | SUM: 569         |
| MEAN: 46           | MEAN: 44         |

$$t(23) = .314, p < .05$$

School C is a city school, with a large population. School C had the second-highest reading scores among the four schools selected for this study for the female students, as well as for the male students (see Table 6). In the area of Basic Understanding, the female mean is 56, while the male mean is 51. Analyzing Text yielded a mean score of 54 for the females, and a mean score of 44 for the males. The female mean for Evaluating Meaning is 68, while the male mean is 71. Identifying Reading Strategies is the final category, and the female mean is 46, and the male mean is 32 (see Table 5).

Overall scores for School C show the female students' mean score to be just two points higher than the male students' mean score. Even though School B's male and female means were also two points apart (see Table 4), School C's means are higher by eight points for the females, and eight points for the males. School C is a large school, and there is the same number of male as female student's scores (see Table 6).

The male students scored higher than the female students in the area of Evaluating Meaning by three points. The male students had a mean score of 71 in this section, as compared to the highest female score of 68 in this same section. The females' highest score overall was still lower than the males' highest score. However, the males' lowest score of 32 on the Identifying Reading Strategies was lower than the females' lowest score of 46 on the same section (see Table 5).

In the area of Basic Understanding, the females again have the higher score than the male students by five points. Along with Schools A and B, School C's females have displayed stronger verbal skills on the CTBS than School C's males (see Table 5).

In the area of Analyzing Text, the female students scored ten points higher than the male students. An interesting point for School C is that, as the female scores are ranked, so are the male scores. For each group, the highest score is in the category of Evaluating Meaning, followed by Basic Understanding, then Analyzing Text, and finally, Identifying Reading Strategies. Even though each group seems to have the same breakdown of scores, the males are higher only in the area Evaluating Meaning (see Table 5). This is the same as School A, in which the male and female scores are ranked the same, from the top score in the area of Evaluating Meaning (in which the males outscored the females), to Basic Understanding, then Analyzing Text, and lastly, Identifying Reading Strategies (see Table 1). This trend also continued for School B, with the same ranking of categories. The exception for School B is that the males outscored the females in the area of Identifying Reading Strategies (see Table 3).

**Table 5**

**Percentages of School C's sub-test scores on the 2001 CTBS**

| <b>Sub-Test</b>                | <b>Female Percentages</b> | <b>Male Percentages</b> |
|--------------------------------|---------------------------|-------------------------|
| BASIC UNDERSTANDING            | <b>56%</b>                | <b>51%</b>              |
| ANALYZING TEXT                 | <b>54</b>                 | <b>44</b>               |
| EVALUATING MEANING             | <b>68</b>                 | <b>71</b>               |
| IDENTIFYING READING STRATEGIES | <b>46</b>                 | <b>32</b>               |

$$t(6) = .695, p < .05$$

Table 6

Percentages of School C's total reading scores on the 2001 CTBS

## Female Percentages

## Male Percentages

62%

53%

47

77

71

64

36

99

79

50

54

73

40

48

99

44

56

29

79

64

56

43

32

46

14

24

23

51

52

64

44

32

60

47

62

43

61

48

47

38

56

50

SUM: 1130

SUM: 1087

MEAN: 54

MEAN: 52

$$t(40) = .361, p < .05$$

School D is located in a rural area. School D had the highest reading scores among the four schools selected for this study for the female students, as well as for the male students (see Table 8). In the area of Basic Understanding, the female mean is 83, while the male mean is 55. The female mean in the area of Analyzing Text is also 83, with a mean score again of 55 for the males. The female mean for Evaluating Meaning is once again 83, while the male mean jumps to 74. Finally in the Identifying Reading Strategies category, the female mean is 72, and the male mean is 42 (see Table 7).

Overall scores for School D show the female students' mean score to be ten points higher than the male students' overall mean score. Even though School D is not considered to be a small school, the female population in this sample is rather small, with 12 more male than female students (see Table 8).

School D's male students had a 32-point deficit between their highest and lowest scores. The male students had a mean score of 74 in the area of Evaluating Meaning, which is the highest male score in any section among the four schools, as compared to a score of 42 on the Identifying Reading Strategies section. This score of 42 was lower than the females' lowest score of 72 on the same section (see Table 7).

The areas of Basic Understanding and Analyzing Text yielded the same male and female point values, with the female students scoring 83 in each category, and the male students scoring 55 in each area. As is the case with Schools A, B, and C, School D's females obtained higher scores on the verbal skills section of the CTBS, and along with Schools A and C, School D's males displayed an ability to predict and hypothesize, extend and apply meaning, and generalize (see Tables 1, 3, 5, and 7).



School D's male and female reading scores were superior to the other three schools. The largest points discrepancy occurred between school D's females and School B's females. School D's females scored 39 points higher than School B's females in the Identifying Reading Strategies section. School D's females scored a 72, as compared to a score of 33 for School B's females (see Tables 3 and 7). The smallest points margin occurred between School D's females and School C's females on the Evaluating Meaning section, with a 15 point difference. School D's females scored an 84, while School C's females scored a 68 (see Tables 5 and 7).

School D's male population also outscored the male populations of Schools A, B, and C, with the exception of the Identifying Reading Strategies section. In this category, School D's males scored a 42, while School B's males scored a 46. Even though School B's males had the highest score in this category, it was still lower than the highest female score of 72, which was obtained by School D (see Tables 3 and 7).

**Table 7**

**Percentages of School D's sub-test scores on the 2001 CTBS**

| <b>Sub-Test</b>                | <b>Female Percentages</b> | <b>Male Percentages</b> |
|--------------------------------|---------------------------|-------------------------|
| BASIC UNDERSTANDING            | <b>83%</b>                | <b>55%</b>              |
| ANALYZING TEXT                 | <b>83</b>                 | <b>55</b>               |
| EVALUATING MEANING             | <b>83</b>                 | <b>74</b>               |
| IDENTIFYING READING STRATEGIES | <b>72</b>                 | <b>42</b>               |

$$t(6) = 3.33, p < .05$$

Table 8

Percentages of School D's total reading scores on the 2001 CTBS

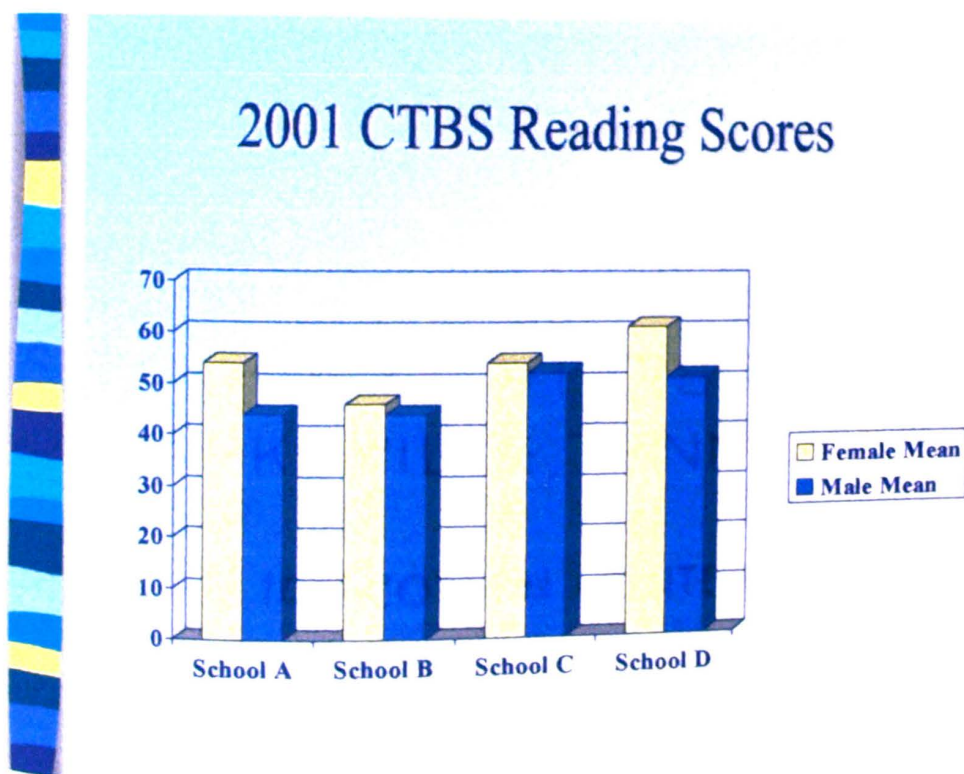
| Female Percentages | Male Percentages |
|--------------------|------------------|
| 60%                | 20%              |
| 86                 | 39               |
| 57                 | 99               |
| 60                 | 30               |
| 82                 | 46               |
| 27                 | 39               |
| 21                 | 48               |
| 92                 | 65               |
| 60                 | 62               |
|                    | 42               |
|                    | 42               |
|                    | 99               |
|                    | 48               |
|                    | 54               |
|                    | 4                |
|                    | 90               |
|                    | 71               |
|                    | 38               |
|                    | 48               |
|                    | 38               |
|                    | 39               |
| SUM: 545           | SUM: 975         |
| MEAN: 61           | MEAN: 51         |

$$t(26) = .918, p < .05$$

Overall CTBS scores on the complete reading section varied from a high score of 61 by School D's females, to an overall low of 44, shared by School A's and School B's males. School C's students obtained the highest overall male score. The lowest overall female score belongs to School B, with a score of 46. In all, School D's students performed at the highest level, while School B's students performed at the lowest level (see Figure 1).

Figure 1

Comparison of total reading scores percentages on the 2001 CTBS



A:  $t(31)=1.455$ ,  $p<.05$

C:  $t(40)=.361$ ,  $p<.05$

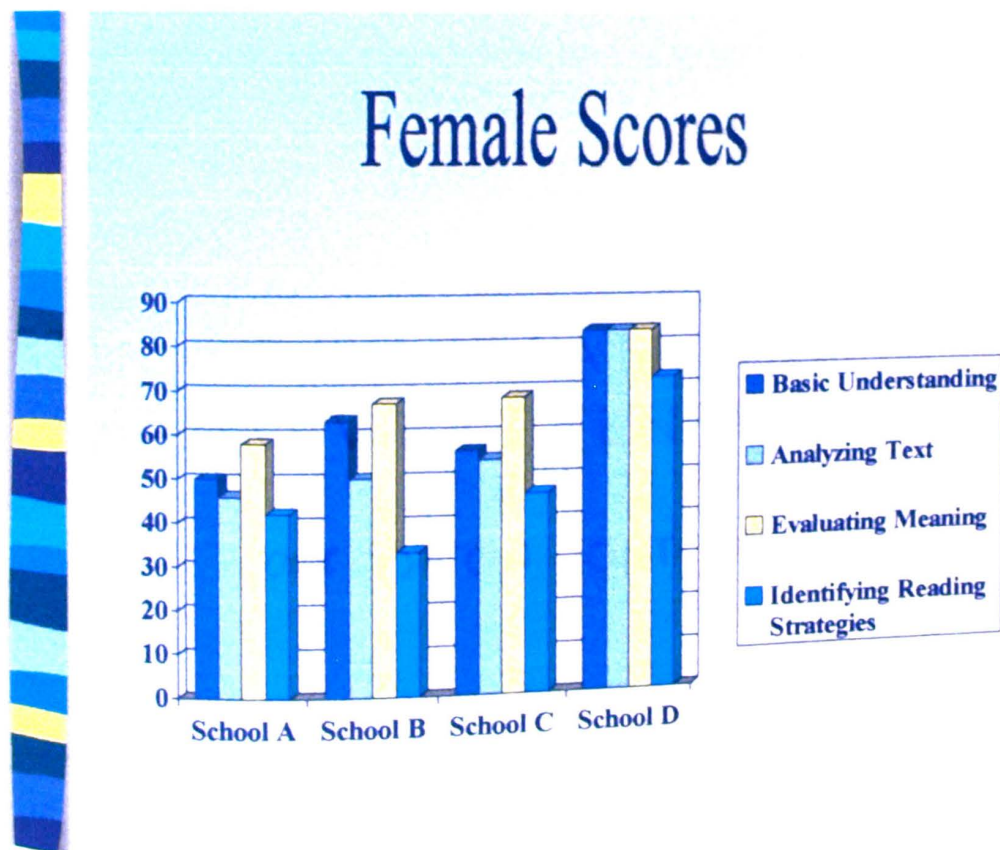
B:  $t(23)=.314$ ,  $p<.05$

D:  $t(26)=.918$ ,  $p<.05$

Of the four reading sections on the CTBS, females experienced the most success in Evaluating Meaning. Conversely, Identifying Reading Strategies was consistently the lowest score among the female population. School D's female students boasted the highest scores in the categories of Basic Understanding, Analyzing Text, and Evaluating Meaning, while School B's females obtained the lowest score in the Identifying Reading Strategies section. In all, School D's females had the highest scores in all four categories, while School A's female students obtained the lowest (see Figure 2).

Figure 2

Comparison of female sub-test percentages on the 2001 CTBS

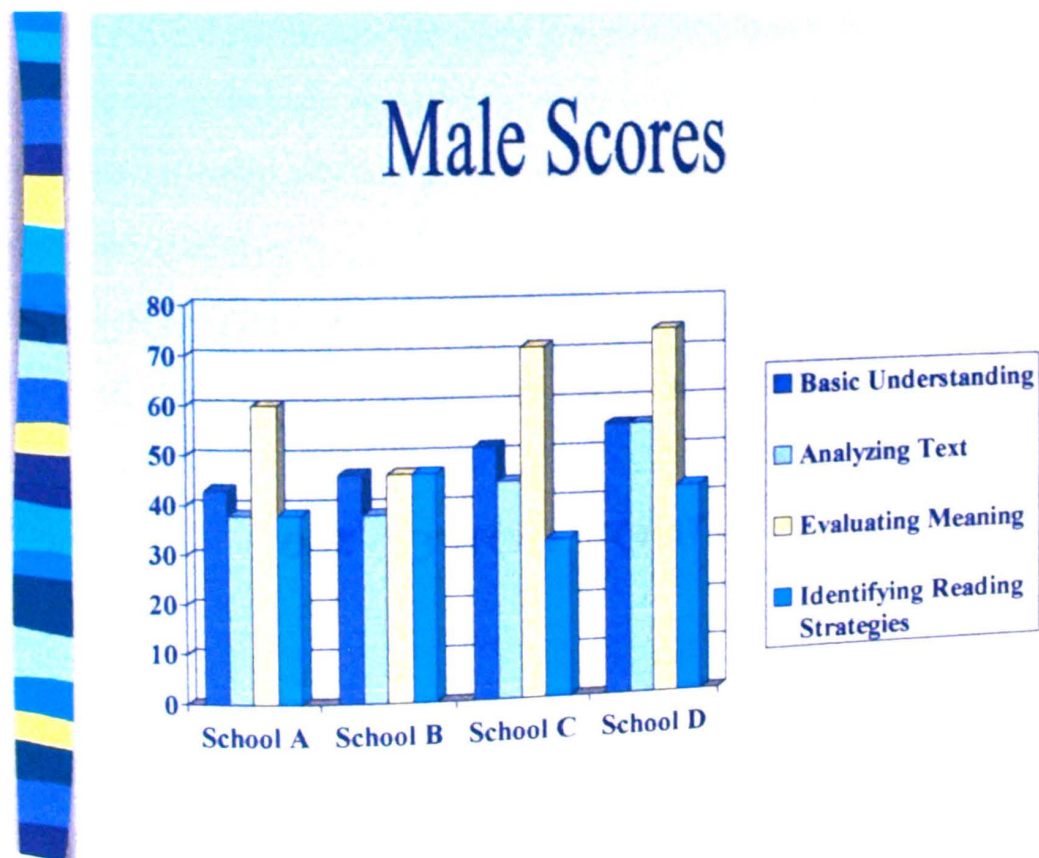




Male scores on the CTBS were, on the whole, lower than female scores. However, some individual categories of male scores were higher than the corresponding female score. For example, School A's male students scored two points higher than School A's female students in the category of Evaluating Meaning. In this same category, School C's males outscored School C's females by a total of three points. Also, School B's male students scored 13 points higher than School B's female students in the area of Identifying Reading Strategies. Overall, School D's male students had the highest score, while School B's male students obtained the lowest (see Figure 3).

Figure 3

Comparison of male percentages on the 2001 CTBS sub-tests





## Conclusions

Parents and teachers have a challenging job, in that they each are shaping young lives. Historically, parents have raised their children based on a set of rules and norms set forth by their parents, who, in turn, were influenced by their parents, and so forth. Traditionally, boys and girls have been raised by their families with an ingrained set of rules which vary according to the child's gender. For example, it is not uncommon to find boys playing sports with their fathers. If reading is involved, it is generally of the non-fiction genre. On the other hand, girls often participate in quieter activities, such as reading, playing with dolls, or coloring. Girls typically share in a variety of genres with their mothers during shared reading time.

In the school setting, teachers may focus more attention on female students during reading and writing activities, and they may then shift their focus to the male population during math or science time. As a result, a variety of factors have combined to result in boys performing more poorly than girls on standardized reading tests by the time they have reached the third grade.

As a result of the research conducted on the four samples and the study of related literature, this study has shown that there is, indeed, a difference in the reading skills of boys verses girls, as based on a standardized test. In each of the four samples, some boys did score higher than some girls, but, on the whole, the girls had the superior scores, both overall, and on most of the four sub-tests.

### Recommendations

It is recommended that further studies be conducted in the area of reading skills using different aged children. It would be useful to know if the results of this study were a phenomenon resulting with this aged child, or if it is a problem which affects all groups of learners in the K-12 setting.

Other recommendations include:

- Replicating this study with the remaining schools in the district
- Conducting a study of males in high school to see if they overcame their reading deficiencies
- Conducting a study of adult men, their level of literacy, and how they are functioning in society

Further recommendations are to include background, reading attitudes of parents, and socio-economic status in future studies. All of these factors play a role in the development of young readers.

Finally, it is recommended that this study be replicated in surrounding areas to see if similar results are obtained.

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## REFERENCES

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## APPENDICES

August 21, 2001

Tracey Leath  
3073 Woody Lane  
Clarksville, TN 37043

Dr. Robert Lovingood  
Superintendent  
200 Glass Avenue  
Hopkinsville, KY 42240

Dear Dr. Lovingood:

Thank you for meeting with me on August 1 to discuss my proposal for my field study to complete my Ed.S degree at Austin Peay. The following is a description of what the field study will entail.

I plan to randomly select three to four elementary schools from our county to participate. I will ask to be provided with CTBS reading "Basic Understanding", "Analyzing Text", "Evaluating Meaning", and "Identifying Reading Strategies" scores from the randomly selected schools, and I will ask that these scores be classified into groups by gender. At no time will I have access to any names, and schools will be identified as "School A", "School B", and so forth.

The purpose of my study is to see if there are any differences in the reading skills of boys versus girls at the third grade level, and if so, how great the differences are.

If there are any questions, please feel free to contact me at school: 424-0682, or at home: 931-358-3754. I plan to begin my research when I have your approval, as well as the approval of the University Independent Review Board at Austin Peay. I expect this to occur sometime within the Fall 2001 semester. Thank you for your consideration.

Sincerely,



Tracey Leath  
Curriculum Specialist  
Crofton Elementary

Austin Peay State University  
Institutional Review Board

40

February 12, 2002

Tracey Leath  
c/o Margaret Deitrich  
Education Dept.  
APSU Box 4545

RE: Your application dated January 23, 2002 regarding study number 02-035: A Study of Gender and Reading as Measured by the Comprehensive Test of Basic Skills (Austin Peay State University)

Dear Ms. Leath:

Thank you for your recent submission. We appreciate your cooperation with the human research review process. Your request for approval of the new study listed above was reviewed at the January 31, 2002, meeting of the Austin Peay State University IRB. Please read the following information carefully. If you have any questions at all do not hesitate to contact Lou Beasley (221-6380; fax 221-6382; email: beasleyl@apsu.edu) or any member of the APIRB.

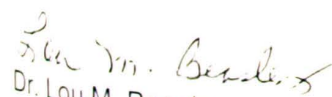
This is to confirm that your application may be approved when the following conditions are met:

#8, second paragraph, first sentence - Add a statement to let the participants know that the only identifying marks used will be gender.

#8, third paragraph - Add to text that the permission from the Superintendent should be received first.

Please submit your revised protocol to the Office of Grants and Sponsored Programs for final review by Dr. Timothy Sweet-Holp. It is important that you not begin your study until you have responded to the conditions and they are approved. Again, if you have questions or need assistance contact any member of the APIRB. We will be more than happy to help you successfully complete the human research review process.

Sincerely,

  
Dr. Lou M. Beasley

Chair, Austin Peay Institutional Review Board

# Austin Peay State University

## Institutional Review Board

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February 25, 2002

Tracey Leath  
c/o Margaret Deitrich  
Education  
APSU Box 4545

RE: Your application dated February 21, 2002 regarding study number 02-035: A Study of Gender and Reading as Measured by the Comprehensive Test of Basic Skills (Austin Peay State University)

Dear Ms. Leath:

Thank you for your response to requests from a prior review of your application for the new study listed above.

Congratulations! This is to confirm that your application is now fully approved. The protocol is approved through revisions. The Informed consent is not applicable. This approval is subject to APSU Policies and Procedures governing human subjects research. You may want to review this policy which can be viewed on the APSU website at:  
[www2.apsu.edu/www/computer/policy/2002.htm](http://www2.apsu.edu/www/computer/policy/2002.htm)

You are granted permission to conduct your study as most recently described effective immediately. The study is subject to continuing review on or before January 30, 2003, unless closed before that date. Enclosed please find the forms for reporting a closed study and for requesting approval of continuance.

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. If you have any questions at all do not hesitate to contact Lou Beasley (221-6380; fax 221-6382; email [beasleyl@apsu.edu](mailto:beasleyl@apsu.edu)) or any member of the APIRB.

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

enclosure