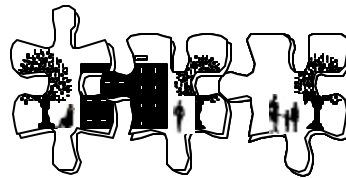




Male Reading Teachers: Effects on Inner-city Boys

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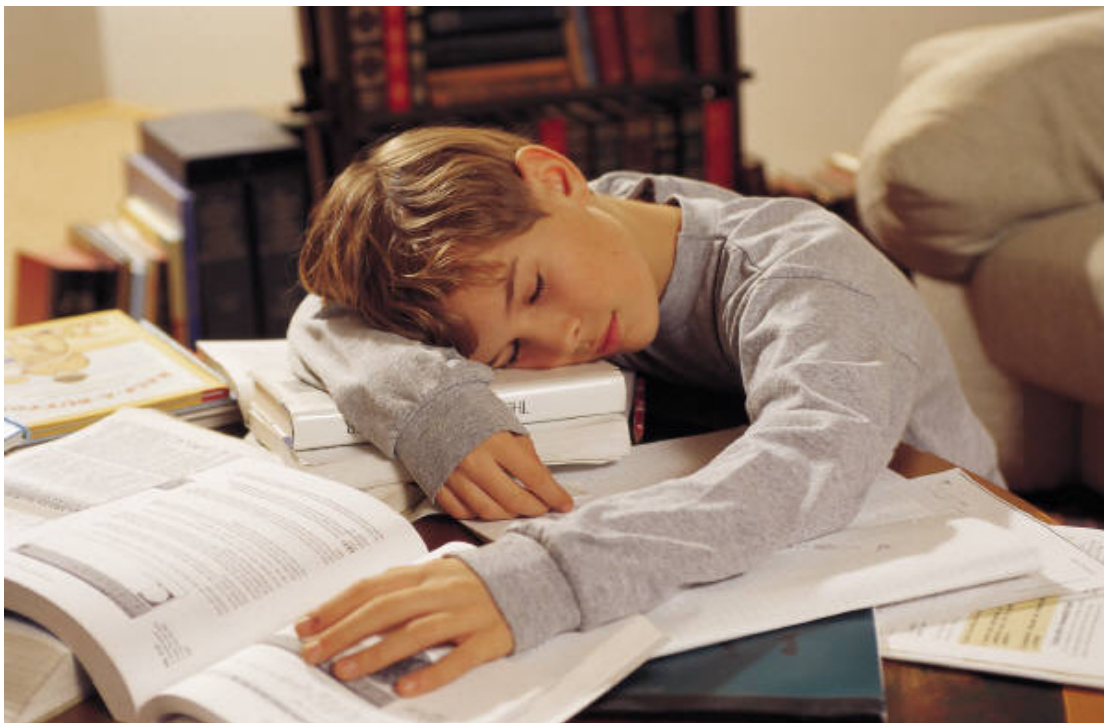
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Abstract

Eighteen inner-city first and second grade boys participated in a pilot study on the effect of sex of reading teacher on boys' attitudes toward and performance in reading. Each boy participated with either a male or a female research assistant in a 22-week Paired Reading intervention using texts shown to be of high interest to boys. Findings suggest that these contexts yield significant increases in boys' reading performance, sense of physiological well-being while reading, and their sense of reading progress regardless of the sex of their reading teacher.



TABLE OF CONTENTS

EXECUTIVE SUMMARY	6
PROLOGUE	9
History of the project	9
INTRODUCTION	11
Importance of Literacy Skills	12
Boys' Feminine Experiences with Literacy	13
Pathways to Reading Proficiency	15
Gender Schema Theory as an Explanation for Boys' Reading Deficits	17
The Importance of Male Models	19
Hypotheses	22
METHODS	23
Participants	23
Instruments	26
Procedures	31
RESULTS	33
DISCUSSION	39

EXECUTIVE SUMMARY

National and international test results suggest that boys are experiencing difficulty in school. Boys are over-represented in the groups of students who achieve low marks, fail school, and drop out of school. Of particular concern is their low interest in and achievement in literacy activities.

Although it is true that some boys do not do well at reading, it is also true that many boys enjoy reading and exhibit excellent reading performance. This wide range of reading outcomes displayed by boys suggests that boys are not a homogeneous group; rather, they respond to texts in a variety of ways. Unfortunately, public concern has fueled well-intentioned interventions that miss the mark in addressing diversity in boys' learning needs. In the rush to address what is perceived as a serious deficit in boys' schooling, some schools are rushing to hire more male teachers. This hiring initiative is aimed at creating 'less feminized' schools and providing boys with more male role models.

The goal of the current exploratory research project was to contribute to the literature that addresses ways to enhance boys' learning opportunities. Of particular interest was the intersection between the sex of the reading teacher and boys attitudes toward and performance in reading.

Our research project involved a group of 21 first and second grade boys in an inner-city school. Before the intervention, the co-investigators and four student research assistants (RAs) administered tests of boys' reading performance, boys' self-perceptions as readers and boys' reading attitudes. The intervention involved 22 weeks of one-on-one

reading with either a male or a female RA. Each week, the RAs used Paired Reading to read individually with the boys for two sessions each lasting one-half hour. In six of the weeks, the RAs also re-administered the pre-intervention tests.

Findings indicated that the average gain in reading score over the 22 weeks was 1.2 grades and that some children gained as many as four grade levels in reading. Significant gains were evident at the 10-week mark as well as the 22-week mark. Gains within the shorter time period are important in situations where students change schools during the school year, a situation that occurs frequently in some inner-city schools. Even with a shorter duration, the intervention proved effective. It is also noteworthy that there were no significant differences found between children who worked with a male RA and children who worked with a female RA, suggesting that the sex of the reading teacher is not relevant to children's reading performance gains.

Tests of self-perceptions as readers showed that boys made significant gains in their self-perceptions of physiological states and in their self-perceptions of progress over both the 10-week and 22-week intervention. Again, no differences were found between children who worked with a male RA and children who worked with a female RA.

Tests of boys' attitudes toward reading indicated no significant changes over the course of the 10-week or the 22-week intervention. Although this finding seems negative, it gains a positive stance when presented in light of past research on boys' attitudes toward reading. Since research shows that the sharpest decline in boys' attitudes toward reading occurs from grades one to four, a null finding suggests that the intervention contributed to exacerbating the expected decline.

Although a final analysis was planned that would examine the boys who viewed reading as a separate group, this analysis was not possible. All the boys stated that they viewed reading as a masculine or gender-neutral activity. Although this may represent their true feelings, the researchers suspect that measurement issues may have contributed to this lack of findings.

Overall, the findings of this exploratory study suggest that policies aimed at attracting more male teachers as a means of addressing boys reading needs may be misguided. Although the findings are tentative given the small sample size, and although they require replication with a larger sample (currently taking place), they add support to the current body of literature suggesting that the sex of the reading teacher is not relevant to boys' reading performance, self-perceptions, or attitudes.

PROLOGUE:

MALE READING TEACHERS: EFFECTS ON INNER-CITY BOYS

History of the Project

The current project is an extension of earlier work and was funded by a grant from the Winnipeg Inner-city Research Alliance (WIRA). WIRA was formed in 1999 to bring academics and community members together as partners for the purpose of exchanging ideas and developing sustainable initiatives to address the housing, health, economic development, youth, and cultural needs of inner-city neighbourhoods. Since February 1999, WIRA research projects have been funded jointly by the Social Sciences and Humanities Research Council of Canada and the Canada Mortgage and Housing Corporation under the Community University Research Alliance program. WIRA funds action-oriented research designed to improve the quality of inner-city life. The current project involves a partnership between the administration, faculty, parents, and children of an inner-city Winnipeg school and two researchers (Laura Sokal and Herb Katz) and four of their students (Matthew Adkins, Tannis Grills, Crystal Stewart, Greg Priddle) from the University of Winnipeg.

Herb Katz and Laura Sokal have established a research program that explores boys' school reading experiences. Past work (Katz & Sokal, 2003; Sokal & Katz, 2004) has demonstrated clear links between the sex of the reading model, boys' attitudes toward reading, and access to texts shown to be of high interest to boys (Worthy, Moorman & Turner, 1999). The current project sought to extend that work in two ways. First, we wished to extend the role of the reading models from that of reading to the boys to

teaching the boys to read. This allowed us to explore boys' attitudes toward reading and the effects of the reading teacher's sex within a new context. Furthermore, it allowed us to examine these two variables' relationship with boys' reading achievement. Since our past research has consistently supported the positive effects of texts shown to be of high interest to boys, we chose to hold that variable constant within all treatment groups. In effect, the current research was interventionist in nature since we were interested in determining which other variables supported the greatest gains in young boys' reading achievement.

Another extension of our past work related to the specificity of our sample group. The children who participated in our study were primarily, but not exclusively, Aboriginal boys living in poverty in an inner-city neighbourhood. They are children whose lives are associated with factors characteristic of school leaving and failure. Demographic information supplied by the children's parents (see Table 1) indicate that half of the children's mothers and one-third of the children's fathers had not finished high school, most live in poverty, and over half of the children's parents are unemployed. Literacy skills may be especially important to these children as a means of self-direction, self-expression, and social mobility.

INTRODUCTION

Public and academic debate resulting from international test results has labeled boys as the “new disadvantaged” (Foster, Kimmel & Skelton, 2001). This characterization --and its impetus for action-- obscures gaps in our knowledge about boys’ experiences of reading in school even as governments rush to implement programs to address these perceived needs. Although standardized tests paint a general picture of the reading performance in the broad categories of ‘boys versus girls,’ they do little to assist us in understanding the variability within boys’ reading performance. Furthermore, we are left with little direction on how to create learning environments that foster boys’ reading development. Research has shown that, overall, boys spend less time reading, have lower motivation to read, do not particularly value reading, are less confident readers, have less interest in reading, and perceive themselves as having lower reading skill levels than girls (Baker & Wigfield, 1999; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Gambell & Hunter, 2000; Labercane & Shapiro, 1986; McKenna, Ellsworth, & Kear, 1995; Millard, 1997; Solsken, 1993; Wigfield, Eccles, Yoon, Harold, Arbreton, Freedman-Doan & Blumenfeld, 1997). Added to this concern is the fact that the percentage of male teachers in Canada is decreasing. The most recent statistics released by the Council of Ministers of Education and Statistics Canada show that the percentage of full-time male educators from 1999-2000 was 35%, a drop of 6% from the 1989- 1990 period (Statistics Canada, 2003). Furthermore, according to Paul Cappon, director-general of the Council of Ministers of Education, the percentage of male teachers will continue to drop over the

next two decades (Mitchell, 2003) because many of the men currently teaching are soon to retire, and insufficient numbers of young, male teachers are taking their places. Concern about the decrease in number of male teachers involves both issues of sex and gender. Sex refers to an individual's biological make-up—teachers are male or female. Gender is a psychological and sociological term that refers to the stereotypes usually associated with one's sex –masculine, feminine or gender-neutral. The concern about the under-representation of male teachers in schools is based on a concern that some children will come to view school and reading as feminine. Given current public concern over boys' reading performance and the interest that governments are showing in encouraging the recruitment of male teachers to early years classrooms, the current study sought to explore how boys' reading motivation and performance is affected at the classroom level by the sex of their reading teachers.

Importance of Literacy Skills

Since competent reading is the strongest predictor of school success (Hoffert & Sandberg, 2001), it is important to ensure that young boys have the skills needed for success in school. A number of recent national and international surveys and studies (Council of Ministers of Education, Canada, 1999, 2001; Statistics Canada, 2002; Measuring Up) have been the basis for concluding that boys' attitudes toward reading and their reading performance are in need of special attention in the classroom. Boys' reading is not simply different; it lags behind the reading competency of girls in Canada as well as in 31 other countries that recently completed skills testing (Council of Ministers of Education, Canada, 2001).

Poor reading skills are harbingers of other factors that place young boys at risk. The risks are highlighted in *At the Crossroads; Youth in Transition* (Statistics Canada, 2002); the school dropout rate for Canadian boys is 40% higher than for Canadian girls. Furthermore, copious Canadian research has made clear links between school completion and adult income levels. Boys who leave school early due to poor reading skills are at a disadvantage when it comes to future employment. In the William Whyte area—the area of our study—the incidence of low income is 49.5%, compared with 15.5% for the rest of Winnipeg. Incomes under \$20,000 are representative of 54.5% of the households in the William Whyte area, double the incidence of the rest of Winnipeg. The low incomes in this area are linked to the lack of school completion—55% of people over age 15 in the William Whyte area do not hold a high school diploma, compared with 28% in the rest of Winnipeg. The incidence of people with less than a grade nine education is 21.2% in the William Whyte area compared to 7.8% for the rest of Winnipeg (<http://winnipeg.ca/census/2001>). Clearly, school success is linked with future economic opportunities. Establishing the variables that promote good reading skills—skills strongly linked with school success—may inform educators of ways to maximize opportunities for the young boys living in the William Whyte neighbourhood.

Boys' Feminine Experiences with Literacy

Some authors have speculated that the reason for some boys' lack of engagement with reading is that they perceive it to be a feminine activity (Baron, 1996; Brophy, 1985; Cummings, 1994; Government of the UK, 2000; Hermine, 1998; McKenna, 1997; Nodelman, 2001; Pottorff, Phelps-Zientarski, & Skovera, 1996; Shapiro in Hall, 1999).

Past research has supported this claim: Katz and Sokal (2003) showed that 24% of grade two boys view reading as feminine.

The importance of mothers and fathers in children's gender development has been explored in a wide range of research (see Tenenbaum & Leaper, 2002 for a review) and has been shown to be related to the ideas children develop about gender. Research about reading practices in the home and school offer some evidence about why boys may come to perceive reading as feminine. In the home, the average child is read to for approximately 1000 hours before beginning school (Adams, 1990). In most cases the reading model is female (Millard, 1997; Pottorff, Phelps-Zientarski, & Skovera, 1996). In the William Whyte area, 27.9% of homes are headed by single mothers (compared to 15.4% for Winnipeg), leaving these children with no male reading models in their homes (<http://winnipeg.ca/census/2001>). Female reading models are further reinforced when children enter into day care or school, where their teachers and reading models are also predominantly female (Basow, 1992; Delamont, 1990). Thus, cultural factors promote children perceiving reading as a gender-marked behaviour (Millard, 1997).

Another situational variable that supports some boys' belief that reading is feminine is found in the types of books offered to children by parents, teachers, and librarians. In one study (Worthy, Moorman & Turner, 1999), when asked their reading preferences, boys stated that comics, scary stories and magazines were their preferred texts. These texts were not usually the genres of texts offered at school and at home. Only one-third of school libraries offer these genres (Worthy, Moorman & Turner, 1999) because teachers and librarians do not take these genres of texts seriously (Gambell &

Hunter, 2000). This situation results in most boys having difficulty finding enjoyable books to read at school (Ivey & Broaddus, 2001).

Gambell and Hunter (2000) found that girls more often choose books that are suggested by friends, family and teachers. Boys, however, are more likely to mention genre – including dimensions of story grammar, and sex of main character – as an important factor in text selection, suggesting that interest in the way content is presented may be more salient to them than social motivation. Gambell and Hunter contend that identification with genre is the most consistently supported explanation for sex differences in reading performance in Canadian youths. Oldfather (1992) supports this view with his finding that readers become more engaged with the text when they perceive it as being personally meaningful. Our own research (Katz & Sokal, 2003) showed that positive effects in terms of boys' attitudes toward school and less feminized views of reading can be realized through the use of "boy-friendly" texts at school. Considered together, the limited selection of text genres available to young boys and the pervasiveness of female reading models may be powerful factors in convincing young boys that reading is a feminine activity. This perception, in turn, may affect boys' motivation toward reading.

Pathways to Reading Proficiency

A key variable in children's reading performance is their motivation (Shiel & Cosgrove, 2002). Wigfield (Eccles & Wigfield, 2002; Guthrie & Wigfield, 1997) proposed that children's engagement in reading is affected by a variety of motivational dimensions such as self-efficacy, subjective task value and social motivation. *Self-*

efficacy is referenced to the question, "Can I succeed?" It refers to the readers' self-perceptions of being a successful reader. *Subjective task value* is referenced to the question, "Do I want to succeed and why?" While some boys desire to be successful readers, others do not. Reasons for the absence of subjective task value for reading vary and may include disinterest in the task, or perceptions that the task is unimportant or of little use (Guthrie & Wigfield, 1997).

Another component of motivation discussed by Guthrie and Wigfield (1997) is *social motivation* (Wentzel, 1996). According to Wigfield (2000), sharing reading with others in school and home can "strengthen a child's sense of reading competence and stimulate a child's motivation to read" (p.143). Research suggests that this interaction is especially salient to girls (Gambell & Hunter, 2000). In contrast, perceptions that reading is feminine may serve as a strong anti-motivator to some boys. Research has shown that boys who take part in cross-gender-stereotyped activities are viewed more negatively than girls who do so (Bussey & Perry, 1982; Levy, Taylor, & Gelman, 1995; Martin, 1990; Sandnabba & Ahlberg, 1999). Boys are more likely to receive negative social consequences for cross-gender-stereotyped play (Fagot, 1977, 1989; Zucker, Wilson-Smith, Kurita, & Stern, 1995) and are punished more for cross-gender-stereotyped play than girls (Heilbrun, Wydra, & Friedburg, 1989). Millard (1997) suggests that the most powerful influence on boys' lack of motivation to read may be the pressure of the peer culture. In boys who view reading as feminine, Guthrie and Wigfield's (1997) social motivation factor may actually serve as an anti-motivator to reading. That is, whereas

girls seek social affiliation through sharing this gender-marked feminine activity, boys share social affiliation through rejecting it.

Eccles (Eccles & Wigfield, 2002), whose *Expectancy-Value* model is the basis of Guthrie and Wigfield's model, adds another factor in the motivational mix. Eccles suggests that to understand student motivation, we must also examine the perceived cost of engaging in the task. For young boys, the immediate cost of participating in a self-designated feminine activity such as reading may be more salient than the long-term costs of illiteracy.

It is important to note, however, that not all boys are struggling readers and that some boys hold very positive views of reading. Some boys do not perceive reading as feminine, and even those who do sometimes maintain their love of reading despite its cross-gendered classification (Katz & Sokal, 2003). Gender schema theory provides a lens through which to examine these within-gender differences. Furthermore, it provides us with a model through which to investigate which variables are most important in enhancing the reading attitudes and performance in a variety of types of boys. Attention to the diversity in boy's responses to reading is necessary if we are to understand the complex interactions between gender development and reading motivation.

Gender Schema Theory as an Explanation for Boys' Reading Deficits

Although Katz & Sokal (2003) showed that 24% of second grade boys perceive reading as feminine, they also found that half of those boys indicated that they liked reading. That some boys and not others lack motivation to take part in something that they interpret as a feminine activity can be understood through the lens of gender schema

theories (Bem, 1981; Liben & Bigler, 2002; Martin & Halverson, 1981). Gender schema theory posits that gender is a multi-dimensional construct, which includes gender stereotype knowledge, gender attitudes, gender preferences, and gender schematicity. *Gender stereotype knowledge* refers to an individual's knowledge of societal gender stereotypes (*Who usually reads?*) and is thought to be well-developed by middle childhood (Ruble & Martin, 1998). *Gender attitudes or flexibility* refer to a person's attitudes about the traits, occupations and the behaviours of others and are usually referenced to males or females as groups (*Who could read?*). *Gender preferences* refer to an individual's own actions or choices about themselves (*Would I like to read?*). Finally, *gender schematicity* refers to an individual's inclination to use gender as a salient schema for interpreting social information. High gender schematic individuals will use gender to help understand and categorize their environments while low gender schematic individuals will use other schemata, such as interest in an activity. Given the copious evidence that society supports a more rigid masculine gender role, it comes as no surprise that research has shown boys are more gender schematic than girls (Carter & Levy, 1988; Levy, 1989; Sokal, 2000, 2001).

In general, most gender researchers agree that the four dimensions of gender develop independently, although support for this claim has not been universal (Liben & Bigler, 2002). Citing measurement issues in previous research, some researchers (Liben & Bigler, 2002; Ruble & Martin, 2002) have suggested that the possibility of a relationship between the various dimensions of gender development needs further examination. In particular, the relationship between children's gender stereotype

knowledge (*Who reads?*) and their gender preferences (*Would I like to read?*) has received recent attention (Miller & Ruble, 2003). Previous research (Katz & Sokal, 2003) has shown that gender schematicity acts as a mediating factor between boys' feminized views of reading and their reading preferences. Katz & Sokal showed that boys who view reading as feminine and dislike reading are more gender schematic than boys who view reading as feminine and like reading. This finding suggests that understanding the relationship between the various dimensions of gender development may also have implications for our understanding of boy's reading motivation and preferences.

If some boys come to perceive reading as a feminine activity due to their experience with female reading models and feminine texts, it may be possible to modify these perceptions. De-feminized views of reading could, in turn, lead to more positive attitudes toward reading and better performance in reading in some boys.

The Importance of Male Models

According to gender schema theory, as well as other developmental theories of gender development, children's observations of models—especially same-sex models—are important to children's gender identity development (Golombok & Fivush, 1994; Martin & Halverson, 1981). In school settings, the importance of male models is thought to be so important to male students' education that the Australian government plans to amend anti-discrimination laws to allow schools of teacher education to offer "male-only" scholarships (Discriminating to put more men in the classroom, March 10, 2004). This ideology is reflected in Canadian schools by a call for more male teachers,

volunteers, and teaching assistants in early years classrooms in Ontario (Young boys may benefit from more male teachers, July 9, 2003).

From both theoretical and pragmatic perspectives, the effects of male models on young boys are fruitful areas for further investigation. Gender schema theories posit that children's cognitive structures develop within a reciprocal relationship with their experiences (Martin & Halverson, 1981). As children's experiential base grows, they begin to organize experiences into categories of "like me" and "unlike me." While children learn the cultural stereotypes associated with both sexes, they learn more about their own sex. By age six, children can reliably make predictions about other same-sexed children's behaviours, and by age eight they can also make predictions about the behaviours of children of the other sex (Martin, 1993). Interestingly, boys' knowledge of their own gender role is far greater than their knowledge of the other gender role, a situation not representative of girls (Golombok & Fivush, 1994). Given the sanctions placed on boys' who participate in cross-sexed behaviours and also given their higher levels of gender schematicity, it follows that boys would be motivated to learn more about their own gender role.

While some theories of gender development place special emphasis on the importance of the same-sex parent as a model, gender schema theory suggests that information about gender roles permeates our children's environment. Television, siblings, peers, parents, music, advertising, schooling and the like are all rich sources of gendered information. From this theoretical perspective, it stands to reason that children would also be gathering information about gender roles from their teachers.

There is a plethora of research about the importance of female teachers to girls' attitudes and performance. Such is not the case with research about boys and male teacher role models. Moreover, despite the impending changes in scholarships in Australia, Dumbrell (NSW Teachers' Federation) claims that there is no academic research to support that the current gender imbalance in teaching staff composition has a negative effect on children's education (A good man is hard to find—Fewer than one in three teachers male, March 12, 2004). With the exception of newspaper articles and non-peer-reviewed rhetoric, there are few empirical studies that examine the relationship between boys and their male teachers. Common sense as well as theoretical speculation support the importance of male models in boys' gender development. Only three empirical studies were found that dealt with this issue, and all three failed to support the importance of male teacher models in the classroom (Carrington & Skelton, 2003; Froude, 2002; Martin, 2003). Further, it is unclear whether the sex of a male student's teacher—as opposed to peers, fathers or brothers—is especially influential in the boy's attitudes toward or performance in reading.

The lack of research on male role models in school stands in sharp contrast to the examining the effects of school contexts on girls' achievement. In addition, discussion of boys' reading needs is too often framed as a comparison with girls' performance as a means of suggesting that boys are in some way deficient. A more helpful framing of this situation is to explore the ways that boys come to be readers as a means of suggesting practices within our schools that allow boys to reach their full academic potential. It is likely that this type of exploration would result in a greater understanding of the

variability within the category of 'boys' and would therefore change the focus of examination from one of gender differences to one of individual, and socio-economic differences.

Hypotheses

Since our prior research (Katz & Sokal, 2003) has demonstrated that high interest text can alter boys attitudes toward school (when read by a female model) and can decrease boys' view of reading as feminine (when read to by a male model), we are now interested in how the sex of the reading teacher effects performance. That is, will boys who are taught to read high interest text by a male reading teacher experience greater gains in self-perceptions as a reader and in reading performance than boys who are taught to read high interest text by a female reading teacher? Based on prior research that demonstrated positive attitudinal effects when children were exposed to boy-friendly texts read by a reading teacher regardless of the sex of the reading teacher, we hypothesize that the sex of the reading teacher will not affect either of the dependant variables when children are taught to read. Furthermore, we hypothesize that high gender- schematic boys who believe that reading is a feminine activity will experience significantly less progress in their reading self-efficacy and performance. This hypothesis is based on our past research (Sokal & Katz, 2004) that showed boys' perceptions of reading as feminine are very difficult to change.

METHOD

Participants

The participants originally included 21 first and second grade boys from an inner-city elementary school in Winnipeg. The school that participated in the study is located in a low socio-economic setting, and its population is comprised mainly of Aboriginal students. This school, like most inner-city schools in Winnipeg, experiences high student

Figure 1: Comparison of Minutes of Daily Studying to Television Viewing

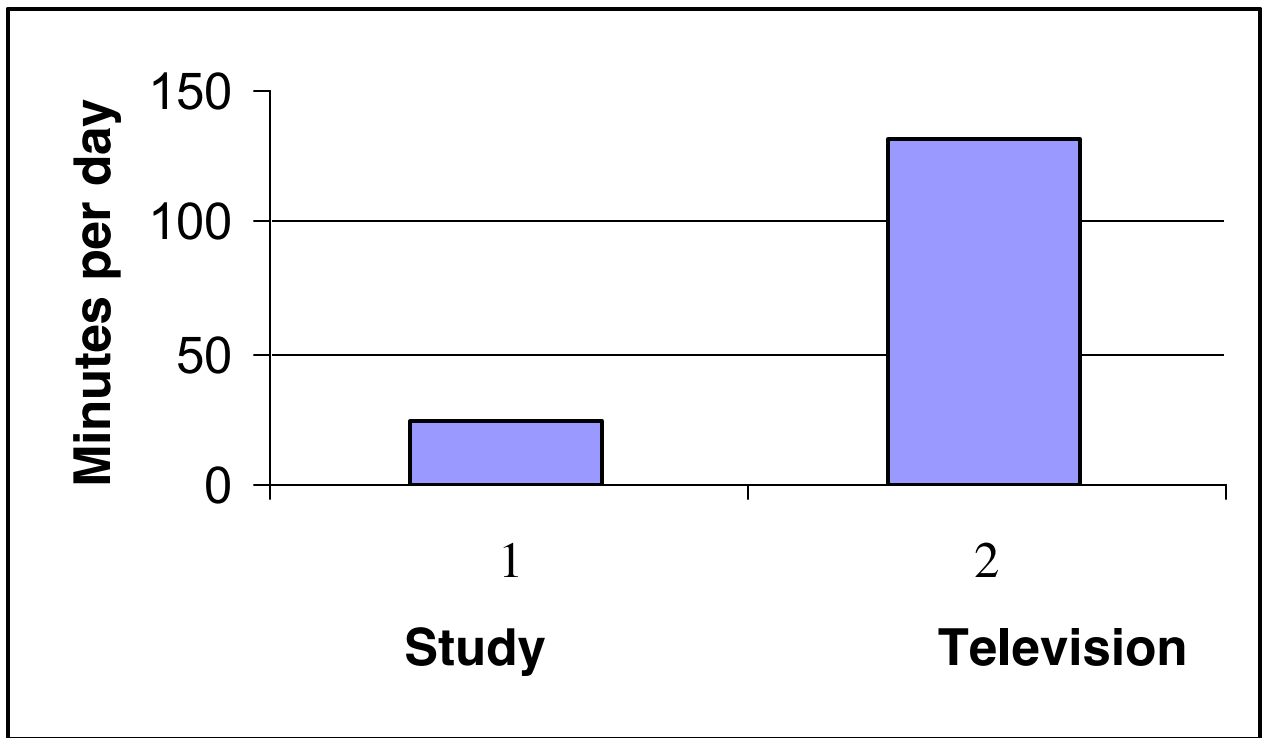


Table 1. Demographic Information

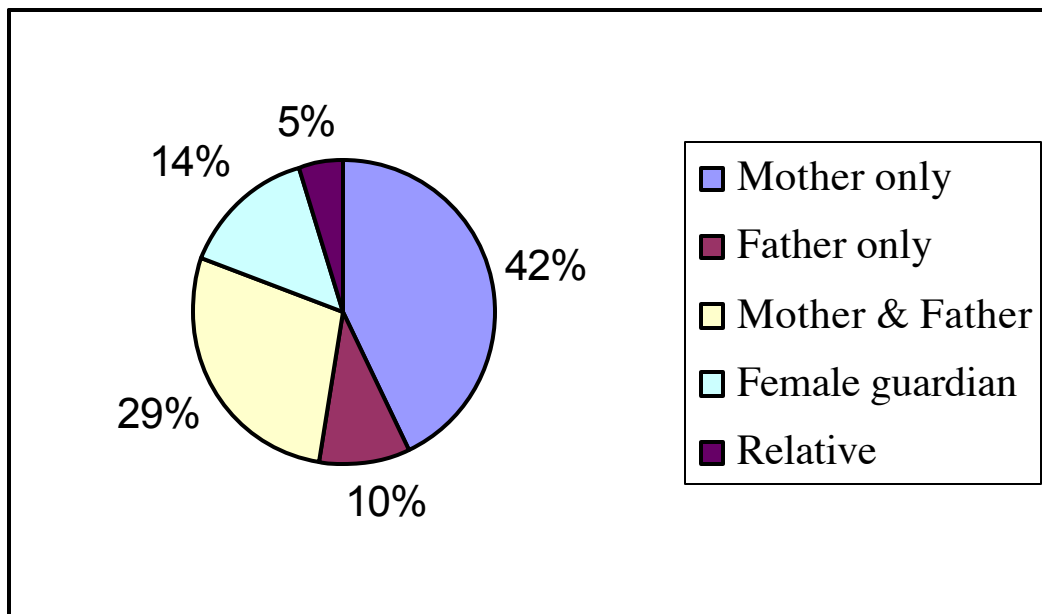
Descriptor	Frequency
<i>Language spoken in the home</i>	
English	20
Other	1
<i>Ethnicity</i>	
Canadian	4
Canadian & Aboriginal	17
<i>Mother's Education</i>	
Less than High School	9
High School	4
College or university	3
<i>Father's Education</i>	
Less than High School	6
High School	3
College or university	8
<i>Family Income</i>	
Less than 20000	11
20001-40000	3
40001-60000	3
60001 or more	1
<i>Work Status of respondent</i>	
Employed full time	1
Employed part-time	5
Unemployed	10
Looking for work	2
<i>Number of siblings</i>	
0-1	7
2	7
3-4	6
<i>Adults living in the home</i>	
Mother only	9
Father only	2
Mother & Father	6
Female guardian	3
Relative	1
<i>Regular Phone line operational?</i>	
Yes	16
No	5

Note: Not all families chose to supply all demographic data resulting in totals of less than 21 in some data.

turnover rates. As a result, only 18 of the boys originally enrolled were still attending the school at the end of the 22-week intervention. Although this represents a 14% attrition rate, this percentage is much lower than that of a typical year at the study school.

Demographic information about the families who participated at study onset is presented in Table 1. Further demographic data are presented in Figures 1 to 2. Grades one and two were selected because it has been shown that gender knowledge is established by this age (Blakemore, 2001; Serbin & Sprafkin, 1986; Weinraub, Clemens, Sockloff, Ethridge, Gracely, & Myers, 1984). That is, by the age of seven boys would have solidified their understanding of reading as masculine, feminine or gender neutral. Since we aimed to observe and potentially modify boys' perceptions of reading as feminine, it is important that the participants had achieved this milestone before they began the treatment and also that they be young enough to make change feasible.

Figure 2. Composition of Participants' Families



Instruments*Child Gender Schematicity Measure: Early Years (CGSM)*

The Child Gender Schematicity Measure: Early Years (Sokal, Carter, & Levy, 200) (CGSM) is a computerized measure that presents children with a series of 27 toy picture pairs. The first three picture pairs depict pets and are used as training pairs to ensure children understand how to indicate their preferences using the computer. They are not included in any calculations. Children are instructed to look at the toys in each pair and select the item they prefer. They are assured that there are no right or wrong answers, as the goal of the task is to determine their preferences. Toys used in this computer program were selected and categorized based on the perceptions of Canadian children in grades one to four (Sokal, Sadovsky, & Levy, 2001). The images of toys include feminine items (playing dolls, make-up, and shopping), masculine items (wrestling, playing video games, and football) and gender-neutral items (playing soccer, basketball, and tag).

Two separate scores are derived from this instrument. The first score, termed the *schema facilitated score*, was based on the mean of the latency times children demonstrate in choosing preferred toys in the masculine-feminine pairs related to their average latencies for all types of pairs. The second score, the *schema inhibited score*, was derived from the mean of the latency times children demonstrate in choosing between two same gender-typed toys related to their average latencies for all types of pairs. As directed by Levy in the original measure, “in both cases, the child’s mean response latency was subtracted from his or her response latencies to the relevant pairings and then

divided by the standard deviation of the child's response latencies" (Levy, 1989). Children's latencies in pairings where neutral items appeared were used in computing each child's overall latency, but did not enter into the two schema latency scores. In this way, children with low facilitated scores were more gender schematic than those with high facilitated scores, because the shorter latency suggested that gender schema was being used to assist in decision-making. The opposite is true in the case of inhibited scores. A high inhibited score would indicate a high gender schematic child, as the stimuli do not facilitate an easy choice when gender schema is being used as the basis of selection. As expected and demonstrated in past research (Carter & Levy, 1988; Levy, 1989), a child's facilitated and inhibited scores are negatively correlated. However, the same research has demonstrated that each score is related to different dimensions of gender development within children. These two scores are therefore examined separately in the analyses.

The PM Benchmark Series (Revised)

The PM Benchmark Series (Revised) was administered at six points during the intervention. The series consists of 30 accurately leveled books ranging progressively from kindergarten to grade six and easy-to-use reading and assessment forms for teacher use. The data gathered includes miscues, and unaided or prompted retellings. This diagnostic approach allows for depth of measurement. The data yield instructional and independent reading levels, strategies and sources of information used to recognize words, ability to read for meaning, use of self-monitoring systems and familiarity with print conventions.

The PM Benchmark Kit recommended itself for our purposes for the following four reasons: (1) It allowed us to use one test for all participants through the multiple testing points. Examination of pre-intervention reading achievement results for students enrolled in kindergarten and grade one students in inner-city schools suggested that their reading levels would range from pre-readers to fully independent readers at the onset of grades one and two. The PM Benchmark Series is among the few testing programs available that will allow us to account for this ability range and changes that may occur. The use of different tests (for example, the Test of Early Reading Ability [3rd Ed.], and an informal reading inventory such as the Diagnostic Reading Program, or The Canadian Test of Basic Skills [CTBS]) to cover this range would pose a problem of comparability from test to test. (2) Unlike tests such as the CTBS, and informal reading inventories, the PM Benchmark Series is easily administered, resulting in enhanced inter-tester reliability. (3) The PM Benchmark Series is a criterion-referenced rather than a norm-referenced test; that is, it yields information about individual use of reading strategies and skills rather than information about the performance of a child in relation to other children in his/her age cohort. Because we are primarily interested in tracking changes in main aspects of reading proficiency and achievement, a criterion-referenced test is most appropriate to our needs. (4) The PM Benchmark Series is widely used in local schools. We feel that this familiarity will encourage confidence in our findings among the teachers to whom we plan on disseminating the results of our research, and will allow for more ready acceptance of new approaches in local classrooms. Wide local use suggests that the content is considered by school professionals to be appropriate to Canadian

settings. The data yielded by the PM Benchmark Kit can be represented on ordinal, integer and ratio scales.

Readers' Self-Perception Scale (Henck & Melnick, 1995)

Coming to view oneself as a reader is a critical passage in a child's successfully becoming a proficient reader (Stanovich, 1986). This scale includes 33 statements on a Likert-type scale, representing five aspects of reader self-efficacy (general perception, progress, observational comparison, social feedback, and physiological state) and yields norm-referenced scores on each scale, interpretable as high, average or low. Repeated administration yields evidence of possible changes in a boy's view of himself as a reader. This self-perception scale was used at six points over the 22-week intervention and took one half hour to administer. Two questions were added. One asked how much the student agreed that reading is a feminine activity (an activity suited more to girls than to boys). One asked how much the student agreed that reading is a masculine activity (an activity suited more to boys than to girls). These questions were added to the *Readers' Self-Perception Scale* (Henck & Melnick, 1995). Administration time was included within the half hour allotted for the administration.

Accounting for Other Independent Variables

We wished to control for a number of independent covariates that research has found to be related to early reading performance. These include phonological awareness, expressive (oral) vocabulary, and parental attitudes toward literacy and schooling. The following tests were administered once, before the intervention:

The Yopp-Singer Test of Phonological Awareness. Phonological awareness is the awareness of and ability to manipulate the sound segments of a language. Research suggests that phonological awareness and success in learning to read are strongly correlated. Sub-scales of phonological awareness include the ability to *rhyme*, that is, to discriminate rhymed words and produce them; to *segment*, or, break sentences and compound words into component words, to recognize syllables in words, and the ability to hear and produce individual sounds (phonemes) in words; to produce *sound isolation*, or to identify and produce the initial, final, and medial sounds of words; to *blend*, that is, the ability to blend root words into compound words, syllables into words, onsets and rhymes into words, and phonemes into words; to use *deletion*, in other words, the ability to delete root words from compound words, syllables from multi-syllabic words, and phonemes from words, and sound substitution, i.e. the ability to change a sound in a word to create a new word (e.g. bad to had). The Yopp-Singer is a screening test that identifies children with significant, basic deficits in phonological awareness, and that is quickly administered with little training, and allows us to statistically account for the impact of this condition on change in reading proficiency.

The Early Reading Attitude Survey

This instrument records a child's general attitude toward reading in the two areas of school reading and home reading. The test consists of 20 questions, ten each related to school and home reading. Responses are measured on a four- point Likert Scale in which attitudes ranging from strongly agree to strongly disagree are represented by Garfield the Cat figures each with the appropriate facial expression to suggest the attitude. Scores are

given in school, home, and full scale forms. As our definition of reading focuses on reading in school, the former score is of great value to our study. Children completed this inventory before onset of the intervention and again one month after its completion.

Expressive One-Word Picture Vocabulary Test

Research (Clay, 1986; Purcell-Gates, 1994) has established the importance of rich oral language, particularly a broad vocabulary, in successfully bridging to print literacy in school. The Expressive One-Word Picture Vocabulary Test (Revised) is a widely used, standardized, and normed instrument for gauging the extent of a child's receptive vocabulary, ability to use his vocabulary, and verbal intelligence. Basals and Ceilings are established as children are asked to identify drawn illustrations presented by the examiner. Test administration ranges from 7 to 15 minutes.

Family Background

These variables and the questions that explore them were adapted from the Program for International Student Assessment (Statistics Canada, 2002) and are rooted in reading research findings (Heath, 1983; Purcell-Gates, 1994; Teale, 1986). This questionnaire was administered to parents at the beginning of the 22-week intervention and took 20 minutes to complete. Some of the questions solicited information about oral language use in the home (Purcell-Gates, 1994).

Procedures

Families were approached for parental permission in October, followed by four initial visits of one-half hour duration which allowed the four student research assistants (RAs) to collect baseline data for all children. The children were then randomly selected

to work with either male or female research assistants for the duration of the intervention. Each week for 22 weeks, the RAs visited the children twice per week to conduct Paired Reading with the children. In all cases, the books used for the reading were selected based on research about books that hold high interest for boys (Worthy, Moorman & Turner, 1999). As the sessions progressed, boys requested books about specific topics (e.g. insects) or books from a specific series (e.g. Dav Pilky's Captain Underpants). These requests were used as guides in subsequent book purchasing. In each session, boys were provided with a number of books from which to choose, thus maximizing the likelihood that the book chosen would hold high interest.

Paired Reading is a reading practice approach developed by the Northern Alberta Reading Specialists' Council (1991) based on Topping's research (1987). Based on student control of many aspects of reading including choice of reading material, the process includes duet reading during which student and tutor read simultaneously, and solo reading when the student chooses to read independently. Best reading instructional practices are built into the program, thus avoiding the dangers of uninformed tutors propagating dysfunctional instruction and attitudes in a complex instructional setting. Program evaluation (Northern Alberta Reading Specialists' Council, 1991) suggests strong gains in word identification and text comprehension result from use of this approach. Research Assistants were trained in the use of this program before the start of the intervention. Although the children worked with the same sex of RA each week, the RAs alternated working with various children within their treatment group in order to control for individual effects of the RAs. In six of the twenty-two weeks, RAs attended

the school for one additional testing session. At these sessions, the PM Benchmark or the RSPS were administered in order to collect longitudinal data.

At the end of the project, all the books used in the research, approximately \$5000 of “boy-friendly” books were donated to the participating school. The children who participated in the project made the presentation to the school at the school awards assembly in June.

RESULTS

Given the exploratory nature of the research as well as the small sample size, analyses were restricted to two sets of bi-variate correlations, a series of *t*-tests, and an ANOVA. An initial pre-treatment set of correlations was conducted between demographic data and the dependent variables of reading attitude and performance and other variables related to reading performance in order to provide a descriptive context of the boys before they began the intervention. Nine significant pre-treatment correlations

Table 2. Pre-treatment Correlations

	2	3	4	5	6	7	8	9	10	11
1. Mother education	.056	.024	.381	-.618**	-.203	-.260	-.418	-.448	.114	.083
2. Father education		.142	-.023	-.007	.255	.149	.087	.230	-.201	.408
3. Family income			-.483	-.349	.175	.000	.184	.044	-.262	-.255
4. Attitude: reading				-.415	-.283	-.024	-.228	-.181	.217	-.272
5. Reader self-perception					.197	.110	.319	.253	-.151	.209
6. Phoneme awareness						.619**	.617**	.676**	.228	.345
7. LR/Upper sound							.831**	.836**	.403	.386
8. LR/Upper name								.917**	.249	.323
9. LR/Lower name									.438*	.473*
10. Expressive Vocabulary										.418
11. Instructional Read Level										

Note:

**Correlation is significant at the .01 level (2-tailed)

*Correlation is significant at the .05 level (2-tailed)

LR= Letter recognition

Table 3. Correlations between Magnitude of Change over the Course of Intervention

	1	2	3	4	5	6	7	8
1. Mother's Education		.056	.024	-.320	.567*	.460	.318	.545*
2. Father's Education			.142	.154	.313	.044	-.090	-.081
3. Family Income				-.243	.284	.352	.358	.265
4. Instructional Reading Level					.304	-.004	-.123	.084
5. Self-perception reading progress						.685**	.027	.148
6. Self-perception physiological state							.235	.248
7. Attitude toward reading (non-school)								.621**
8. Attitude toward reading (school)								

Note:

**Correlation is significant at the .01 level (2-tailed)

*Correlation is significant at the .05 level (2-tailed)

were noted between demographic and dependent variables (see Table 2).

A second, post-treatment set of correlations was conducted on aspects of change in the dependent variables. Table 3 presents correlations between the magnitude of

change in variables from the beginning to the end of the intervention. Analysis yielded four significant correlations.

Additional analyses were conducted on the data to determine whether the intervention had a significant effect on participants' reading performance, reading self-efficacy, or their attitudes toward reading.

First, *t*-tests were carried out to determine whether differences between times one and seven, and times one and four in results of administration of the PM Benchmark tests for instructional reading level were statistically significant at $p = .05$. Analyses were conducted on data gathered at these time points for two reasons. First, the time four sampling period occurred directly before the holiday break (after 10 weeks of intervention) when many children change schools. Analysis of this shorter duration of intervention allowed us to explore the effectiveness of a shorter (partial) intervention on inner-city children. Second, analysis of the data collected after the full 22 weeks allowed us to gauge the effects of the full intervention. Differences in boys' instructional reading levels were found for both durations of treatment. Instructional reading levels were found to be significantly different from time one ($M = 2.67, SD = 3.22$) to four ($M = 7.22, SD = 7.54$), ($t = -3.79, df = 17, p = .001$), and from time one ($M = 2.67, SD = 3.22$) to six ($M = 11.44, SD = 8.50$), ($t = -5.76, df = 17, p = .000$). Please see Figure 3 for graphic representation of the gains in instructional reading level (IRL) at each of the six testing points.

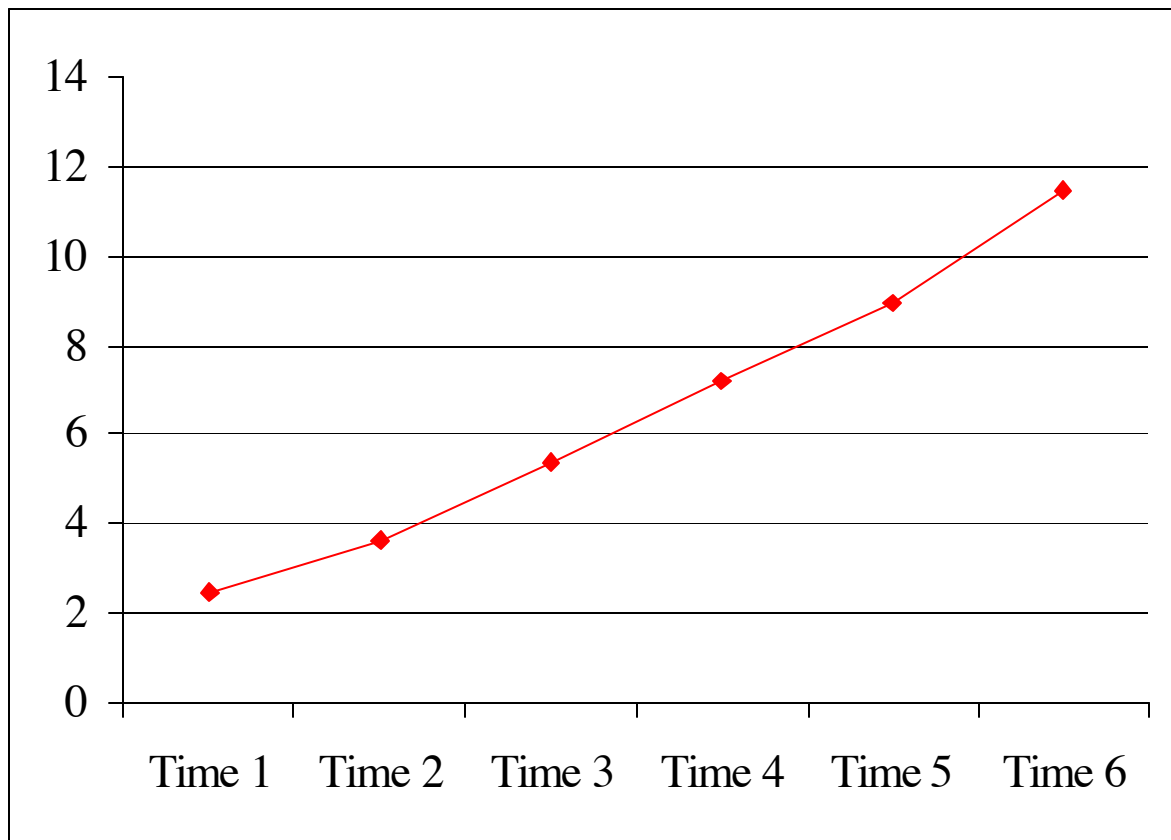
Instructional reading levels were then converted to grade levels using widely accepted and available text gradient conversion charts. Pre-treatment results ($M = 2.67$)

were subtracted from post-treatment results ($M = 11.44$) to gauge the magnitude and direction of change. All changes were positive. The mean gain was 8.77 PM Benchmark units, which converted to a mean grade gain of 1.18 school grades ($Range = .2$ to 4.2 grades; $SD = .10$) over the course of the 22-week intervention.

T-tests were likewise conducted for differences between times one (pre-treatment) and four (10 weeks) and between times one and six (22 weeks) on five aspects of the Reader Self-Perception Survey to determine whether these differences were statistically significant at $p = .05$. Significant differences were found in self-perception of physiological state between time one ($M = 34.53$, $SD = 5.64$) and four ($M = 37.42$, $SD = 1.98$), ($t = 2.75$, $df = 18$, $p = .01$), and in self-perception of progress between time one ($M = 39.32$, $SD = 5.97$) and four ($M = 42.89$, $SD = 3.40$), ($t = 2.45$, $df = 18$, $p = .03$). Significant differences in physiological state between time one ($M = 34.53$, $SD = 5.64$) and six ($M = 38.25$, $SD = 1.70$) were also found ($t = 2.42$, $df = 18$, $p = .03$). As indicated by examination of the means, all changes were in a positive direction.

Two additional *t*-tests were conducted to determine whether boys' attitudes toward reading at school and reading as recreation changed over the course of the intervention. Since we were interested in changes over time, the second administration of the Early Reading Attitude Survey occurred one month after the end of the 22-week intervention. *T*-tests indicated that no statistically significant changes occurred in the boys' attitudes toward reading at school or as a recreational activity (t 's = .08 and .86, respectively, p 's = .94 and .40, respectively).

Figure 3. Mean Change in Instructional Reading Level



Once *t*-tests had established the effectiveness of the intervention on boys' perceptions of themselves as readers and on their reading performance, one ANOVA was used to investigate whether there were statistically significant differences in the gains made by boys taught by male RAs ($n = 9$) compared to boys taught by female RAs ($n = 9$) over the 22-week intervention. A 2 (RA sex) X 6 (changes to the 5 RSPS scores and PM Benchmark score) ANOVA revealed no significant differences between children taught by male RAs and children taught by female RAs (F range = .01 to 2.7, p range = .12 to .95).

Our final planned analysis was to establish whether high gender-schematic boys who viewed reading as feminine would demonstrate less progress in their reading self-efficacy and performance. Because all boy participants viewed reading as a masculine activity (rating it as a five on a five-point scale of masculinity), or a gender-neutral activity (rating it with equal scores on both masculinity and femininity scales), it was not possible to conduct analyses of boys who understood reading as a feminine activity.

DISCUSSION

Analyses of the data yielded a number of interesting findings. Pre-treatment demographics revealed that the children participating in our study were fairly representative of the William Whyte area. Selected demographics showed incomes under \$20,000 are representative of 54.5% of the households in the William Whyte area, and comprised 61% of our sample families. Similarly, 55% of people over age 15 in the William Whyte area do not hold a high school diploma, compared with 53% of our sample mothers and 35% of our sample fathers.

Pre-treatment correlations also showed a number of significant relationships, some expected and some unexpected. The expected correlations showed significant positive relationships among children's recognition of letter names and sounds and their expressive vocabulary. The unexpected correlations showed a significant negative relationship between mothers' educational levels and children's initial general self-perceptions as readers. That is, more educated mothers had children who felt less positive about their own initial reading ability. It is possible that these children's mothers, due to their higher level of education, had exposed these boys to various types of texts. These

boys may have had more realistic views of their reading abilities as compared with adults.

Despite Rowan, Knobel, Bigum, and Lankshear's (2002) finding that socio-economic status is an important variable of consideration in boys' literacy, we found no significant pre-treatment correlations between family income and children's literacy performance or self-perceptions. Furthermore, post-treatment correlations between socio-economic status and magnitude of changes to boys' reading self-perceptions and their reading performance were also non-significant. This lack of findings may have been an artifact of the sample composition—that is, most boys in the sample were from low-income homes, and a lack of variability may have affected the correlation. In contrast, this finding is meaningful in the sense that significant changes are clearly possible with young boys living in poverty. While socio-economic status is certainly a consideration, it by no means prevents these young boys from making significant reading gains within a quality program.

Other significant post-intervention findings include positive relationships between mothers' education level and their children's gains in their self-perceptions of reading progress and gains in positive attitudes toward reading at school. These findings support our previous interpretation of the low general self-perceptions found in sons of more educated mothers. As the intervention progressed, these boys showed greater sense of their own progress as well as developing better attitudes toward reading at school. Perhaps, through exposure to their mothers' reading skills, these boys recognized at the study's onset that they had a long developmental path ahead of them if they were to read

as well as their mothers. Thus, as they began to feel a greater sense of accomplishment about their reading, they also developed more positive attitudes toward it. Although gains in boys' attitudes toward reading in school and reading at home were correlated, only gains in boys' attitudes toward reading at school were correlated with maternal education.

Another significant correlation was found between boys' gains in sense of reading progress and in their physiological state when reading. Progress refers to the child's sense that he is making gains in his reading ability, while physiological state refers to his affect (happiness, calmness, comfort, feelings of enjoyment). Thus, as boys began to perceive their own progress, they also perceived a sense of comfort as they read.

It is interesting to note that the boys showed statistically significant gains in these two areas of their reading self-perceptions and not in the other three areas (general perception, observational comparison, social feedback). Lack of change in the general perception scale is easily explained by the RSPS test construction. Whereas each of the other aspects of self-perception is measured by at least five statements, this variable has only one statement of measurement. Lack of findings on the other two scales support our original suspicions that social motivation (Guthrie & Wigfield, 1997) may not play the same role in reading for boys as it does for girls. Note that the sub-scales that showed the most differences are the sub-scales that are not linked to feedback from others. Although research has shown that this aspect of reading is an important motivator for girls (Guthrie & Wigfield, 1997; Gambell & Hunter, 2000), the current research suggests that this is not the case for boys.

The most important finding is that all children participating in the study showed significant gains in their reading performance. While the overall grade gain in reading performance was approximately 1.2 grades, some children gained the equivalent of four grades in their reading performance. More inspiring is the fact that these gains were made through only 22 hours of instruction with a student RA rather than a trained classroom teacher. The gains were made despite the many risk factors with which these children live, and they were made without an expensive program, special equipment, or complex training. Similar gains were made in children's perceptions of themselves as readers, specifically in the areas of their progress and their physiological state.

Gains in both performance and self-perceptions as readers are among important indicators of school success. Since competent reading is the strongest predictor of school success (Hoffert & Sandberg, 2001) and a view of oneself as a reader is a benchmark of becoming a reader (Adams, 1990), increases in these factors promote positive school outcomes which are linked to access to choices in adult life. Moreover, the characteristics of the current intervention would be easy to incorporate into other programs at schools, day cares or even in the home. Paired Reading is a relatively easy strategy to learn and requires no special materials aside from books in which boys indicate interest.

Allowing meaningful choice in reading materials is supported through our research. Au (1997; Au, Scheu, Kawakami, Herman, 1990) and Ryan and Stiller (1991), showed that choice is an important component of school success, as it is in Paired Reading. When one considers that many inner-city boys have access to books only through school and public libraries, the importance of these sources providing a wide

range of high quality books becomes paramount. Our own research program has certainly attracted great interest among librarians in Winnipeg and rural Manitoba. This interest may be a positive harbinger of changes in the types of books available to children in publicly accessible facilities. Given that only one-third of libraries currently carry the types of books many boys prefer, it is imperative that attention be given to ensuring the financial resources which would allow libraries to provide boys with reading materials of interest.

It is also important to note that the significant changes in children's reading performance and self-perceptions were present after just ten weeks of intervention and were even stronger after the full 22-week intervention. The gains made in the shorter duration have important implications for inner-city educational programming. Given that families in inner-city schools migrate between schools more frequently than do other families in Winnipeg, it is important to create programs that demonstrate results within a short time frame. Although continuity of a reading program over a longer duration showed greater positive results, the results over a shorter timeframe were still significant. Teachers, therefore, can begin a Paired Reading program in their schools confident that even short periods of inclusion are worthwhile, productive endeavors for young boys.

Another important finding is that the sex of the reading teacher had no effect on the reading performance or self-perception gains made by the boys. This finding lends support to the research (Carrington & Skelton, 2003; Froude, 2002; Martin, 2003; Shapiro in Hall, 1999) that suggests that recent media attention to the declining percentage of male teachers is overstated, at least in its effects on boys' reading. Our

finding supports the positive effects when teachers of either sex implement Paired Reading with texts the children find interesting. This finding bodes especially well for classrooms, day cares, and homes headed by women (42% of our sample homes), as it supports the positive effects they can have on young boys' reading.

Despite the gains made in their reading self-perceptions and their reading performance, the boys did not show significant growth in their positive attitudes toward academic or recreational reading. This lack of findings can be explained in several ways. First, the boys' initial attitudes toward academic reading ($M = 33.19$ of a possible 40) and recreational reading ($M = 33.76$ of a possible 40) were fairly positive before the treatment. The initial means on both five-point Likert scales indicate that their attitudes in both areas were better than neutral—in fact, they were positive. Although there was some room for an increase, the initial scores were fairly close to the ceiling before the intervention. Another possible confounding variable is the self-report nature of this instrument. Concerns about social desirability effects when using self-report measures with struggling readers may have manifested themselves in our study. The boys' desire to be thought of in a positive way may have affected the data at both collection points.

Second, although there was no significant change in boys' attitudes toward reading, this in itself may be good news. Wigfield et al. (1997) found that children's interest in reading declines most sharply from grade one to grade four. Although we found no significant increase in boys' attitudes towards reading, we also found no significant decrease. A lack of change—holding the status quo—may actually be

interpreted as a positive state when compared to the decreases experienced by many other boys.

The final planned comparison was pre-empted by the demographics of the sample. Based on our previous research (Katz & Sokal, 2003), we had expected that approximately 24% of our sample would view reading as a feminine activity and we, therefore, could compare the treatment effects on these boys with the effects on other boys. This composition was not the case; in fact, none of our boys viewed reading as a feminine activity. This finding contradicts Millard's (1997) claim that reading is a gender-marked activity. Gains shown in boys' reading self-perceptions and reading performance in our study reflect their views that reading is gender appropriate. In our earlier work, we showed that it was very difficult to change boys' categorization of reading as a feminine activity (Sokal & Katz, 2004). If the boys in the current study did not view reading as feminine, it follows that, at least in high gender schematic boys, they would be more likely to engage in the intervention and, therefore, potentially demonstrate progress.

While it is possible that all of the boys did, in fact, view reading as either masculine or gender neutral as indicated by their responses, there is also the potential that either the testing situation or the questions asked affected our ability to accurately measure feminine views of reading. It is possible that the social desirability of self-report measurement may have affected the boys' responses. That is, the boys had agreed to take part in a reading program and, therefore, they agreed that reading was an activity suited to boys. Alternatively, asking the questions overtly may have cued the boys' gender

schema and therefore affected their responses. Gender development is a complex phenomenon, and measurement difficulties have been a constant challenge that is commonly mentioned in research reports. Our future studies will avoid these possible confounds by using a Q-Sort system where boys will be asked to sort pictures of activities (including reading) into piles for boys, girls, or both. In this way, reading will be presented as one of many activities and its placement can be viewed in the context of the placement of other stereotypically masculine, feminine, or gender-neutral activities.

Despite our important findings, these results should be viewed with caution. Given that this research is an exploratory study with a small sample size, the results should be used as cues to the direction of future, larger studies. One such study is currently underway where many of the factors of the current study will be replicated with a sample of 180 inner-city boys. Notwithstanding this limitation, the current research was conducted using robust yet simple analyses in accordance with the small sample size. The main findings support the claim that the sex of the reading teacher has no effect on inner-city boys' reading performance or self-perceptions as readers when Paired Reading is implemented using texts of high interest to boys. Furthermore, the positive effects of this type of intervention are evident in both 10- week and 22- week interventions. Together, these findings suggest that this low-cost, easily implemented program may be effective in supporting the reading needs of young, inner-city boys.

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