2009

Gender based strategies for increased student achievement

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Abstract

This paper will present information based on various instructional strategies used in the single gender classrooms. These strategies are researched based, and have been know to help support gender specific classrooms. Chapter two will discuss the history of traditional classroom setting and the introduction of the single gender learning classroom. Chapter three will discuss the results of the current research and findings of experts in the study of gender classrooms and the affect such classrooms have on boys. It will also compare the advantages and disadvantages of gender classrooms for boys. Chapter four is an analysis of the findings presenting the most effective instructional strategies. Chapter five will discuss the application of the previous chapters. It will explain how these instruction strategies will be integrated into best teaching practices for increased student achievement for young males.

Gender Based Strategies

for Increased Student Achievement

A Research Paper Presented to

Department of Educational Psychology and Foundations

Submitted

In Partial Fulfillment

Of the Requirements for the Degree

Masters of Arts in Education

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University of Northern Iowa

August, 2009

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This Research Paper by : Mary Louise Bryant - Wilder

Entitled : Gender Based Strategies for Increased Student Achievement

has been approved as meeting the research paper requirements for the degree of

Master of Arts in Education : Educational Psychology : Professional Development for Teachers

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8-2009

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Introduction

Purpose

Engaging boys and girls in meaningful, active, reading is a challenge for parents and teachers. The issue of gender equality is a relative recent concern in the field of education today. Title IX of the Education Amendment Act of 1972 prohibited sex discrimination in Federally-funded education program and activities. Although the legistration has successfully addressed blatant acts of gender discrimination, only limited progress has been made in eliminating the repressive attitudes that lead to gender bias.

Gender bias, defined as "the underlying network of assumptions and beliefs held by a person that males and females differ in systematic ways other than physically," is pervasive in American education (Streitmatter, 1994. P. 2.) Teachers unwittingly perpetuate gender bias when they refuse to actively participate in achieving gender equality as a goal in their classrooms.

According to Michael W. smith and Jeffery D. Wilhelm in *Reading Don't Fix No Chevys: Literacy in the Lives of Young Men* (Heinemann, 2002), research on gender and literacy provides some interesting insights:

- Boys take longer to read than girls do.
- Boys read less than girls read.

- Girls tend to comprehend narrative text and mostly expository text significantly better than boys do.
- Boys value reading as an activity less than girls do.

Jon Scieszka, believes that boys are slower to develop than girls biologically and therefore often have early struggles with reading and writing skills. He also states that the male way of learning, which tends to be action oriented and competitive, work against boys in many classrooms. Therefore the question is, why goes this disparity of males lagging behind females in reading literacy exist? The Dr. Walter Cunningham School for Excellence has five gender classrooms. They have two girl specific gender classrooms, at grades second and third; two boy specific gender classrooms at second and third; and one combination classroom of fourth and fifth grade boys. Each of these grade levels also provide co-educational classrooms as alternative settings. They are working to close this type of disparity.

Statement of the Problem

"Do not train boys to learning by force and harshness, but lead them by what amuses them, so that they may better discover the bent of their minds." (Plato).

It is important for educators to look at unique problems associated with gender so that we can promote learning that helps all of our students to evolve into productive world citizens. The NAEP reveals that the gap observed between reading scores of fourth grade males and

females in previous years continue to be significant and larger in 2000 than in 1998. "Female students outperformed male students by 10 points in 2000, regardless of whether accommodations were permitted." (Donahue, Figgegan, Lutkus, Allen, & Campbell, 2001, p.70).

This gender gap in literacy is equivalent to about one and a half years of school (Gurian, 1998). In a 1988 IEA study involving 32 nations, girls achieved higher total reading scores in all literacy areas (Smith & Wilhelm, 2002). As alarming as these statistics are, as literacy educators we can improve the situation for the boys we are entrusted to teach. We need to reflect on our practices and challenge ourselves to question whether we are sensitive to the needs of our boys. We might seek gender based strategies and other innovative possibilities when working with our boys. We must include their individual, social, and emotional needs, as well as their interest too.

Research Question

The ability to read well is the most important skill children can acquire. Reading ability and the desire to read varies significantly among groups of children. But, there are some children who do not read well or like to read. There are many reasons why, some related to biological and cognitive factors. Other impediments to reading achievement include the use of ineffective teaching strategies and materials; lack of sufficient and enticing reading resources in schools, community, and homes; and family habits that do not include reading.

My concern and question as an educator then becomes, does gender based strategies result in increased student achievement ?

Significance of the Problem

It is not a myth that girls read better than boys. Gates's (1961) landmark study of 13,000 U.S. elementary students produced the first hard evidence to support the idea of female reading superiority. Gates found that girls significantly outscored boys on tests of reading comprehension and vocabulary. Boys in elementary school through high school continue

to score significantly lower than girls on standardized measures of reading achievement (Grigg, Daane, Jin & Campbell, 2003) and writing achievement (Applebee, Langer & Mullis, 1990; Fletcher, 2006).

Today, we know that boys of all ages fail in reading more often than girls. This failure dominates the number of boys in corrective and remedial reading programs. Furthermore, boys are far more likely to be retained (Jimerson, 2001). By first grade, girls are already ahead of boys in reading and they continue to make greater progress in reading throughout the elementary years National Center for Education Statistics [NCES], 2000). When a boy fails in the early elementary grades, it is unlikely he will ever catch up (Gurian & Ballew, 2003). There are implications that boys are making some success, but in many classroom across the

United States many boys are not faring well, as the following statistics reveal:

- In elementary school, boys receive more Ds and Fs than girls ("Boys and Books," 2006).
- Between the ages of 5 and 12, boys are 60% more likely to have been retained ("Boys and Books,"2006).
- Boys are referred to special education 4 to 1 over girls (NCES, 2000).
- About 2% to 5% of American children between the ages of 6 and 16 are diagnosed with attention-deficit hyperactivity disorder (ADHD), and of these, 80% are boy (Rothenberger & Banachewski, 2004).

Of the estimated 500, 00 to 1,000,000 students who annually drop out of U.S. schools, more than 55% are boys (NCES, 2000). These statistics reveal the urgency in saving the educational, social and emotional lives of boys. Kipnis (1999) notes that failure in reading tops the list of self-esteem-busting events in the lives of boys.

Definition of Terms

Attention-Deficit Hyperactivity Disorder (ADHD) - ADHD is a common behavioral disorder that affects an estimated 8% to 10% of school age children. Boys are about three times more likely than girls to be diagnosed with it.

Biological - Pertaining to the science of life.

Cognitive - The mental processes by which knowledge is apprehended.

Estrogen – A group of hormones, referred to as the female sex hormone.

fMRI – Functional Magnetic Resonance Imaging

Gender - Gender is the social dimension of being male or female. Gender identity is the sense of being male or female, which most children acquire by the age of three. Social learning theory and gender are intertwined. Most children grow up learning that as a male you do certain things and females do other things. There is a distinct line between the two groups. To be socially connected, one must know whom he/she is inside. They must realize that the most important thing in life is how they perceive themselves and also how they perceive others.

Gender Gap - The gender gap refers to the statistical differences in behavior or attitudes between men and women or boys and girls.

Literacy - The traditional definition of literacy is considered to be the ability to read, write, and the ability to use language to read, writes, listen, and speak. In modern context, the word

refers to reading and writing at a level adequate for communication, or at a level that lets one understand and communicate ideas in a literate society, so as to take part in that society.

NCES - The National Center for Education Statistics (NCES) is the primary federal entity for collecting and analyzing data related to education.

NAEP - The National Assessment of Educational Progress (NAEP) is the only nationally

representative and continuing assessment of what America's students know and can do in various subject areas. Assessments are conducted periodically in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history. Its assessments are administered uniformly using the same sets of test booklets across the nation, NAEP results serve as a common metric for all states and selected urban districts. The assessment stays essentially the same from year to year, with only carefully documented changes. These permits NAEP to provide a clear picture of student academic progress over time.

Oxytocin - Referred to as the "tend and befriend" hormone.

Self- esteem - Self esteem is your opinion of yourself. It means how you value yourself. Self esteem increased your confidence. If you have confidence in yourself, you will respect yourself and then you can respect others, improve your relationships and become happier.

Serotonin - A neurotransmitter know as the "feel good" chemical.

Testosterone - The male sex and aggression hormone.

Organization

This paper will present information based on various instructional strategies used in the single gender classrooms. These strategies are researched based, and have been know to help support gender specific classrooms. Chapter two will discuss the history of traditional

classroom setting and the introduction of the single gender learning classroom. Chapter three will discuss the results of the current research and findings of experts in the study of gender classrooms and the affect such classrooms have on boys. It will also compare the advantages and disadvantages of gender classrooms for boys. Chapter four is an analysis of the findings presenting the most effective instructional strategies. Chapter five will discuss the application of the previous chapters. It will explain how these instruction strategies will be integrated into best teaching practices for increased student achievement for young males.

Chapter 2

Introduction

Not so very long ago single-sex classes in coeducational schools were considered to be an appropriate educative aspect of K – 12 learning environments. As late as the 1960s or even into the 1970s in some parts of the United States, girls and boys were routinely separated for

some of their classes on daily basis. The bases for single-sex classes varied. In some cases, students were placed in separate classes with different but purportedly parallel subject matters. Back then, girls went to home economics classes while boys went to "shop" or agricultural classes. Girls and boys were sent to separate classes, even when the curriculum or content matter was the same. Physical education and sex education classes were examples of

these. Finally some single-sex classes were established to exclude girls from certain occupations or activities based on gender stereotypes of what were and were not appropriate for females. Single-sex classes with these types of aims and programs are no longer prevalent in today's K-12 mixed sex- schools. Laws such as Title IX aimed at preventing sex discrimination in education, as well changing norms regarding women's and men's roles. Both sexes are to have access to the same educational experiences in schools.

Chapter two will discuss the biological, cognitive and emotional differences between males and females. Do boys and girls learn differently? Reading ability and the desire to read well vary significantly between boys and girls. A gap between boys and girls in overall academic achievement and reading skills grows more obvious every year.

Harvard researcher Dan Kindlon and school psychologist Michael Thompson have written in *Raising Cain:*" From kindergarten through sixth grade, a boy spends more than a thousand hours a year in school...there the average boy faces a special struggle to meet the developmental and academic expectations of an elementary school curriculum. Some boys are ahead of the others on that developmental curve, and some girls lag behind, but when we compare the average boy with the average girl, the average boy is developmentally disadvantaged in the early school environment."

The research indicate concerns for boys in the educational settings, e.g., boys don't see

education as positive thing, some don't like to read, some don't read very well, and a growing percentage of boys is failing in school, particularly in literacy. Some boys are being labeled as behavior problems, as a result, they are being misdiagnosed with attention deficit hyperactivity disorder (ADHD). With modern technology, brain imagery confirms that there are sex differences in the way boys and girls learn. With these types of obstacles for boys, one stills wonders if there are gender based strategies that would result in increased achievement for male students.

Biological Differences

What are these differences in the way boys and girls learn? We first have to look at the brain. Researchers are still discovering new areas of difference between the male and female brain, a number of differences have been identified that have implications as to how boys and girls learn. Over the past few decades, technology has help researchers focus on specific areas of structural differences between both genders.

Researchers are beginning to understand the chemistry and biology of brain development, and with new imaging techniques they are beginning to get a clearer understanding of the brain's smallest parts - neutrons. They are able to see the structures neutrons form, track the physical and functional changes of the structures, and observe how these structures are used when a task, like reading, is performed. Researcher from

neuroscience, genetics, biology, and other fields are working together to reveal many new and exciting findings that we can use when it comes to literacy and language (James, 2007).

Science now tells us that hormonal influences during gestation may be the reason for boys' and girls' vary cognitive, social, emotional, and behavioral styles (Brizendine, 2006). This may be the reason we see girls and boys playing differently, learning differently, and having different language and literacy needs because the brain structure and body chemistry.

There are differences in the types and amounts of hormones and neurotransmitters that affects how boys and girls learn and interact. *Testosterone* is the male aggression hormone, responsible for the male system, competitiveness, self-assertion and self-reliance throughout life. It "rises" when males win and "lowers". Female testosterone always lower than males remains basically constant. This means – healthy competition in the classroom will help motivate boys. Research has shown boys tend to perform better on test if testosterone levels are high. Using games that provide students with a chance to be successful can be very productive and girls gain self-confidence.

Estrogen is a group of hormones, identified as the female sex hormone. Levels are present in both sexes, but are higher in females. For girls who are overweight, puberty may come earlier, girls may be subject to mood swings and more aggressive behavior.

Serotonin is a neurotransmitter known as the "feel good" chemical. Girls tend to have

30% more than boys, creating a calmer demeanor in them. With less serotonin, boys have a harder time "settling down" in a conflict.

Oxytocin, the "tend and befriend" hormone, is related to social recognition and bonding. Researcher have shown that oxytocin is involved in the formation of trust between people, and females have significantly higher levels in their systems than males throughout life. This means - girls will be motivated to establish and maintain relationships with peers and teachers,

boys are less driven to establish these.

Electroencephalograms (EEG's), another scientific insight, conducted on 3- and 4- year olds show a dramatic upsurge of connectivity in language areas. Young children can make rapid advances in acquiring new words, understanding syntax, and constructing narratives because of neutrons in Broca's area, a brain structure responsible for expressive language, and Wernicke's area, an area responsible for understanding speech, increased in both connectivity and activity. Boys use fewer words to get their messages across and, neuroscience is providing some new insight as to why. Functional magnetic resonance imaging (fMRI) scans show girls have 11% more neutrons in brain areas devoted to language than boys do (Brizendine, 2006; Harasty, Double, Halliday, Kril, & McRitchie, 1997). Sax (2007) has noted that the language areas in the brains of many 5 year old boys look like language areas of the

average 3 ½ year old girl.

Another difference between boys and girls comes from myelination. Myelin is a fatty coating wrapped around the axons of the neutrons that allow neutrons to transmit information quicker and with less interference. Reading happens when groups of brain structures work in concert, and research has found that critical cortical regions – areas responsible for integrating and performing tasks with automaticity – get myelinated more slowly in boys than girls. Because of this girls can produce more words beginning with certain letters and do it quicker, than boys (Geschwind, 1965). If the brains of boys develop differently, expecting some young boys to keep up with girls may not be realistic. This idea lends itself to the idea of the importance of differentiated instruction.

There is more evidence of language variation between boys and girls when it comes to hemispheric differences, girls as young as 3 and 6 months old have a higher response to stimuli in their left hemisphere – language is processed – than boys, whose right hemisphere shows greater activity (Shucard & Shucard, 1990). Boys left hemisphere develops a bit slower and this is why girls tend to speak about one month earlier than boys, speak more clearer, acquire words faster, form longer sentences, and have vocabularies two times larger than boys (Maccoby, 1998).

According to Gurian (2008) hormones, processing, and structural elements exist throughout the brain, especially the left and right hemispheres. The following table shows this:

Left - hemisphere preference is more common in girls. The left brain,

- Is connected to the right side of the body
- Processes information sequentially and analytically
- Generates spoken language
- Recognizes words and numbers, when numbers are spoken as words
- Responds more sensually to external stimuli
- Constructs memories (including hyperbolic memories)
- Does arithmetic functions
- Seeks explanations for occurrence of events

Right - hemisphere preference is more common in boys. The right brain

- Is connected to the left side of the body
- Processes information abstractly and holistically
- Interprets language non-verbally
- Recognizes places, faces, objects and ,music
- Fantasizes abstractions (suck as science fiction and video game scenarios)
- Is less detailed and more concrete in recall
- Does relational and mathematical functions
- Organizes occurrences into spatial patterns

Most educators will admit that schools are designed to be more left-hemisphere friendly. They rely primarily on verbal processing, limit access to free space and movement, and require lots of multitasking. These are the preferences of girls, no wonder boys are "bio-chemically "

prone to "make a fuss" to an environment that doesn't fit their right-hemisphere learning style.

From the beginning, girls tend to outperform boys on test of reading, writing, spelling, and verbal ability. Girls' early facility with language and reading comes from the way their brains develop, process, and use language. This has implications for boys, if they see girls outperforming them on verbal task, they may not believe they are not good at this task (Smith & Wilhelm, 2002).This way of thinking, combined with uninteresting and difficult learning task may cause boys to avoid them, thus as a result, fall behind. This leads to other problems, such as boys being placed in special education and high retention rates. In 1999, 8.3% of boys ages 5 - 12 were held back at least one grade level, compared with 5.2% of girls (NCES, 2000). Stipek (2002) reveals that when boys as young as 5 years old fail at literacy, they are very aware of their shortcomings and conscious of their own lower status among their peers. Soon these boys give up on themselves.

They feel unsuccessful; will begin to display avoidance behaviors by acting out, resist reading and writing, give up and miss out on a world of personal and educational opportunities.

Functioning eyes and ears help boys make sense of print, and if eyes and ears are not working properly boys may have problems early on. Boys who have vision problems will have difficulty clearly and accurately seeing print on a page. Discriminating one letter from

another, seeing punctuation marks, or tracking print left-to-right will be difficult and will get worse in upper grades, as print gets smaller, and denser on a page, and words gets longer (Tompkins & McGee, 1986). If a boy lacks the ability to identify visual stimuli quickly, he will not make automatic connections between printed words and their meanings (Stanovich, 2000).

It is important to recognize that even, without vision difficulties, the eyes of boys register information differently than the eyes of girls. Sax (2005) states that variations in the thickness and the layers of the retina - part of the eye composed of rods and cones - boys and girls see differently. The female retina is thinner than the males, which registers bright colors. Where as the male retina produce colors like black, green, blue and silver (Alexander, 2003).

The eyes of boys and girls also are wired to perceive location and movement of objects differently (Hovath & Wikler, 1999). Truman (1999) shows that being adept at perceiving things in the environment cause girls to draw more objects or nouns. In contrast, the eyes of boy s are wired to detect location, direction, and speed so boys are more likely to draw more active pictures or verbs. Incorporating soft objects to toss and movement into literacy can enhance the literacy skills of boys, from learning letter sounds to developing fluency.

The research of Gopnik, Meltzoff, and Kuhl (2001) reveals that from birth through about 6 months of age babies are "citizens of the world "(p.108). They are born with the

ability to hear all the phonemes spoken in the world, and they recognize when spoken sounds change most of the time, no matter what language is used. According to Kuhl et al. (2006) children are natural linguist; they want to communicate with others and are interested in the things and people around them.

These auditory abilities should sound familiar to educators because these abilities influence phonological awareness, which is a literacy skill that develops during the preschool and early elementary years (Goswami, 1999). Hearing disorders that effect the acquisition of phonological awareness disrupts a foundational literacy skill and could affect reading over one's lifetime. Teachers of boys who live in poverty must be aware of this, because they often have untreated ear infections and do not get early screenings due to lack of health care (Brooks – Gunn, Duncan, & Aber, 1997). From birth girls hear better than boys, and girls' hearing continues to be more acute as they grow. Boys do not hear in the same way as girls, either. Boys hearing is more attuned to low, loud sounds as opposed to high – pitched, soft sounds (Cone –Wesson & Ramirez, 1997; Sininger, Cone – Wesson & Abdala, 1998). It takes boys a fraction of a second longer to hear sounds. So when educators ask questions, boys need a little more processing or wait time (McFadden, 1998).

Young boys are proud of their motor accomplishments and enjoy being physical.

Combining movement and the learning of academic skills can provide the bodily response and energy release that many young boys need. However, despite current knowledge of child development that maintains that 5-year olds learn from active and concrete experiences, in many classrooms children are given fewer opportunities to learn in a hands-on, active way (Sax, 2007).

Cognitive Differences

Boys become better thinkers as their brains develop and change. Myelination, neutral growth, connections, and hormones all affect a growing mind and brain as well as the physical, emotional and social realms of one's world. Piaget and Inhelder (2000) describe the thinking of young children as egocentric because of their inability to take other's viewpoint into consideration. They believe everyone thinks like them and that the world revolves around them

too. Boys learn from the adults in their world, therefore it is important to show boys how to set goals and to monitor them. As adults in the lives of boys, we must recognize the cognitive abilities of young boys and teach them developmentally appropriate ways, set reasonable, achievable, goals. Providing them with hands-on experiences, presenting puzzles, brain-teasers, and asking open ended questions and listening to a varying perspective encourages boy's novice thinking to move towards more open, reasoned, and logical thought. When using

literacy activities, using stories where male characters puzzle over important issues, can also help boys to advance their thinking.

Emotional Differences

Emotions are the psychological feelings we have in response to events that are relevant to our needs (Campos, Frankel, & Camras, 2004). Emotions drive the thinking and learning to regulate them develops over time as a boy interacts with others. Simple emotions like fear and anger in infancy and self-conscious emotions, such as shame, embarrassment, and pride (Lewis, 1993), emerge in early childhood.

Emotional development varies between boys and girls. Boys in preschool show more anger than girls, and boys in the early elementary grades put on confident airs even when they feel self-doubt (Eisenberg, 1996). As boys develop, they try to cope with their feelings and learn strategies by observing others (Campos et al., 2004; Hoffman, 1991).

Summary

Researchers are still discovering new areas in the differences in the male and female brains, with the use of technology. These differences effect the biological, cognitive, and the emotional development of how males and females learn. With such differences, there is a need for specific instructional strategies within the single-gender classroom.

Dr. Leonard Sax, whose book "Why Gender Matters", is a guide to male and female brain differences, emphasizes that men and women can excel at any subject. According to Dr. Sax, they just have to be taught in different ways.

Chapter 3

Introduction

Chapter three will focus on the research and expert findings of best practices in creating instructional strategies for educators to use in making classrooms more conducive to boys' needs. Separating boys from girls has long been the staple of private and parochial education. The idea of having single-gender classrooms is gaining popularity with parents in American public schools. Many parents are expressing their desire to have more choice in the education of their children.

This chapter will share insights of the advocates for single-sex classrooms and those whom opposed this ideology. The importance of parent support will be shared, as it enhances the learning expectations of classroom environment.

Innovations

School district, administrators and teachers sometimes have the joy of creating positive innovations within their schools. Single-sex classrooms creates opportunities that

don't exist in the coed classrooms.

The Ultimate Elementary Classroom for Both Boys and Girls:

For Boys:

- Support teacher training in male-brain development and the male learning pace, which is often different than the females.
- Use boys-only groups when needed.
- Encourage close bonding between teacher and student.
- Enjoy and navigate normal Huck Finn male energy toward academic focus and good character.
- Pay attention to more sensitive, less competitive or aggressive males in the classroom.
- Advocate for boys' issues in the school and community.
- Allow physical movement, as well as engaging in physical activity; from hugs and touch when appropriate to getting down and dirty at recess once in a while.
- Be sure there are men in the boys' educational life, especially from fifth grade onward.
- Before third grade, never allow chairs to be kept in a row and always make available as much space as possible.
- Offer lots of storytelling and myth making in the classroom to help the male brain develop its imaginative and verbal skills through story making.
- Give boys lots of things to touch and otherwise sense, especially when reading and writing are being taught.

For Girls:

- Train teachers on how the female brain learns.
- Teach early elementary math by manipulatives and objects; teach higher levels of math not just on the blackboard, which requires abstraction and favors male brains, but also through graphs, charts, and written material on paper.
- Provide concrete manipulatives to touch and otherwise sense, especially when science is being taught.

- Tell stories and use images of girls and women who are competent, and who model varieties of mature female behavior
- Offer girl-only groups when useful.
- Give special access to technology, computers, and the Internet and a little extra encouragement to use technology; master is, and lead with it (beginning around third grade, keeping in mind that intense computer use before about age nine may be hazardous to brain development).
- Match math and science lessons with journal writing expression so that girls can use their strengths to help them process math calculations and science data.
- Encourage healthy competitive learning as well so that girls do not end up disadvantaged compared to boys (who may naturally seek competitive activities in other parts of life).
- Provide healthy and constant feedback, so that girls get encouragement and have high expectations from teachers (Gurian, 2001, 196).

Benefits of Single -sex classrooms

Single-sex classrooms seem to offer impressive information regarding the special needs of an all boys classroom verses an all girls classroom. Boys are less distracted. They are less focuses on girls and impressing them, therefore boys act out less often and can concentrate on academics. Boys can practice social skills more comfortably. They can participate more often and more freely. Girls have higher self-esteem. In a single-gender classroom, girls are less obsessed by clothes, hair, make-up, and popularity. They can concentrate more on academics. Girls ask more questions; do more hands-on work with equipment. They take on more leadership roles, contribute to discourse more, and have increased confidence in their academic ability.

Evidence

The single-sex classroom creates opportunities that don't exist in the coed classroom. Teachers are provided with professional development from National Association For Single Sex Public Education (NASSPE) for a gender-specific classroom. With this training on best practices teachers can employ strategies that support an all boys or all girls classroom.

Several studies have been performed from around the world regarding the results of the single-sex classrooms. Researchers at Stetson University in Florida completed a three-year pilot project comparing single-sex classrooms with coed classrooms at Woodward Avenue Elementary School. Students in the 4th grade had all the same relevant parameters, that is, class size, curriculum, demographics, teachers had same training, etc. The results of their testing resulted in;

- boys in the coed class : scored 37% proficient
- girls in coed class : scored 59% proficient
- girls in the single-sex class : scored 75% proficient
- boys in the single-sex class : scored 86% proficient

Researchers at Cambridge University released results of a four- year study of gender differences in education, in 2005. They investigated hundreds of different schools, representing a variety of socioeconomic and ethnic backgrounds, seeking strategies which improved performance of both boys and girls while narrowing the gender gap between girls

and boys. The result of this research was remarkably effective at boosting boys' performance in English and foreign languages. Marlene Hamilton conducted a classic study in Jamaica, where students in single-sex schools outperformed students in coed schools in almost every subject.

The Foundation study in England found that single-sex schools gave greater academic advantages to boys than girls (Gordon, 2000). In 2000, Benjamin Wright, principal of Thurgood Marshall Elementary school in Seattle, Washington, transformed his coed classrooms to single-sex classrooms. The result of this action led to improved discipline, scores on state test jumped from 10% to 73% for boys, reading from 20% to 66%, and in writing 20% to 53%.

The benefits of single-sex schools are not only academic. Research has shown that single-sex education has broaden students' horizons, to allow them to feel free to explore their own strengths and interest, not constrained by stereotypes (Stables, 1990).

Just as there are advantages for having single-sex classrooms, there is also opposition to this ideology. Some academics feel the world in which we live is an integrated one, and females need placement in integrated classrooms, with the same learning environment as male and perform well, this validates their efforts. Keeping boys and girls together in the classroom increases the diversity to which they are exposed.

Professor Alan Smithers, one of Britain's leading education experts, reported that there are no overriding advantages for single-sex schools on educational grounds. He says, "studies all over the world have failed to detect any major differences". His study shows those high ability girls at co-educational schools are just as likely to take physics A-level as those at single-sex schools. Professor Smithers concluded that, despite there being no advantage to single-sex schools, there appears to be no disadvantage either.

Simon Baron-Cohen, one of Britain's leading experts on differences between genders, doesn't think single-sex classrooms are the answer. When children are separated, they will not be mixing and learning about each other. He states that boys and girls don't neatly fit into two groups. Boys tend to be "systemisers" and girls "empathisers", there are plenty of empathetic boys.

Summary

The theory behind single-sex schooling is that there are differences between boys and girls that must be taken in account. There is no difference in what boys and girls can learn, but in how and when they learn best. Some argue that the sexes are hardwired differently and therefore learn differently. Others claim that boys and girls are not so different, but their social experiences are distinct, and we should separate classes, according to sex.

How single-gender classes are implemented is critical to its success or failure. Single-gender settings are not, by themselves, going to help boys and girls. The innovations school districts, teachers and the decisions made by parents to have a choice in selecting their sons or daughters education, will greatly effect education, in single-gender or coed classrooms. At the Dr. Walter Cunningham School of Excellence, parents are provided with information regarding gender classrooms and have the opportunity speak with these teachers, before making the decision to place their child in a single-gender or coed classroom. The professional development, teaching methods and classroom environment must be adapted to meet the needs of all children, regardless of the setting.

Chapter 4

Introduction

Chapter four will discuss instructional strategies that research states have been proven beneficial with gender classrooms. These strategies have been selected for the specific needs of each gender. Boys need to have more physical movement, direct expectations, louder noise levels, shoulder-to-shoulder activities, and healthy competition, while girls work well in cooperative learning environments, socialize more, need more manipulatives, are more sensitive

to their environment. Research has demonstrated the need for key elements within a gender classroom, these elements will be discussed further in chapter four

Researched -based Instructional Strategies

Movement is extremely important in helping boys and girls learn, but are especially urgent for many boys within a classroom. Their bodies and brains are not wired to sit still as much as we might wish. There is brain-based research that stated grades and test scores will improve and discipline referrals will decrease when physical activity is integrated into the educational day. Providing movement opportunities in the classroom is critical for proper brain development and preparing the brain for learning. Movement increases blood flow and oxygen to the brain. In addition, a number of neurotransmitters are released that enhance learning. Movement can be used to energize, relax, focus attention, and facilitate transitions.

Classrooms that are friendly to both boys and girls will use words and other spatial-visual aids for the communication of skills, concepts, and understanding. The primary method for delivering new knowledge is linguistic, but when paired with nonlinguistic modes, we are practicing best practices for all talents. Brain-based research shows us that many students- especially the visual-spatial boys- are better able to think about and recall knowledge when it is presented in both ways. Students can use their visual-spatial strengths to scaffold them to success in verbal task, such as reading and writing. Research shows that a strong positive

graphic organizers, pictures, symbols, physical models and, visualization.

Another strategy that exist is to empower the learner by allowing them to have choices and control in the learning process. This approach is based in connecting brain research with long-term studies on what builds reading success in students. Different research bases have come together to show that when learners feel they are an important part of the process, their interest, accountability, and retention dramatically increase. The findings of Jeff Wilhelm and Michael Smith in their book, *Reading Don't Fix Chevys*, showed that male students

considered to be problems or reluctant readers in the classroom actually had very rich literate lives outside of school. They called it a "disconnect", between what boys are forced to read in school and what they enjoy reading at home. Both men went on to report they had found two similarities which are important for educators, and parents to understand, and that should inform our teaching with young men. The first, is the importance of Engagement and Flow;

- Which is to provide a clear purpose and immediate feedback. Boys want to know why they are reading and writing, and how what they learned would be used.
- An appropriate challenge and assistance in meeting it. The boys wanted challenging content and tasks that changed how they thought, or helped them to do things better.

- Functionality and a developing sense of competence. The boys wanted to use what they had read or written to clearly demonstrate their growing competence. They wanted to focus on immediate experience. Literacy needs to be personally relevant and socially significant "here and now."
- The importance of the social. The boys wanted to work together to share their learning.

Students need social interaction within the school setting. The experience of social interaction reenergizes the brain, enhances focus, and will include some kinds of movement opportunities. For the brains of elementary children, being social means getting more active, moving around the classroom, interacting with others, and having more fun. This engagement with their world is referred to as *dialogic interactions*. In their book *Reading Don't fix Chevys,* Smith and Wilhelm reported that being social was very important to boys. "The boys talked about the social connections in a variety of ways: how friends and family affect literate interest; the importance of relationships; their enjoyment of working in groups; and the improvement of relationships they cultivate with textual characters, authors, or directors".

The relationship between the teacher and his/ her students are another contributing strategy to consider when working with all students. Girls are often more likely than boys to

"learn through pleasing the teacher". Boys generally feel left "out of it" when it comes to Learning that is disconnected from reality. The human bonding neurotransmitter, Oxytocin, is found in higher quantities in females than in males. Oxytocin is the primary reason why females are more willing to comply to please others.

The second, is teaching and learning as relational; The boys were most engaged and most willing to learn when they were involved in positive relationships with their teachers.

In the article, *Priority Male, If we boys to love books, it's important to recognize what they want,* Jones states that researchers have been studying the problem of boys and poor literacy for some time. What they have learned is that boys take longer to read than girls; they read less and are more apt to describe themselves as nonreaders; boys tend to read more informational and nonfiction text. Boys like to read about things of interest to them, hobbies, sports, or things they might want to do. Books with the theme of science fiction, humor and fantasy are especially entertaining to boys.

The interest of girls in reading include a variety of series, teen magazines, and an innovative program called *Read n 'Rap* encourages girls to integrate reading with technology. The girls read and discuss novels via email. The novels are selected by the teachers and all have strong female main characters and are at the appropriate age, and interest level for the girls. Other popular topics for girls include books about animals, family, poems, and

holidays.

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At the Dr. Walter Cunningham School of Excellence, Annette Duncan; boys' gender teacher, and Amy Schmitdt; girls' gender teacher concur that students achieve their highest ability when careful consideration is given to the following (Duncan & Schmidt, 2009):

Different Learning Styles for Boys and Girls:

- Boys can think better if they are able to move around.
- Boys respond positively to team competition in academics.
- Boys do well with high stakes tests, time limits, and cooperative learning.
- Girls need unconditional positive reinforcement.
- Girls need to be encouraged to be risk-takers when performing academic tasks.
- Girls respond well to group work, real-life applications of their lessons and relaxing music.

Teachers need to purposely respect and involve students as learning partners. Building a positive teacher-student relationship is a key step in creating a caring and safe learning community. A strong predictor of student success is the relationships students have with their teachers. Therefore teachers should set real purposes for real life learning. When we integrate students' interest, motivations, passions, and talents; we help them to learn more, perform better, and be better disciplined in personal purposes and relevance.

Connell and Gunzelmann (2004) suggest several instructional strategies that can be especially effectively for boys, such as, providing activities that require the use of visual - spatial strengths; integrate physical activity and allow time for movement; provide opportunities for students to demonstrate learning through the use of hands-on materials and, maximize the student use of technology in the instructional process. Other recommended strategies include providing students with male-role models, providing activities that are built around intellectual competition, selecting reading materials that will appeal to boys and provide a safe and supportive classroom environment. Girls will also need a "girl-friendly" environment. Girls should be allowed to explore nontraditional areas, such as, advanced math, and science. Give girls the opportunity to develop leadership skills that is often untapped.

Summary

There are distinct differences in the basic learning needs of both boys and girls. Some of for boys these were movement, the use of visual-spatial activities, and allowing the students some choices and control in the learning process. Girls work well in small group settings and need positive relationships to enhance learning. Girls must be able to become risk-takers and learn to become problem solvers. Literacy needs to be personally relevant and socially significant. Boys and girls need to know the reason for learning and that learning is in the "here and now". How single-gender classrooms are implemented is critical to its success or failure. The teaching methods and classroom environment must be adapted differently for boys and girl to achieve to their abilities.

Chapter 5

Introduction

The purpose of this chapter is to integrate the current research into my current teaching practices. I have found several gender specific strategies I would like to implement into my daily routines. I usually have a majority of males within my classroom environment. Because of the number of boys I work with, I wanted to select instructional strategies that would stimulate the because research has proven there are differences in the brain structure

of boys and girl, I would like to implement those instructional strategies and offer my students new opportunities with the potential to have a greater impact on student achievement.

I have selected three instructional strategies that I would like to incorporate into my classroom based on this research. I will describe these strategies in depth in this chapter. This is my attempt to engage students in best practices from the current research.

Using Spatial and Graphic Aids:

Boys' brains have more white matter in them than girls. This is one brain differences which might explain why boys tend to rely on their visual cortex. Knowing this type of information can allow me to design appropriate strategies for our literacy block. Boys will need the use of visual-spatial teaching tools to enhance their learning. One way I have found that helps with this strategy is to use the overhead projector. Boys, as well as the girls, can practice words and sentences through writing and manipulation of letters on the overhead. The projection of the words on the screen is visually reinforcing for boys with that need. I have started allowing the boys to *draw* more when writing. Research stated that reading and writing can improve when using this tool. I encourage students, especially boys, to draw a picture, before or after. to accompany their writing. This use of art work can be compared to

"brainstorming". Instead of having students write, modify the terms, so that boys can draw their ideas.

Competition:

Competition is one of the very human ways in which children focus and build their sense of purpose. Research says that competition hones interests and passions, and competition compels a student to link his or her interests to paths of relevance. Some students feel more energized when competition is introduced to a project. Those that enjoy it will pay closer attention, focus better on the learning, engage their emotions, and feel that learning is more "real". It can be very valuable for girls, to learn the need of competition in everyday life. Good healthy competition in the classroom setting provides extra motivation for learning.

The ground rules for healthy competition include:

- It's for learning – not for creating a rivalry or cutting others down.
- All individuals or groups have a reasonable chance of winning.
- All of the students have a firm understanding of the first two points.

Here are some websites regarding competition opportunities:

Future Problem Solving (www.fpsp.org/)

Thinking Caps Quiz Bowl (www.thinkingcapquizbowl.com/)

Destination Imagination (www.idodi.org/)

Science Olympiad (www.soinc.org)

Ole Miss Problem of the Week (www.olemiss.edu/mathed/problem.htm)

I plan to incorporate more games - computer, board and word games, in my instruction. Just the mere suggestion of having boys set goals and compete to see if they can achieve, is a form of healthy competition. Dividing students into small groups to compete in phonemic awareness activities and having the team come up with a consensus answer before answering, is a healthy form of competition. Being part of the team and giving one's personal best, is what I want to encourage with my students .

Relationships:

Vygotsky (1978) maintains that teaching and learning are relational – all learning occurs through interactions between a learner and a more expert practitioner. The quality of the relationship between the learner and a teacher motivates, assists, and rewards the learning. Teachers need to relate to each and every student in the classroom. Students need to be looked at as individuals and they need to know they are cared about. Each year I survey the students as they come to first grade. I send this home, so that parents can "brag" on their child and share their child's interest, passions, and hobbies. This information allows me to "get-to-know" each child better. Research on boys and literacy shows that they

resist learning from people who do not take an interest in them and express care for them. I have incorporated many community building activities with my students. We participate in activities such as, name game – for appreciation of who we are and why we are special; activities on our likes and differences; we have a stuffed classroom pet, we hold when we have sharing time; and I celebrate "Student of the Week" and have children take turns being classroom helpers.

Summary

Helping boys and girl to achieve the best they can, by using a variety of instructional strategies can enhance the learning experiences for both the gender-specific classrooms as well as the coed classrooms. Research has shown us that there are differences in the ways boys and girls learn. Chapter five discussed three of many instructional strategies I plan to utilize in my daily delivery of instruction. These strategies would be appropriate to use with boys, girls or in a coed setting.

Conclusion

Single -gender classrooms and schools show promise in improving the learning and confidence in girls and boys. The knowledge of gender differences in learning should be used to drive decisions effecting the learning environment. The goal should be to provide an even

playing field for the development of academic achievement for boys and girls. Research has shown that there are biological, cognitive and emotional differences between boys and girls. Because of these differences, a variety of instructional strategies can be utilized when working with both sexes. We all are shareholders in the education of these children.

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