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Gender-based teaching and reading: trying to close the achievement gap

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GENDER-BASED TEACHING AND READING:
TRYING TO CLOSE THE ACHIEVEMENT GAP

Liane Harrell

A Special Project
Submitted to the faculty of the Office of the Graduate School
in partial fulfillment of the requirements
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Special Project Committee

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Abstract

Gender-based teaching and grouping is a controversial topic that has been used and researched for many years. With the discrepancies between boys’ and girls’ attitudes and performances in reading, educators are continuously trying to find ways to close the widening gap. This is especially true for students with learning disabilities as boys are identified more often than girls. This special project was created to establish the effectiveness of teaching students with learning disabilities using gender-based strategies, provide educators with background information on brain research and gender-teaching, and to determine the importance of differentiation. It also will provide resources for educators to implement these various techniques in their own classrooms.
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Chapter 1

Introduction

General Problem

There are growing achievement gaps between boys and girls in specific subject areas (Anglin, Pirson, & Langer, 2008; Littleton, Wood, & Chera, 2006; Logan & Johnson, 2009; Smith & Wilhelm, 2004; Taylor, 2004). Many students are performing poorly, and schools are seeing more students being placed in special education. Educators are trying to close the gaps and give the students early interventions before they get behind. Some are using gender-based teaching strategies. One technique many educators have turned to in doing this is placing students into single-sex classes or groups (Martino, Mills, & Lingard, 2005; Warrington & Younger, 2003).

Gender grouping and teaching is a controversial matter that has been researched for many years. The purpose and effectiveness of gender-specific teaching strategies has always been in question. Throughout the years, it is becoming even more of a heated topic as the number of males with special education support in the school systems is rising (Share & Silva, 2003), and achievement gaps continue to widen between boys and girls in specific subject areas. Boys are said to be twice as likely to be identified as having learning disabilities and put into special education (Tyre, 2006).

Specific Problem

It is argued that there are multiple reasons for achievement gaps between boys and girls, and many researchers are trying to find ways to close those gaps.
Some reported gaps for girls are in science and math. Other researchers have argued that there are broader gaps in the area of reading for boys (Logan & Johnson, 2009; Smith & Wilhelm, 2004; Taylor, 2004). One specific study agrees that boys are under-achieving in literacy. Lack of confidence may keep them from enjoying reading and writing, and they may ultimately give up on any related activities (Smith & Wilhelm, 2004).

Due to the academic discrepancies, different types of teaching strategies and groupings have been researched in hopes of finding ways to help both boys and girls to achieve their highest ability in reading. Some researchers wanted to know if the gap could be narrowed by incorporating single-sex classes or groups (Martino et al., 2005; Warrington & Younger, 2003). Others report that true differentiation is the key to teach students to their highest ability level while eliminating any gender bias that may be present.

**Importance of Topic**

This topic is important because there are achievement gaps between boys and girls that continue to grow larger. Because not all teachers and parents are educated in these variances of learning, boys are often being seen as having a possible conduct disorder or learning disability (King & Gurian, 2006). Examining the research may encourage educators to look at the differences in how boys and girls learn, research the best ways to educate, and develop and use specific strategies in hopes of closing the achievement gap for struggling students. This research aimed to look at the differences of how boys and girls learn, investigate
the effectiveness of gender-specific teaching strategies and groupings, and examine the importance of differentiation.

**Definitions of Terms**

**Anecdotal Notes**: Anecdotal notes are any notes, observations, and/or documentation that a teacher will record to show student growth.

**Benchmarks**: Reading benchmarks refer to a reading assessment that is given at least three times a year to determine a student’s instructional and independent reading level. They measure decoding, fluency, and fluency and are used to analyze the types of errors that are being made.

**Differentiated Instruction**: This term refers to the way we make accommodations for students' learning based off of academic need, learning styles, and interests.

**Gender**: The term gender is used in this study to describe the stereotypical ideas that define males and females. This paper will look at some of the ways society defines males and females, including the ways that they are said to learn. Gender is described as the way individuals are shaped through social influences and expectations (Sax, 2005).

**Gender-Based Teaching**: Gender-based teaching refers to the ways individuals teach a certain set of skills. This type of teaching is based on researched strategies used to educate a specific gender.

**Gender-Bias**: Gender bias refers to the ways that society may shape students’ ideas, thoughts, and personalities. Student expectations may be based on generalizations of the differences between boys and girls, how they act, and how they learn.
**Hard Reading Level:** This refers to the reading level in which a book or text is too difficult for a student. This takes into account decoding, fluency, and comprehension levels. For this specific research, Fountas and Pinnell’s criteria were used. Students’ reading levels are considered hard when they are reading levels A-K with accuracy below 90% or levels L-Z with accuracy below 95% (Fountas & Pinnell, 2008).

**Independent Reading Level (Easy):** This refers to the reading level in which a student can read independently. This takes into account decoding, fluency, and comprehension levels. For this specific research, Fountas and Pinnell’s criteria were used. Students’ reading levels are considered independent when they are reading levels A-K with 95-100% accuracy or levels L-Z with 98-100% accuracy (Fountas & Pinnell, 2008).

**Instructional Reading Level:** This refers to the reading level in which a student can read instructionally. This takes into account decoding, fluency, and comprehension levels. For this specific research, Fountas and Pinnell’s criteria were used. Students’ reading levels are considered instructional when they are reading levels A-K with 90-94% accuracy or levels L-Z with 95-97% accuracy (Fountas & Pinnell, 2008).

**Leveled Literacy Intervention (LLI):** Leveled Literacy Intervention is a research-based reading program developed by Fountas and Pinnell. This reading program focuses on the cornerstones of reading development. Each lesson fits a two day time span and focuses on fluency reads (re-read), phonemic awareness,
challenge reading (new book at instructional level), word work, writing, and comprehension.

NWEA: This acronym stands for Northwest Evaluation Association. It is an assessment that various school corporations will adopt for district-wide progress monitoring. The school in this study tests the K-5\textsuperscript{th} students three times a year on reading, math, and language arts.

Pause Points: Pause points refer to incorporating punctuation into reading such as pausing for periods, exclamation points, question marks, and commas. Pause points are taught to increase fluency and comprehension.

Running/Reading Records: Running records are similar to benchmarks but are given more frequently throughout the year. They are used to monitor ongoing progress and to determine if a student's current reading level is appropriate. Running records measure decoding, fluency, and comprehension and are used to analyze the types of errors that are being made. These should be given more often to students with disabilities.

Single-Sex Classes: A single-sex class is a term to define all male groupings and all female groupings. The word sex is used to determine the difference between male and female. According to Sax (2005), sex is the term used to describe the biological make-up of a human.

Talking Books: Talking books are books on tapes or CDs that children can follow along to and listen. According to Littleton et al. (2006), talking books are

“Interactive CD ROMs, which offer a multimedia presentation of the traditional
storybook format, including the addition of speech feedback so that children can elect to hear the story read to them" (Littleton, et al., 2006, p. 383)

**Research Approach**

The research that was completed on gender-based teaching in single-sex groupings was a mixed approach, both qualitative and quantitative. Articles and relevant materials were reviewed focusing on statistics, numbers, and historical data.

For the action research project, student data was collected and analyzed. The teacher used research-based teaching strategies to educate the students, and the lessons were differentiated based on gender and learning styles. Pretests (benchmarks) were given to the students to determine what they already knew or need to know. After the appropriate skills were taught, posttests (benchmarks) were given to determine what the students had learned. During the time period, the educator also collected anecdotal notes, NWEA scores, and students' writing work. The effectiveness of using gender-specific teaching strategies and student learning was evaluated based on the items that were collected.
Chapter 2

Literature Review

Introduction

There are some alarming statistics about boys. Two-thirds of students with learning disabilities are boys, 90% of referrals in schools concerning discipline are related to boys, and males dominate the high school dropout numbers at 80% (Gurian & Stevens, 2004). Although it has been acknowledged that the achievement gaps are concerning, the reasons for the discrepancies are still being researched. Some believe that the gaps may be due to inherent differences in the biological make-up of the brain (Gurian & Stevens, 2004), while others report that some use to believe stereotypical male and female behaviors based on societal norms were to blame (Tyre, 2006). Regardless of the reason for the gap, it is understood that something needs to be done. In order to determine if gender grouping plays an essential role, it is crucial to understand the differences in how boys and girls learn. Once those variances are recognized, research based teaching strategies should be used with one goal in mind: All students should be given an equal chance to learn.

The Female vs. Male Brain

The male and female brains vary in significant ways. These differences are noticed around the world and are not often affected by culture (Gurian & Stevens, 2004). It is noted that the brain tissue is different in males and females, and sex determines where different abilities originate from in the brain.
Sax (2005) describes the male brain as being a house with different rooms. Each room holds only one item, and many of the rooms are often locked. He describes the female brain as being a house with rooms that can hold and share many different items. These items can be accessed at the same time and are rarely locked (Sax, 2005).

**The female brain.** According to Gurian and Stevens (2004), the minds of females are found to differ significantly from the mind of males. Girls are said to have neural connectors that are stronger than boys’ These help with storing memory, active listening, and detecting the tones in the human voice. A female’s hippocampus is larger which allows them an advantage to learning language arts. The tissue in the brain that connects the hemispheres is also larger and allows the brain to retrieve information from one hemisphere to another, or multitask. The prefrontal cortex develops earlier in girls than in boys and is more active, allowing them to think through their choices without the need for impulsivity. The amount of serotonin also plays an important role in the decision making process. The cortical areas of the female brain are accessed more, assisting in patience, verbal ability, memory, and active listening. Female brains do need to be recharged, but unlike boys who go into rest states, girls are able to stay awake and alert even though they may not find the topics interesting (Gurian & Stevens, 2004).

**The male brain.** While the female brain seems to be wired for the success in the area of language arts, the male mind is strikingly different. Boys have less oxytocin and serotonin in the brain. This affects their impulsivity levels and
abilities to hold small talk. The lower amounts of blood flow relate to their challenges to multitask and transition. Male brains tend to compartmentalize learning and are designed more for spatial-visual functioning. This makes them want to move more often. Males also go into a rest state a number of times throughout the day. This may be happening when students look as if they are inattentive, having difficulty focusing, or falling asleep. They may try to stay awake by doing activities that can disrupt the classroom environment such as tapping a pencil or moving around (Gurian & Stevens, 2004). The male neural system also uses type M gangolin cells to detect movement and relies on these cells when reading and writing. Because of this, visuals are important when reading and writing (Sax, 2005).

**Specific Learning Styles Linked to Brain Research in Reading**

**Female learning styles.** When researching the brain, it is equally important to understand male and female learning styles. According to Bender (2005), girls may mature sooner than boys in verbal ability and boys mature sooner in visual and spatial skills. He also reported that “gender maturation” may be related to achievement, and motivation plays an important role in the success of students (Bender, 2005).

Girls are said to perform better in reading (Logan & Johnston, 2009) and poorer in math and science (Anglin et al., 2008). Research has stated that girls may be auditory learners and seem to express themselves better through reading and writing. Things should be explained to this type of learner, and the
students should be allowed to discuss their learning with others (Geist & King, 2008).

Another biological difference is that girls are generally able to hear more efficiently than boys (Sax, 2005). They also have a bigger vocabulary and use more words than males (King & Gurian, 2006). Female toddlers have a vocabulary twice as large as the same aged males, and girls begin talking before boys (James, 2007). Females also see differently, having more P gangolin cells in their visual system. These cells are said to pick up more variations in color and fine sensory, which favor them when working with materials focusing on color and sensory (King & Gurian, 2006).

Girls reportedly have a better attitude towards reading, and studies have shown the relationship between attitude and the ability to read (Logan & Johnston, 2009). They often receive higher scores on open-ended tasks and can complete them independently. Female students enjoy finding multiple solutions to questions and work cooperatively. They often perform better on activities where they have to retrieve information rapidly (Geist & King, 2008). Girls tend to choose relevant materials to them, but those choices tend to be based on fictional characters or feelings. These choices are seen in writing as well (King & Gurian, 2006).

**Male learning styles.** There is a wide range of information on boys and literacy. As Geist and King (2008) reported, fine motor and language skills develop later in boys than in girls, suggesting a possible reason for the achievement gap. Research has also shown that boys may process words at a
slower rate and do not hear as well as girls. “Boys tend to learn better from part to whole and girls from whole to part” (Geist & King, 2008, p.49). Boys seem to prefer reading nonfiction, websites, and magazines with facts. Male students may relate more to reading when inquiry-based instruction is used, through drama, and through positive males to model learning in the classroom (Taylor, 2004).

Some educators believe boys acquire knowledge kinesthetically and are visual learners. Things should be shown and presented to them. They may benefit from hands-on activities or manipulatives to solve problems. Boys are also said to perform better on visual-spatial activities, do better on tasks such as puzzles (Geist & King, 2008) and have more advanced hand-eye coordination (Tyre, 2006). Boys need more movement, seem to struggle with reading more often than girls, and even see colors differently (Sax, 2005). According to Geist and King (2008), it is more difficult for boys to attend to activities for long periods of time, and boys communicate through actions instead of verbally. Boys tend to get bored easily and are very competitive. They are physical and interact with their environments (Geist & King, 2008).

**Gender Bias in the Classroom**

Because of these marked differences in how boys and girls learn, questions are being raised about expectations and generalizations in education. Research throughout the years has shown a growing increase in boys in special education classes, pointing towards possible gender-bias. Some believe that there is a bias in the evaluations that are being used to determine if a student qualifies for support (Share & Silva, 2003). Researchers from one study
acknowledged that there has been an increase of boys being determined to have reading disabilities, and they wanted to establish if there were any discrepancies in the testing. Results from their study determined that boys’ reading scores were being overestimated. The girls’ scores proved to be opposite of the boys’ findings (Share & Silva, 2003). According to Share and Silva (2003), “gender bias derives from the reading distributions, not from the IQ distributions” (p. 11). Other researchers agree that girls often perform better on tests (James, 2007), and this may not be taken into account when placing students in special education.

Sax (2005) reports that boys are also referred to medical doctors for Attention Deficit Hyperactivity Disorder more often than girls. It is argued that this is due to boys being seen as more overactive. Research has confirmed that boys have an inherited need to move and be active (Sax, 2005).

One specific example of bias is about a kindergarten boy who felt criticized while drawing a picture. According to Sax (2005), boys like to draw verbs and girls like to draw nouns. The boy in the example was drawing something happening. He was using blues and grays, as boys eyes are usually attracted to these types of colors. The female teacher noted his drawing but directed the boy’s attention to the little girl sitting next to him. The teacher commented on the details in the girl’s picture and all of the bright colors she had used. Instantly, the boy assumed he was a failure at art and never again saw himself as an “artsy” individual (Sax, 2005).
James (2007) found:

Stereotyping, peer pressure, social expectations and environmental influences from families, peers, and teachers as well as the media and entertainment industry, all work together to intensify the importance placed on gender differences. Students enter your classroom with beliefs about gender-appropriate behavior for them and for their classmates and for you. (p. 5)

Because of these controversies, the reasoning and effectiveness of gender grouping has often been in question.

**Effectiveness of Gender Grouping**

The effectiveness of gender grouping has been researched and analyzed for many years. As soon as achievement gaps between boys and girls were noticed, administrators and educators strived to understand the causes of the disproportion. Many studies have also been conducted to determine if single-sex grouping has been successful at increasing student achievement. Two specific studies conducted action research in the United Kingdom and Australia. Another one was conducted in Boulder, Colorado. Their results were reported and analyzed to help determine the effectiveness of single-sex grouping.

**Study 1: interrogating single-sex classes.** This study was a project that was funded by the government of Australia. It was aimed at examining if single-sex classes were appropriate ways to meet the educational needs of boys. The study took place in 19 schools but only reported on one. It took into account students’, teachers’, and administrators’ attitudes and experiences of this type of
grouping. It was noted in the study that many of the educators would teach based on their assumptions of stereotypical ways boys and girls learn. It was also reported that many of the boys were put into groups based on behavior. A male teacher taught the boys and a female teacher taught the girls (Martino et al., 2005).

The research showed that the boys group was formed as a type of behavior management, and the boys felt that the single-sex group was not as hard as mixed-groups. The school reported that there were less behavior problems in the specific group of boys which benefited the entire school (Martino, et al., 2005). The principal believed only specific boys and girls should be placed in these groups depending on personalities and interests. The principal also claimed lessons should be short and boys needed to be given a purpose for learning. The girls’ classes seemed to happen only because single-sex classes were being formed for the boys (Martino, et al., 2005).

It was argued that the groupings may be beneficial for some students, and there are differences in the way students learn that need to be taken into account (Martino, et al., 2005). Other researchers, Arnot (1984), The American Association of Women Educators (1998), and Martino and Meyenn (2002), related the effectiveness of single-sex grouping to the effectiveness of the teacher, not the strategies used or the teacher’s gender (as cited in Martino, et al., 2005, p. 241).

**Study 2: gender-based teaching in 31 comprehensive schools.** This article reports the findings of a study conducted throughout 31 English schools
that researched the effectiveness of single-sex teaching. According to Warrington and Younger (2003), the groups were formed to try to raise student achievement levels. The effectiveness was difficult to determine due to the short timeline of the study, but many positive findings were reported. Some schools reported raised scores and more confidence, while others reported poor behaviors among the boys and the reinforcement of stereotypical gender behaviors (Warrington & Younger, 2003).

Preparation for the groupings varied. Some schools reported no preparation, and others reported training teachers and visiting other teachers to see how they were implementing the programs. In terms of the students, some were not notified of the groupings. Other parents and students were informed through letters that were sent home (Warrington & Younger, 2003).

Specific strategies for teaching the boys included short, structured lessons, the use of competition, kinesthetic activities, the use of computers, nonfiction, and instant feedback. It was reported that one teacher used Gardner’s Multiple Intelligences to determine the girls’ styles of learning. “Gender-differentiated planning in this school ensured that appropriate teaching strategies were employed for both sexes” (Warrington & Younger, 2003, p. 344).

Some participants saw single-sex teaching as a way to build confidence, promote collaboration, develop social skills, close an achievement gap, and help students to be less intimidated. Some wanted to address the differences in how boys and girls learn. A few schools abandoned the groupings early, while others
used it for up to six years. By the end of the study, over 30% of the schools no longer had single-sex classes (Warrington & Younger, 2003).

The results on overall effectiveness were mixed. Some schools saw gains in academics in general, several saw gains in only specific subjects, a number saw the most gains in their lowest performing students, some noticed gains in only girls or boys, and a few reported no gains at all. Specific schools expressed having a positive experience, and others ended the single-sex classes quickly. The concluding results showed links of success associated with school preparedness, commitment, and attitude (Warrington & Younger, 2003). Boys gained confidence and were more conscientious of their work. Girls gained confidence as well, and they were able to focus more on the lessons. A few schools’ results showed that the students, mostly the boys, did not like being in the single-sex class (Warrington & Younger, 2003).

Students’ surveys also varied, but they were mostly in favor of the groupings. A number of surveys indicated that the students enjoyed the single-sex classes and had positive experiences. The research concluded that 90% of one school’s participants and 98% of another school gave optimistic remarks towards the groupings (Warrington & Younger, 2003).

**Study 3: Douglass elementary school.** A school in Boulder, Colorado also did an action research project on the effectiveness of gender grouping in 2005. The school consisted of 470 students where boys were underperforming on the Colorado State Assessment Program (CSAP) with a 13 point overall gap. Boys at this school consisted of 75% of the students in a special education
program. It is reported that the school implemented research-based instructional strategies based on gender and was able to significantly narrow the boys’ learning gap in one year. The girls’ scores also improved. The students overall gain of 21.9% on the CSAP was significant. The boys scored an even higher 24.4% increase in language arts. The students in special education excelled 7.5 times higher than other district students taking the test. Douglass Elementary School credits their significant gains to being able to embrace the very attributes that were once seen as hindrances. These included task analysis with focusing on a single skill at one time, impulsivity, competition, and spatial-kinesthetic learning modalities (King & Gurian, 2006).

Effective Strategies Based on Findings

Reading strategies for males. Specific reading strategies have been suggested based on how boys learn. Some of these strategies include kinesthetic learning, having visual models available, providing high interest choices, making teaching relevant for the learners, and providing positive male role models to help influence their learning (King & Gurian, 2006).

Providing boys with kinesthetic learning experiences may satisfy many of their learning modalities. Most of these types of activities require the students to manipulate materials spatially, promote movement, and keep students focused and interested. One specific strategy that satisfies this learning modality includes providing story boards for boys to nonverbally express their comprehension and thoughts by using pictures. These story boards allow the students to communicate with the help of visual-spatial manipulatives. It is argued that the
pictures will help students connect to and remember important words (King & Gurian, 2006). Another proven tactic to help boys communicate their feelings is to provide them with something spatial-mechanic to do, such as bouncing a ball, when expressing themselves (Gurian & Stevens, 2004).

A key strategy for success is to give the students high interest reading materials to choose from. With the use of media, comic books, and the internet, boys should be allowed to incorporate these high interest activities into their literacy learning (Newkirk, 2006). Boys also tend to choose from non-fiction materials that they feel are relevant to them (King & Gurian, 2006). One study examined the effectiveness of using talking books with boys as a strategy for teaching beginning or struggling readers. Findings showed that the books were beneficial for boys who had both low and high phonological awareness abilities. The students in the study developed skills that were essential for the development in reading. These skills included increased phonological awareness and attempts at reading (Littleton et al., 2006).

Researchers also suggest to design lessons so they are of high interest and relevance, give the students a sense of space by allowing them to make their desk, coat, and cubby area their own, and allow for healthy competition (Gurian & Stevens, 2004). The results of one study concluded that boys did enjoy high interest literacy activities that were at their levels. They enjoyed using their unique strengths and were confident reading and writing about things they were interested in. They liked when the teacher gave them materials to support their readings (Smith & Wilhelm, 2004).
Male role models serve as a positive reinforcer for boys’ learning as well. These role models can include male teachers, fathers, brothers, and professionals in the community. These individuals can help give meaning to students’ learning (King & Gurian, 2006).

Reading strategies for females. While there are strategies that focus on how girls learn, they are limited in the area of language arts. There is a significantly greater amount of research based strategies for boys in reading. This may be due to the growing gender gap and the concerns over boys’ lack of progress.

Strategies that focus on girls’ weaknesses include forming groups that encourage them to negotiate and lead, using manipulatives and puzzles to increase visual-spatial ability, providing more opportunities to incorporate the use of technology, and increasing motor skills by motivating students to join in on physical games (Gurian & Stevens, 2004). Strategies that focus on their strengths include activities where they can express themselves through reading. Girls thrive when items are explained orally and they are allowed to discuss their learning. Female students enjoy finding multiple solutions to questions and working together in cooperative groups (Geist & King, 2008). Giving girls choices of relevant material, such as a focus on fictional characters or emotions, will keep them engaged as well (King & Gurian, 2006).

Kathy Sanford, a professor at the University of British Columbia, was concerned that the growing focus on how boys learn may be detrimental to girls’ progress in school. She also noted that while biological differences are important
to recognize, it is crucial to understand that students should not be defined by gender stereotypes. She decided to complete a study in a Canadian middle school, focusing on students’ learning in the classroom. Her research consisted of observations, interviews, surveys, and participation on the Gender Committee at the school.

Sanford (2005) reported that it is important that schools do not forget the importance of teaching girls lifelong skills for reading. She also claimed that focusing on gender stereotypes may limit experiences for the students. She stated that some schools’ definitions of gender and literacy may be skewed and that teachers may not be comfortable working with the different text materials that occur outside the school setting such as email and text messaging. She argued that females are learning “traditional” literacy elements but struggle with “out of school” literacy, or technology, where males are flourishing. It was concluded that schools must use caution when assuming abilities based on gender and should focus on preparing all students for the future (Sanford, 2005).

**The Role of Differentiation: Why it is Essential**

Taking gender into consideration may not meet all of the students’ educational needs. Brain research and Gardner’s Multiple Intelligences have helped enlighten teachers about the way students learn and the different aspects that may influence learning (Dacey & Lynch, 2007). Differentiation may play an extremely important role in helping low performing students learn to their fullest capacity while eliminating bias.
Two goals of differentiation are mastery of standards and the accommodations given to achieve mastery (Lawrence-Brown, 2004). Types of accommodations may be giving students extra time, allowing choice, breaking students into ability groups, having reading material at appropriate levels, and having various ways to test progress (Levy, 2008). Other accommodations include using assistive technology, personal assistance, structure, task analysis, and adaptations to the curriculum (Lawrence-Brown, 2004).

When utilizing differentiation in the classroom, there are methods that should be followed. The areas include content, process, product, and learning styles and interests (Levy, 2008). According to Levy (2008), content is based on the state standards that our government has deemed appropriate. In the past, teachers decided what, when, and how academics were taught. Now that our curriculum is based on standards, educators are accountable to make sure each student has an equal chance at succeeding. This can be difficult when there are so many different learning styles (Levy, 2008).

Levy (2008) stated that the process of teaching includes the strategies educators use and the way students acquire the knowledge that is being presented to them. All students have different interests and avenues for learning. Research has shown that it is important for educators to use differentiation to meet students’ unique needs (Levy, 2008). Lessons should be of high interest, strive for “active learning”, and incorporate Howard Gardner’s Multiple Intelligences. Additional supports should also be used for students who have the
ability to access the grade level curriculum but need certain accommodations to be successful (Lawrence-Brown, 2004).

According to Levy (2008), the products of learning are how the students show what skills they have mastered. This can be done through pre and post assessments, assignments, projects, and informal questioning. Assessments can be formative or summative. Formative assessments are informal, ongoing, and used to drive students’ learning. Summative assessments are based on the curriculum and are to assess mastery (Levy, 2008).

Research has established that math and reading should be taught in a variety of ways to all students, and the human brain looks for patterns while trying to acquire skills. Teaching one technique to all students in a whole group setting does not address the unique needs of all individuals. In addition, this type of teaching does not always reach the high ability or struggling students. Frustration levels may lead to inappropriate behaviors in the classroom (Bender, 2005).

Just as differentiation can lessen frustration levels, it can help to promote positive attitudes and confidence. According to Smith and Wilhelm (2004), it is essential for boys to feel confident in what they are learning and to be given immediate feedback. Attitudes and feelings of competence should also be taken into consideration and are closely linked to student success (Logan & Johnson, 2009). “Students do not all learn the same way, so we cannot teach them all the same way. We have to adjust our teaching style to reflect the needs of our students” (Levy, 2008, p. 162).
Conclusions Based on Findings

The culmination of studies reached some various conclusions. There are apparent differences in the biological make-up of the female and the male brains. Achievement gaps may be contributed towards biology or may be occurring due to stereotypical generalizations and expectations about students.

Some reports concluded that single-sex classes were not beneficial and did not raise achievement, but a number of studies reported single-sex classes as being beneficial and enjoyable to students. Additional findings supported that the success was linked to educators’ knowledge, students’ attitudes, the understanding between biological differences versus society’s view of gender, and the implementation of differentiation.

Although some students were taught using gender-based strategies, overall differentiation was also taken into consideration. The research supported that gender-based teaching strategies can be seen as a way to differentiate, but it is important not to have stereotypical or generalized ideas on students’ weaknesses, strengths, and abilities. Due to the differences in how brains are developed, learning styles and techniques are important to take into account when teaching students. The biological make-up of the brain is important to understand and consider, but there are many gender stereotypes that shape personalities as well. Students’ learning should be relevant to them and based on individual needs and learning styles.
Research Questions

There are specific questions that the researcher hoped to have answered through the literature review and action research project. These questions were used to focus the research. Results from the action research assisted in answering these questions in further detail.

The current research questions are as follows: Do gender differences play a role in how boys and girls learn? How effective is gender-based teaching in single-sex classes? What are some specific strategies that will increase learning for students in elementary school in reading? How important is differentiation in supporting student learning?
Chapter 3

Development of Special Project/ Methodology

Description of the Special Project

This action research was designed to explore gender-based literacy teaching among students with special needs. The data that has been collected was analyzed to determine the effectiveness that the groupings and accommodations have on students’ academic performances. Students in the researcher’s literacy groups participated in this project because the grouping and teaching happened whether the research was being conducted or not. The students received special services support from the researcher in the area of reading. Everyone in the groups participated because the standards are required coursework and are reviewed every day. Differentiation was used because each student gets accommodations based on the Individual Education Plans.

During the action research, the students received small group instruction daily for 30 minutes. Four students were divided into groups by gender. The teacher used research-based teaching strategies to educate the students, and the lessons were differentiated based on gender and learning styles. Another group of four students were mixed and were allowed choices based on their interests. Pretests (benchmarks) were given to the students to determine what they already knew or need to know. After the appropriate skills were taught, posttests (benchmarks) were given to determine what the students have learned. During the time period, the educator also collected reading records, anecdotal notes, NWEA scores, and students’ writing work. The effectiveness of using gender-specific
teaching strategies and student learning was evaluated from those items being collected.

**Participants**

The participants for this action research attend Andrews Elementary School in Andrews, IN. The students are in grades 4th-5th and are on the researcher’s caseload. The researcher monitored and analyzed the progress of three groups: one male group (two students), one female group (two students), and one mixed group (four students). All of the students received Leveled Literacy reading instruction (LLI) and were taught using research-based strategies. Out of the eight students participating, seven were categorized as having a Specific Learning Disability (SLD) in reading while the other student was identified with an Autism Spectrum Disorder (ASD).

**Demographics and Setting**

Andrews Elementary School is in Andrews, IN. There are approximately 370 students enrolled in this Title 1 School. 91% of the students are white, 3.6% are multiracial, 3.8% are Hispanic, 1.1 % is American Indian, and .5% is Asian. 44% of students receive free lunch with 7% receiving reduced lunches. The students participating in the study come to the resource room for 30 minutes of reading instruction once a day per their individual Education Plans (IEP). The groups range from two to four students at a time. Out of 370 students, 25 of those students have an academic IEP.
Data Sources

Multiple data sources were used while completing this research. Historical and new data including standardized test scores, student work, reading records, benchmarks, and anecdotal notes were analyzed to determine effectiveness.

NWEA (a district wide, mandated test given to all students in reading, math, and language arts) scores were collected to show patterns of growth or decent in students’ scores. Reading records and benchmark samples were used to monitor students’ progress, track reading patterns, and determine instructional reading levels. This is where the teacher listens to the students read around 120 words. The students’ reading is then analyzed to distinguish reading patterns to see what errors they may be making or what strategies they may be using and to track fluency and comprehension. Anecdotal notes were analyzed to determine students’ reading patterns and behaviors as well as attitudes. Finally, writing work samples were referred to and described in order to showcase the activities the students completed during the data collection period.

Data Collection Procedures

The action research data took five weeks to collect and over three months to gather additional research, compile and analyze the data, and turn the finished product into a teacher handbook. Since the action research is completed, the researcher has analyzed the testing data, student work, and anecdotal notes.

Students learned 3rd-5th grade Indiana English/LA Academic Standards per Leveled Literacy Intervention. Progress on these standards was reviewed as well as the standardized test scores. The students’ regular class work was also
analyzed. Students' work samples and reading benchmarks have been copied, names were replaced with pseudonyms, and identification numbers will be assigned so that the students' work can be tracked over time.

Data was collected at the investigator's school of employment with students on the co-pi's caseload. The study took place in the co-principal investigator's classroom. The investigator used this class because the investigator has direct contact with the students daily and can work with them individually or in small groups. To conduct the study, the investigator used research-based teaching strategies with each group. All of the investigator's students were expected to participate in the regular curricular activities that the investigator planned and taught.

The files are kept in a storage closet in the co-investigator's classroom that can be locked for confidentiality. The stored research records will be kept for three years and then destroyed. Because the students' work is a part of the normal, everyday classroom work, normal classroom procedures for maintaining confidentiality will be observed.

**Format of the Product**

The finished project is a handbook geared towards elementary education teachers and should be used as a reference guide. It focuses on giving specific strategies for differentiating various concepts for boys and girls and the role gender grouping may play in student achievement. The handbook may be useful for finding the connections between gender, learning, and differentiation. It
includes the current research and statistics, the stated differences in how boys and girls acquire knowledge, and additional teacher resources.

The first part of the handbook briefly describes the literature used to support the educator’s findings on the effectiveness of gender-based grouping and teaching strategies. The research is no more than ten years old and is relevant to today’s educators. Gender-based teaching is described as well. It also briefly explains the action research completed in the researcher’s classroom, compiled data, and observations of a gender-based reading classroom.

The second part of the handbook discusses the importance of differentiation and should be seen as a resource for educators to use when implementing differentiation or gender-based teaching strategies in the classroom. The main purpose of this section is to list and describe specific strategies for teaching students including those with learning and/or cognitive disabilities, differentiated strategies and accommodations for inclusion of students in the classroom, assessment ideas, and strategies to promote positive attitudes towards learning.

The third part of the handbook includes relevant books, manuals, websites, and iPAD applications. These are teacher and student friendly and may be great supplemental resources to the students’ curriculum.
Chapter 4

Findings and Discussions

Forming the Groups

The students in this data collection were grouped based on their gender, reading levels, and classroom schedules. The researcher took the students at their normal, scheduled times for direct reading instruction for 30 minutes. For these groups, Leveled Literacy Intervention was the research-based practice used. Leveled Literacy Intervention consists of the introduction to and reading of a challenge book, discussion points, comprehension activities, fluency activities, vocabulary and word work, and fluency readings. The students are also monitored on a rotating basis using reading records. Students are formally benchmarked three times a year to determine instructional and independent reading levels. Each lesson was taught over a two to three day span of time.

The researcher collected data on the gender-based activities chosen or given to the students to complete during the reading of their challenge books, reading behaviors, and scores from running records, benchmarks, and NWEA. The scores from running records were based on decoding errors versus number or words read, benchmarks were based on decoding errors, fluency, and comprehension, and NWEA was based on winter 2011-2012 to winter 2012-2013 growth. Some of the activities included graphic organizers, charts, storyboards, vocabulary lists, and labeled drawings. The researcher’s teaching techniques varied as well depending on the gender of the group being taught. Students’ interests were also kept in mind as each individual rated the books using a scale
of one to three where one was the lowest score or disliked, two was neutral, and three was the highest or loved.

**Suggested Leveled Literacy Instruction Lesson Plan**

The following is a sample lesson plan from the Leveled Literacy Intervention: Red System Program Manual. Each lesson is designed to fit a 45 minute session and is broken down into two days. This LLI program was completed with each group as part of the normal special education interventions. This is the framework for day one.

**Discussion of Yesterday’s New Book:** Five minutes

**Revisiting Yesterday’s New Book:** Comprehension, vocabulary, and/or fluency – five minutes each

**Phonics/Word Study:** 10 minutes

**Reading New Book (Instructional Level):** Introducing the text, reading the text, discussing and revisiting the text, teaching point – 25 minutes

The following is a sample lesson plan from the Leveled Literacy Intervention: Red System Program Manual. Each lesson is designed to fit a 45 minute session and is broken down into two days. This LLI program was completed with each group as part of the normal special education interventions. This is the framework for day two.

**Revisiting Yesterday’s New Book:** Comprehension, vocabulary, and/or fluency – five minutes each

**Rereading and Assessment (Running Record):** five minutes

**Writing About Reading:** 15 minutes
Phonics/Word Study: 10 minutes

Reading New Book (Independent Level): Introducing the text and rereading the text – 10 minutes

Research Results of the Male Group

The researcher used many research-based approaches when teaching the male group of students. The male students were given both high-interest, nonfiction and fiction books to read (four of each). Books were analyzed with an investigative angle. Students studied and reported on the details of the book and found and discussed the big ideas. Movement, loud voices, competition, frequent breaks, graphic organizers, technology (iPAD), pictures, and drawings were also incorporated into the males’ reading lessons. Many visual examples were given and tasks were broken down into simple, manageable steps.

**Male #1 (M1).** Male #1 is a 4th grade student with reading and math goals. The student receives special education support under the eligibility category of Specific Learning Disability (SLD) for reading and math. M1 receives 30 minutes of direct reading instruction in the resource room as well as 30 minutes of indirect support for math.

Reading behaviors, patterns, and preferences: M1 is a kinesthetic and visual learner. He enjoyed coming to reading groups and often participated. On average, he read primarily in three to four word phrases. He had difficulty with inferring, retelling, and summarizing data in sequential order. M1 often struggled with decoding multiple syllable words and names. He seemed to prefer non-
fiction text and showed interest in kinesthetic activities to show his learning. He likes drawing and using technology.

**Beginning benchmark score:** Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade)

**Ending benchmark score:** Instructional at Level P (student is reading below grade level at beginning fourth grade but improved one level)

**Reading record scores based on decoding errors only:** 99% (easy), 99% (easy), 98% (easy), 99% (easy), 98% (easy)

**NWEA scores:** Winter 11-12: 185/189 (Did not pass); Spring 11-12: 194/193 (Passed); Fall 12-13: 193/194 (Did not pass); Winter 12-13: 192/197 (Did not pass but improved seven points from Winter 11-12 to Winter 12-13)

**Book ratings:** Overall, M1 gave higher ratings to the nonfiction texts. His average score for nonfiction books was a 2.6 while his fiction score was an average of two. When asked what he liked about the books he rated as a three, he often referenced the pictures, “cool facts”, and the activities that went along with the books. This was in line with research stating males prefer fiction over nonfiction.

**Male #2 (M2).** Male #2 is a 4th grade student with reading goals. The student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading. M2 receives 30 minutes of direct reading instruction in the resource room as well as 30 minutes of indirect support for writing.

**Reading behaviors, patterns, and preferences:** M2 is a kinesthetic and visual learner. On average, he read primarily in two to three word phrases. He had
difficulty with decoding, self-correcting, and retelling. He read at a slow rate and usually did not read with appropriate expression. He preferred non-fiction text over fictional text, but showed a general disinterest in reading. He participated in groups when called upon, but did not always volunteer answers. He seemed to enjoy kinesthetic activities to show his learning and liked using technology. M2 made it very apparent that he did not enjoy reading fictional text and would often refer to that genre as “boring” or “stupid”.

**Beginning benchmark score:** Instructional at Level O (student is reading below grade level at end of third grade beginning fourth grade)

**Ending benchmark score:** Instructional at Level P (student is reading below grade level at beginning fourth grade but improved one level)

**Reading record scores based on decoding errors only:** 97% (instructional), 97% (instructional), 96% (instructional), 97% (instructional), 93% (hard)

**NWEA scores:** Winter 11-12: 187/189 (Did not pass); Spring 11-12: 193/193 (Passed); Fall 12-13: 204/194 (Passed); Winter 12-13: 193/197 (Did not pass but improved six points from Winter 11-12 to Winter 12-13)

**Book ratings:** On average, M2 rated the nonfiction texts higher than the fictional texts. His nonfiction ratings were a 2.6 while his fiction score was an average of two. He had a difficult time verbally expressing his disinterest in the books in which gave a score of one. Again, he would just state that the fictional books were “boring” or “stupid”. This was in line with research stating males prefer fiction over nonfiction.
Research Results of the Female Group

The researcher also used a variety of research-based teaching strategies when teaching the female students including talking in a softer voice, allowing students to express their emotions, finding the right motivators for the students, and allowing the students to collaborate and talk with one another. The lessons involved teaching to their strengths and weaknesses. The female students were given a mixture of fiction and nonfiction books (four of each), and the analysis and comprehension process involved the ability to link language to emotions. The female group often worked together, verbally sharing their ideas and thoughts with each other. They were allowed to complete multiple activities at once and work at a more independent level without constant direct instruction from the teacher. The females’ activities included using vocabulary to link to memory, journal entries, partner work, use of technology (iPAD), and graphic organizers.

Female #1. Female #1 (F1) is a 4th grade student with reading, math, and social goals as well as a behavior plan. This student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading and math. F1 receives 30 minutes of direct reading instruction in the resource room as well as 30 minutes of indirect support for math.

Reading behaviors, patterns, and preferences: F1 is a kinesthetic and verbal learner. She loved to come to reading groups. She had a positive attitude but often struggled with focusing and staying on task. She benefited from frequent breaks and movement. F1 often read in three to four word phrases and made
visual errors while she read, such as reversing word order and skipping words. She used adequate expression while reading and found appropriate humor in the text. This student seemed to enjoy both fiction and nonfiction books but claimed that nonfiction was her favorite. F1 did an adequate job expressing her learning using vocabulary, writing, and verbal expression. She often claimed that she would rather do what the male group was doing in terms of activities. She showed interest in using technology, drawing, and using storyboards to show her learning.

**Beginning benchmark score:** Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade)

**Ending benchmark score:** Instructional at Level P (student is reading below grade level at beginning fourth grade but improved one level)

**Reading record scores based on decoding errors only:** 98% (easy), 96% (instructional), 95% (instructional), 96% (instructional), 96% (instructional)

**NWEA scores:** Winter 11-12: 182/189 (Did not pass); Spring 11-12: 185/193 (Did not pass); Fall 12-13: 186/194 (Did not pass); Winter 12-13: 196/197 (Did not pass but showed 14 points growth from Winter 11-12 to Winter 12-13)

**Book ratings:** F1 seemed to be more interested in nonfiction books over fiction texts. She gave an average score of 2.2 to the nonfiction books and a score of two to the fiction books. She took the book rating very seriously and would even write suggestions that she thought would make the books more interesting. She especially enjoyed reading plays and books where the characters would make or
build things. This disproved the general research that girls prefer fiction over nonfiction.

Female #2. Female #2 (F2) is a 4th grade student with reading and math goals. The student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading and math. F2 receives 30 minutes of direct reading instruction in the resource room as well as 60 minutes of indirect support for math.

Reading behaviors, patterns, and preferences: F2 is a visual and verbal learner. She often made comments that she loved to read. She came to reading groups happy and ready to participate. She claimed her favorite books were fiction because they are funny and interesting to her. There were a few nonfiction books that she liked, mainly the ones focusing on animals. This student had an extremely slow reading rate but generally had high decoding scores. F2 used good expression, especially when reading sentences ending with question marks and exclamation points. She had satisfactory, if not excellent, comprehension skills when reading at her level. She enjoyed activities where she could work with a partner. She especially liked to verbalize her thinking while sharing connections and background knowledge but would tend to get off topic if she shared too long.

Beginning benchmark score: Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade)

Ending benchmark score: Instructional at Level Q (student is reading slightly below grade level at mid fourth grade but improved two levels)
Reading record scores based on decoding errors only: 99% (easy), 98% (easy), 95% (instructional), 98% (easy), 94% (hard)

NWEA scores: Winter 11-12: 185/189 (Did not pass); Spring 11-12: N/A; Fall 12-13: 188/194 (Did not pass); Winter 12-13: 200/197 (Passed and showed 15 points growth from Winter 11-12 to Winter 12-13)

Book ratings: F2 enjoyed reading fiction books the most. She would often comment about this during reading groups. She did enjoy nonfiction books if the topic was animals. She gave an average rating of a three to the fiction books and a 2.2 to the nonfiction texts. Her ratings were in line with the research on girls preferring fiction texts.

Research Results of the Mixed Group

The students in the mixed group were also arranged based on their reading levels and classroom schedules. The researcher took the students at their normal, scheduled times for direct reading instruction for 30 minutes. For these groups, Leveled Literacy Intervention was the research-based practice used. Leveled Literacy Intervention consists of the introduction to and reading of a challenge book, discussion points, comprehension activities, fluency activities, vocabulary and word work, and fluency readings. These lessons were taught over a two to three day span.

The approach for this group was based on differentiation techniques and choices and did not take gender into consideration to help eliminate bias. The researcher collected data based on the activities chosen by the students to complete during their reading. Some of the students’ choices included graphic
organizers, charts, storyboards, vocabulary lists, personal interviews using the iPad, and labeled drawings. Each student also rated the book using a scale where one is the lowest score and three is the highest.

**Male #3.** Male #3 (M3) is a 4th grade student with reading, math, and social goals as well as a behavior plan. The student receives special education support under the eligibility category of Autism Spectrum Disorder (ASD). M3 receives 30 minutes of direct reading instruction in the resource room, 30 minutes indirect support for reading/grammar, 30 minutes of direct math instruction, and 30 minutes of indirect math instruction.

**Reading behaviors, patterns, and preferences:** M3 is a kinesthetic and visual learner. He liked coming to reading groups and would ask every morning if his group was meeting. He was well behaved and always pleasant. On average, he read primarily in four to five word phrases. He had extreme difficulty with inferring, retelling, and summarizing data. He did not have a definitive preference of genre when compared to fiction or non-fiction. His decoding scores on reading records and benchmarks were generally higher than his comprehension scores.

**Activities chosen:** M3 would often select the activity that the majority of his group would choose. He commented that he did not like to draw to show his learning but would prefer this as an option at times. He was not always able to demonstrate his learning independently as he would sometimes choose activities that were too difficult. He was very concrete in his thoughts and struggled with multiple step activities. He showed interest in kinesthetic activities and enjoyed using technology such as the computer or iPad.
**Beginning benchmark score:** Instructional at Level N (student is reading below grade level at mid third grade)

**Ending benchmark score:** Instructional at Level N (student is reading below grade level at mid third grade and did not make any gains)

**Reading record scores based on decoding errors only:** 99% (easy), 95% (instructional), 92% (hard), 97% (instructional)

**NWEA scores:** Winter 11-12: 183/189 (Did not pass); Spring 11-12: 196/193 (Passed); Fall 12-13: 179/194 (Did not pass); Winter 12-13: 165/197 (Did not pass and showed an 18 point decrease from Winter 11-12 to Winter 12-13)

**Book ratings:** M3 seemed to enjoy reading nonfiction books over fiction. He is a very literal thinker and often had a difficult time relating to fiction books. He did not always understand the humor or the characters either. He gave the nonfiction texts a high score of three and rated the fiction books at a 2.1. This was in line with research stating males prefer fiction over nonfiction.

**Female #3.** Female #3 (F3) is a 4th grade student with reading and math goals. This student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading and math. F3 receives 45 minutes of direct reading/grammar instruction in the resource room and 30 minutes of indirect support for math.

**Reading behaviors, patterns, and preferences:** F3 is a visual learner. She seemed to enjoy reading groups and always had a smile on her face. She was very compliant and always did what was asked of her. She showed difficulty with any activity where she had to express her thinking verbally. She read primarily in
three to four word phrases with little expression and at a slow rate. She did pay attention to her pause points while reading. F3 had to keep track of her thoughts while reading through the use of sticky notes or keeping track of page numbers. Otherwise, she would forget the important details during the retell of the book. She commented that she enjoyed both fiction and nonfiction books.

Activities chosen: F3 chose to express her learning mostly through graphic organizers, lists, and drawings. She liked using technology but struggled with understanding the directions on how she should use that technology to demonstrate that learning. She especially loved to draw but would work too long on adding details and would not be able to finish in a timely manner.

Beginning benchmark score: Instructional at Level N (student is reading below grade level at mid third grade)

Ending benchmark score: Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade but improved one reading level)

Reading record scores based on decoding errors only: 97% (instructional), 98% (easy), 94% (hard), 98% (easy)

NWEA scores: Winter 11-12: 181/189 (Did not pass); Spring 11-12: 176/193 (Did not pass); Fall 12-13: 183/194 (Did not pass); Winter 12-13: 196/197 (Did not pass but showed a 15 point increase from Winter 11-12 to Winter 12-13)

Book ratings: F3 showed a very slight favor for fiction books over nonfiction with a 2.1 versus two rating. She was quick to dismiss a book and would give them a lower score if she did not like the characters or the topic. The phrase “don’t judge
a book by its cover" was discussed a few times with this student. Her ratings were in line with the research on girls preferring fiction texts.

**Female #4.** Female #4 (F4) is a 4th grade student with reading goals. The student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading and math and also receives speech services. F4 receives 30 minutes of direct reading instruction in the resource room and 30 minutes of indirect support in the classroom.

**Reading behaviors, patterns, and preferences:** F4 is a verbal learner. She enjoyed reading groups but would struggle with staying on task and being agreeable at times. She was a very hard worker. On average, F4 reads primarily in three to four word phrases with a slower reading rate. Her reading records show decoding errors consistent with reading multiple syllable words. She would make some self corrections but did not always use her context clues to help her with more difficult vocabulary words. F4 often tried reading with expression but struggled with using correct intonation.

**Activities chosen:** F4 tended to demonstrate her learning through drawing and verbalizing her thoughts. She would tend to choose to use graphic organizers and charts to record her thoughts. She enjoyed using the iPAD to record her verbalizations about the books she read. She did not seem to enjoy writing long responses as she would struggle with correct spelling.

**Beginning benchmark score:** Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade)
Ending benchmark score: Instructional at Level Q (student is reading slightly below grade level at mid fourth grade but made improved two levels)

Reading record scores based on decoding errors only: 98% (easy), 99% (easy), 98% (easy), 93% (hard)

NWEA scores: Winter 11-12: 187/189 (Did not pass); Spring 11-12: 181/193 (Did not pass); Fall 12-13: 178/194 (Did not pass); Winter 12-13: 196/197 (Did not pass but showed a nine point increase from Winter 11-12 to Winter 12-13)

Book ratings: F4 also did not show a significant favor of fiction over nonfiction. She, like F3, determined her preference very quickly. She either really liked a book or disliked it. Her average ratings were a 2.5 for nonfiction and a 2.6 for fiction. Her ratings were in line with the research on girls preferring fiction texts.

Female #5. Female #5 (F5) is a 5th grade student with reading goals. The student receives special education support under the eligibility category of Specific Learning Disability (SLD) in reading. F5 receives 30 minutes of direct reading instruction in the resource room.

Reading behaviors, patterns, and preferences: F5 is a kinesthetic and visual learner. She enjoyed coming to reading groups but would ask if she could skip if her class was doing something that she did not want to miss. She read in primarily 3-4 word phrases with a slower reading rate. She struggled with using intonation and often skipped lines while she read. She too often relied on the reading instructor to help her find her place and would ask how to decode a word instead of using her own strategies.
Activities chosen: F5 loved hands-on activities. She mostly chose to draw or use technology to record her thinking. She would often run out of time on these activities as she would try to add as much detail as possible. She did not seem to enjoy writing long responses as she would struggle with correct spelling.

Beginning benchmark score: Instructional at Level O (student is reading below grade level at end of third grade/beginning fourth grade)

Ending benchmark score: Instructional at Level P (student is reading below grade level at beginning fourth grade but improved one reading level)

Reading record scores based on decoding errors only: 98% (easy), 96% (instructional), 94% (hard)

NWEA scores: Winter 11-12: 189/197 (Did not pass); Spring 11-12: 194/201 (Did not pass); Fall 12-13: 182/201 (Did not pass); Winter 12-13 199/204 (Did not pass but showed a 10 point increase from Winter 11-12 to Winter 12-13)

Book ratings: F5 preferred nonfiction over fiction. Her average ratings were a 2.75 for nonfiction and a 2.5 for fiction. This disproved the general research that girls prefer fiction over nonfiction.

Analysis of Findings

Male group. On average, the all male group preferred nonfiction over fiction texts. They often commented that the fiction books were “boring” and “stupid”. The researcher could physically see the changes in the boys when they were told they were going to read a fiction book. They sighed, slumped in their chairs, and put their hands on their faces (M1 was more willing to read the fiction books than M2). They were excited when presented with nonfiction books. As
stated previously, a key strategy for success is to give the students high interest reading materials to choose from. With the use of media, comic books, and the internet, boys should be allowed to incorporate these high interest activities into their literacy learning (Newkirk, 2006). Boys also tend to choose from non-fiction materials that they feel are relevant to them (King & Gurian, 2006).

The male students’ attitudes toward the text seemed to be linked to teaching strategies and subject matter. The participants enjoyed the hands-on, kinesthetic activities where they were provided with movement and competition and gave higher ratings to the nonfiction books that had “fun” activities. They also enjoyed reading the books with male role models. Providing boys with kinesthetic learning experiences may satisfy many of their learning modalities. Most of these types of activities require the students to manipulate materials spatially, promote movement, and keep students focused and interested. Some of these strategies include kinesthetic learning, having visual models available, providing high interest choices, making teaching relevant for the learners, and providing positive male role models to help influence their learning. Male role models serve as a positive reinforcer for boys’ learning. These individuals can help give meaning to students’ learning (King & Gurian, 2006). The results of one study coincide with the collected data and concluded that boys did enjoy high interest literacy activities that were at their levels. They liked when the teacher gave them materials to support their readings (Smith & Wilhelm, 2004).

The students’ scores did not prove or disprove the research. NWEA scores for this male group showed inconsistencies, but both boys increased at
least six points from winter 2011-2012 to winter 2012-2013. Reading records showed inconsistencies as well, but the students stayed within their independent and instructional levels of reading. Although both boys were reading below grade level, the students’ benchmarks scores increased by one level from the beginning of the data collection process until the end.

**Female group.** The female group showed mixed feelings on reading genre preference and the types of teaching strategies that were used. F1 preferred non-fiction and F2 preferred fiction. The females complied with reading both types of books and seemed to find enjoyment in each. They maintained positive attitudes and were compliant during the reading lessons. This aligns with the research that girls have a better attitude towards reading, and there is a relationship between attitude and the ability to read (Logan & Johnston, 2009).

The female group got more tasks completed in the 30 minute time period than the male group. Research states that giving girls choices of relevant material, such as a focus on fictional characters or emotions, will keep them engaged (King & Gurian, 2006). They often perform better on activities where they have to retrieve information rapidly (Geist & King, 2008).

The females did like working together in groups and collaborating to find results. They stated they felt comfortable sharing their answers with each other verbally. Researchers acknowledged that girls may be auditory learners and seem to express themselves better through reading and writing. Things should be explained to this type of learner, and the students should be allowed to
discuss their learning with others. Females thrive when they are allowed to discuss their learning (Geist & King, 2008).

Even though the female group had success with the gender-based teaching strategies assigned to them, they often commented on the boys’ activities and mentioned that they wanted to participate in what the male group was doing. Kathy Sanford, a professor at the University of British Columbia, stated that girls are learning traditional literacy elements but are not acquiring knowledge of “outside literacy”, which includes technology, as quickly as boys. She noted that while biological differences are important to recognize, it is crucial to understand that students should not be defined by gender stereotypes and be given opportunities to excel in other types of reading activities (Sanford, 2005).

The female group’s NWEA scores showed overall improvements from the fall to winter scores. Reading records showed inconsistencies in decoding errors and comprehension, and attitudes towards the text seemed to be linked to reading record progress. Benchmarks showed growth with F1 improving by one level and F2 improving by two levels.

**Mixed group.** This group also varied on reading preferences and progress. Choice activities were the platform of this group and progress seemed to be linked to the students’ attitudes. Some of the students’ choices included graphic organizers, charts, storyboards, vocabulary lists, personal interviews using the iPAD, and labeled drawings. All students have different interests and avenues for learning. Research has shown that it is important for educators to use differentiation to meet students’ unique needs (Levy, 2008). Girls tend to
choose relevant materials to them, but those choices tend to be based on fictional characters or feelings (King & Gurian, 2006). Lessons should be of high interest, strive for “active learning”, and incorporate Howard Gardner’s Multiple Intelligences. Additional supports should also be used for students who have the ability to access the grade level curriculum but need certain accommodations to be successful (Lawrence-Brown, 2004). “Students do not all learn the same way, so we cannot teach them all the same way. We have to adjust our teaching style to reflect the needs of our students” (Levy, 2008, p. 162).

Research has shown that girls perform better in reading (Logan & Johnston, 2009). The research results agree with this statement. NWEA scores showed improvements in the females from fall to winter and a decrease in the male’s fall to winter scores. Reading records showed inconsistencies but still fell within their independent and instructional ranges. The females’ benchmarks showed an increase by one to two reading levels while the males’ benchmark score stayed the same and showed no overall increase in skill ability.

Restrictions and Limitations

There were many restrictions and limitations that need to be taken into consideration when considering and analyzing this set of data. There were precipitating factors that were out of the researcher’s control. These generally had to do with timing, scheduling, and limited access to resources.

First, the data recording period was short and limited. The researcher only collected data for five weeks. This data was collected during a busy time of the school year including holidays, testing periods, student teachers, and bad
weather. The students’ schedules were not consistent, and the researcher had certain days when activities had to be postponed. Also, due to timing, the researcher did not have the spring NWEA scores to show the beginning to end of study growth in that area. New data could only be compared with historical data. Running records, benchmarks, and anecdotal notes were collected from the start of the data collection period until the end. It should also be noted that there was a significantly greater amount of research found for boys and reading versus girls and reading. This did impact the research collection and the analyzing process.

The groups of participants were small and the researcher had a limited amount of time of 30 minutes a session with each participant. There was limited access to technology and book topics. These limitations were due in part to using a scripted reading program with a small selection of books in each groups’ reading levels. It should be noted that the reading program was new and all reading materials were high-interest, relevant, and current.

**Effectiveness of Gender-Based Teaching versus Differentiation**

Data from this specific action research did not prove or disprove the effectiveness of gender-teaching or grouping. Student scores were inconsistent and the study, like most, had a variety of restrictions and limitations. The data did show that girls performed better than the boys, and that all students but one showed some growth. Activities linked to the books affected students’ attitudes, perceptions and choices. There were both males and females that preferred the other gender’s activities to their own, and some stereotypes of students’ preferences were disproven. Due to these results, one may conclude that true
differentiation is always best practice teaching and other programs, such as gender-teaching or grouping, can be effective ways to support student growth.
References


Gender-Based Teaching and Differentiation:
Using Researched-Based Teaching Strategies to Help Students
Find Relevance in the Learning Process

All Clipart Provided by Microsoft Office Windows

Liane Harrell
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Chapter One

What the Experts Are Saying
Importance of Topic

There are achievement gaps between boys and girls that continue to grow larger. Because not all individuals are educated in these variances of learning, boys are often being seen as having a possible conduct disorder or learning disability (King & Gurian, 2006). Examining the research may encourage educators to look at the differences in how boys and girls learn, research the best ways to educate, and develop and use specific strategies in hopes of closing the achievement gap for struggling students.

What the Brain Research Says

The male and female brains vary in significant ways. These differences are noticed around the world and are not often affected by culture (Gurian & Stevens, 2004). It is noted that the brain tissue is different in males and females, and sex determines where different abilities originate from in the brain.

Sax (2005) describes the male brain as being a house with different rooms. Each room holds only one item, and many of the rooms
are often locked. He describes the female brain as being a house with rooms that can hold and share many different items. These items can be accessed at the same time and are rarely locked (Sax, 2005).

**The Female Brain**

According to Gurian and Stevens (2004), the minds of females are found to differ significantly from the mind of males. Girls are said to have neural connectors that are stronger than boys’. These help with storing memory, active listening, and detecting the tones in the human voice. A female’s hippocampus is larger which allows them an advantage to learning language arts. The tissue in the brain that connects the hemispheres is also larger and allows the brain to retrieve information from one hemisphere to another, or multitask. The prefrontal cortex develops earlier in girls than in boys and is more active, allowing them to think through their choices without the need for impulsivity. The amount of serotonin also plays an important role in the decision making process. The cortical areas of the female brain are accessed more, assisting in patience, verbal ability, memory, and active listening. Female brains do need to be recharged, but unlike boys who go into rest states, girls are able to stay awake and alert even though they may not find the topics interesting (Gurian & Stevens, 2004).
The Male Brain

While the female brain seems to be wired for the success in the area of language arts, the male mind is strikingly different. Boys have less oxytocin and serotonin in the brain. This affects their impulsivity levels and abilities to hold small talk. The lower amounts of blood flow relate to their challenges to multitask and transition. Male brains tend to compartmentalize learning and are designed more for spatial-visual functioning. This makes them want to move more often. Males also go into a rest state a number of times throughout the day. This may be happening when students look as if they are inattentive, having difficulty focusing, or falling asleep. They may try to stay awake by doing activities that can disrupt the classroom environment such as tapping a pencil or moving around (Gurian & Stevens, 2004). The male neural system also uses type M gangolin cells to detect movement and relies on these cells when reading and writing. Because of this, visuals are important when reading and writing (Sax, 2005).
Specific Learning Styles Linked to Brain Research in Reading

Female Learning Styles

When researching how boys learn, it is equally important to understand female learning styles. According to Bender (2005), girls may mature sooner than boys in verbal ability and boys mature sooner in visual and spatial skills. He also reported that “gender maturation” may be related to achievement, and motivation plays an important role in the success of students (Bender, 2005).

Girls are said to perform better in reading (Logan & Johnston, 2009) and poorer in math and science (Anglin et al., 2008). Research has stated that girls may be auditory learners and seem to express themselves better through reading and writing. Things should be explained to this type of learner, and the students should be allowed to discuss their learning with others (Geist & King, 2008).

Another biological difference is that girls are generally able to hear more efficiently than boys (Sax, 2005). They also have a bigger vocabulary and use more words than males (King & Gurian, 2006). Female toddlers have a vocabulary twice as large as the same aged males, and girls begin talking before boys (James, 2007). Females also see differently, having more P gangolin cells in their visual system. These cells are said to
pick up more variations in color and fine sensory, which favor them when working with materials focusing on color and sensory (King & Gurian, 2006).

Girls reportedly have a better attitude towards reading, and studies have shown the relationship between attitude and the ability to read (Logan & Johnston, 2009). They often receive higher scores on open-ended tasks and can complete them independently. Female students enjoy finding multiple solutions to questions and work cooperatively. They often perform better on activities where they have to retrieve information rapidly (Geist & King, 2008). Girls tend to choose relevant materials to them, but those choices tend to be based on fictional characters or feelings. These choices are seen in writing as well (King & Gurian, 2006).

**Male Learning Styles**

Some educators believe boys acquire knowledge kinesthetically and are visual learners. Things should be shown and presented to them. They may benefit from hands-on activities or manipulatives to solve problems. Boys are also said to perform better on visual-spatial activities, do better on tasks such as puzzles (Geist & King, 2008) and have more advanced hand-eye coordination (Tyre, 2006). Boys need more movement, seem to struggle with reading more often than girls, and even see colors differently (Sax, 2005).
According to Geist & King (2008), it is more difficult for boys to attend to activities for long periods of time, and boys communicate through actions instead of verbally. Boys tend to get bored easily and are very competitive. They are physical and interact with their environments (Geist & King, 2008).

There is a wide range of information on boys and literacy. As Geist and King (2008) reported, fine motor and language skills develop later in boys than in girls, suggesting a possible reason for the achievement gap. Research has also shown that boys may process words at a slower rate and do not hear as well as girls. “Boys tend to learn better from part to whole and girls from whole to part” (Geist & King, 2008, p.49). Boys seem to prefer reading nonfiction, websites, and magazines with facts. Male students may relate more to reading when inquiry-based instruction is used, through drama, and through positive males to model learning in the classroom (Taylor, 2004).
Chapter 2

Gender-Based Teaching
Gender-Based Teaching

There are growing achievement gaps between boys and girls in specific subject areas (Anglin, Pirson, & Langer, 2008; Littleton, Wood, & Chera, 2006; Logan & Johnson, 2009; Smith & Wilhelm, 2004; Taylor, 2004). Many students are performing poorly, and schools are seeing more students being placed in special education. Educators are trying to close the gaps and give the students early interventions before they get behind. One technique many educators have turned to is placing students into single-sex classes or groups (Martino, Mills, & Lingard, 2005; Warrington & Younger, 2003).

Gender grouping is a controversial matter that has been researched for many years. The purpose and effectiveness of gender-specific teaching strategies has always been in question. Throughout the years, it is becoming even more of a heated topic as the number of males with special education support in the school systems is rising (Share & Silva, 2003), and achievement gaps continue to widen between boys and girls in specific subject areas. Boys are said to be twice as likely to be identified as having learning disabilities and put into special education (Tyre, 2006).
It is argued that there are multiple reasons for achievement gaps between boys and girls, and many researchers are trying to find ways to close those gaps. Some reported gaps for girls are in science and math. Other researchers have argued that there are broader gaps in the area of reading for boys (Logan & Johnson, 2009; Smith & Wilhelm, 2004; Taylor, 2004). Lack of confidence may keep them from enjoying reading and writing, and they may ultimately give up on any related activities (Smith & Wilhelm, 2004).

Due to the academic discrepancies, different types of grouping and strategies have been researched in hopes of finding ways to help both boys and girls to achieve their highest ability in reading. Some researchers wanted to know if the gap could be narrowed by incorporating single-sex classes or groups (Martino et al., 2005; Warrington & Younger, 2003).
Gender-Based Teaching Strategies

Reading Strategies for Females

While there are strategies that focus on how girls learn, they are limited in the area of language arts. There is a significantly greater amount of researched strategies for boys in reading. This may be due to the growing gender gap and the concerns over boys’ lack of progress.

Strategies that focus on girls’ weaknesses include forming groups that encourage them to negotiate and lead, using manipulatives and puzzles to increase visual-spatial ability, providing more opportunities to incorporate the use of technology, and increasing motor skills by motivating students to join in on physical games (Gurian & Stevens, 2004). Strategies that focus on their strengths include activities where they can express themselves through reading. Girls thrive when items are explained orally and they are allowed to discuss their learning. Female students enjoy finding multiple solutions to questions and working together in cooperative groups (Geist & King, 2008). Giving girls choices of relevant material, such as a focus on fictional characters or emotions, will keep them engaged as well (King & Gurian, 2006).
Strategies for Teaching Girls

Girls tend to perform better in reading than boys. Even though their brains seem to be “wired” more for success in this area, they do have weaknesses that may inhibit performance. When teaching girls how to read and comprehend, it is important to teach to both their strengths and weaknesses.

Teaching to Girls’ Strengths

✓ Use of multitasking
✓ Use of auditory/verbal learning
✓ Collaborative groups where they can share
✓ Open-ended tasks
✓ Finding multiple solutions to problems
✓ Rapid retrieval exercises
✓ Use of fiction books
✓ Introducing characters or feelings students can relate to

Teaching to Girls’ Weaknesses

✓ Collaborative groups where they can negotiate or lead
✓ Puzzles or exercises to increase visual-spatial ability
✓ Use of technology
✓ Physical activities to improve motor skills
Reading Strategies for Males

Specific reading strategies have been suggested based on how boys learn. Some of these strategies include kinesthetic learning, having visual models available, providing high interest choices, making teaching relevant for the learners, and providing positive male role models to help influence their learning (King & Gurian, 2006).

Providing boys with kinesthetic learning experiences may satisfy many of their learning modalities. Most of these types of activities require the students to manipulate materials spatially, promote movement, and keep students focused and interested. One specific strategy that satisfies this learning modality includes providing story boards for boys to nonverbally express their comprehension and thoughts by using pictures. These story boards allow the students to communicate with the help of visual-spatial manipulatives. It is argued that the pictures will help students connect to and remember important words (King & Gurian, 2006). Another proven tactic to help boys communicate their feelings is to provide them with something spatial-mechanic to do, such as bouncing a ball, when expressing themselves (Gurian & Stevens, 2004).

A key strategy for success is to give the students high interest reading materials to choose from. The results of one study concluded that boys did enjoy high interest literacy activities that were at their levels. They enjoyed
using their unique strengths and were confident reading and writing about things they were interested in. They liked when the teacher gave them materials to support their readings (Smith & Wilhelm, 2004).

With the use of media, comic books, and the internet, boys should be allowed to incorporate these high interest activities into their literacy learning (Newkirk, 2006). Boys also tend to choose from non-fiction materials that they feel are relevant to them (King & Gurian, 2006). One study examined the effectiveness of using talking books with boys as a strategy for teaching beginning or struggling readers. Findings showed that the books were beneficial for boys who had both low and high phonological awareness abilities. The students in the study developed skills that were essential for the development in reading. These skills included increased phonological awareness and attempts at reading (Littleton et al., 2006).

Male role models serve as a positive reinforcer for boys’ learning as well. These role models can include male teachers, fathers, brothers, and professionals in the community. These individuals can help give meaning to students’ learning (King & Gurian, 2006).
Interesting Factoids

**Tips to Keep in Mind When Teaching Boys**

1. Use good visuals to reinforce auditory presentations.

2. Provide additional wait time/think time to process information, especially when presented auditorially.

3. Incorporate a good deal of manipulatives, realia and models in your instruction. Legitimize touching the material.

4. Make an effort to keep the sound source to the student’s right side when possible.

5. Provide frequent talk breaks to foster processing as well as a preventative way to decrease classroom disruptions.

6. Ensure ample opportunity for movement in the classroom. Know when to send a boy on an errand!

7. Don’t routinely take away recess as a punishment for boys, use only as a last resort.
8. Always incorporate tactile/kinesthetic opportunities when teaching boys.

9. Use color and novelty in your instruction as a way to wake up the brain and enhance learning.

10. Keep in mind many boys need extra time for task completion.

11. Boys in general tend to mature at a slower rate than girls, therefore may not be ready for their assigned program/grade placement.

12. South Paw alert! Be aware that left-handed boys suffer learning disabilities 10 times the rate of righties.

13. Keep in mind that boys are less accurate at “reading” faces than girls. This can affect your ability to discipline nonverbally.

14. Boys tend to be more aggressive in temperament than girls. This has implications for grouping and pairing.

15. Provide priority seating (front row) for boys who are struggling learners.

16. Provide work tables vs. a desk to those boys who like to spread
out.

17. The greatest instructional motivator for boys is to teach to their interest area.

18. At times group by gender when using manipulatives, especially when working with rambunctious boys.

19. Color code file folders and instructional material as a way to help some boys learn to organize their material.

20. Remember that girls tend to “whisper”, while boys tend to “shout”.

21. Be aware that boys like to memorize facts. Take advantage of this trait.

22. Keep in mind that boys typically have a shorter attention span than girls.

23. Make sure that your instructional delivery and classroom management reflect the fact that 95% of the children diagnosed as hyperactive are boys.

24. Boys make up 80-90% of discipline referrals.
25. Boys make up at least 2/3 of the children on medication.
   (Question medication vs. mediation.)

26. When possible place some boys with a male teacher. (role model)

27. Because a girl’s “Corpus Callosum” (the bundle of nerves that connect the brains left and right hemisphere) is significantly larger than boys some researchers believe this may explain why girls are capable of completing several tasks at the same time.

28. Boys make up over 70% of students classified as special needs.

Note: Be cautious about accepting absolutes concerning gender differences. There are always exceptions. Remember that best instructional practices apply to both genders.
Chapter Three

Summary of Research, Analysis of Data, and Observations
Action Research Project

This action research was designed to explore gender-based literacy teaching among students with special needs. The students received special services support from the researcher in the area of reading. Everyone in the groups participated because the standards are required coursework and are reviewed every day. Differentiation was used because each student gets accommodations based on the Individual Education Plans.

During the action research, the students received small group instruction daily for 30 minutes. Four students were divided into groups by gender. The teacher used research- based teaching strategies to educate the students, and the lessons were differentiated based on gender and learning styles. Another group of four students were mixed and were allowed choices based on their interests. Pretests (benchmarks) were given to the students to determine what they already knew or need to know. After the appropriate skills were taught, posttests (benchmarks) were given to determine what the students have learned. During the time period, the educator also collected reading records (informal assessments to monitor decoding and comprehension), anecdotal notes, and NWEA scores (district assessment to progress monitor). The effectiveness of using gender-specific teaching strategies and student learning was evaluated from those items being collected.
Participants and Data Collection Process

The participants for this action research attend Andrews Elementary School in Andrews, IN. The students are in grades 4th-5th and are on the researcher’s caseload. The researcher monitored and analyzed the progress of three groups: one male group (two students), one female group (two students), and one mixed group (four students). All of the students received Leveled Literacy reading instruction (LLI) and were taught using research-based strategies. Out of the eight students participating, seven were categorized as having a Specific Learning Disability in reading while the other student was identified with an Autism Spectrum Disorder.

The researcher collected data on reading behaviors, activities chosen or given to the students to supplement their reading, and scores from running records, benchmarks, and NWEA. The scores from running records were based on decoding errors versus number or words read, benchmarks were based on decoding errors, fluency, and comprehension, and NWEA was based on winter 11-12 to winter 12-13 growth. Some of the activities included graphic organizers, charts, storyboards, vocabulary lists, and labeled drawings. The researcher’s teaching techniques varied as well depending on the gender of the group being taught. Students’ interests were kept in mind as each individual rated the books using a scale of one to three where one was the lowest score or disliked, two was neutral, and three was the highest or loved.
Summary of Analysis of Data

Male Group

On average, these students preferred nonfiction over fiction texts. They often commented that the fiction books were "boring" and "stupid". One could physically see the change when the boys were told they were going to read a fiction book. They sighed, slumped in their chairs, and put their hands on their faces (Male 1 was more willing to read the fiction books than Male 2). NWEA scores for the male group showed inconsistencies. Reading records showed inconsistencies as well, but the students stayed within their independent and instructional levels of reading. Student attitudes towards the text seemed to be linked to reading record progress. The students’ benchmarks scores increased by one reading level from the beginning of the data collection process until its end.

<table>
<thead>
<tr>
<th>M1</th>
<th>Book Choice</th>
<th>Benchmark</th>
<th>Reading NWEA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nonfiction</td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level O</td>
<td>185/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level P</td>
<td>192/197 (DNP) +7</td>
</tr>
<tr>
<td>M2</td>
<td>Nonfiction</td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level O</td>
<td>187/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level P</td>
<td>193/197 (DNP) +6</td>
</tr>
</tbody>
</table>
Female Group

The female group showed mixed feelings on reading genre reference. F1 preferred non-fiction and F2 preferred fiction. Females complied with reading both types of books and seemed to find some enjoyment in each. The female group’s NWEA scores showed overall improvements from the fall to winter scores. Reading records showed inconsistencies, and attitudes towards the text seemed to be linked to reading record progress. Benchmarks showed growth with F1 improving by one level and F2 improving by two levels.

<table>
<thead>
<tr>
<th></th>
<th>Book Choice</th>
<th>Benchmark</th>
<th>Reading NWEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Nonfiction</td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level O</td>
<td>182/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level P</td>
<td>196/197 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+14</td>
</tr>
<tr>
<td>F2</td>
<td>Fiction</td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level O</td>
<td>185/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level Q</td>
<td>200/197 (Pass)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+15</td>
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</tbody>
</table>
Mixed Group

This group was mixed on reading preference and progress. Choice activities were given and progress seemed to be linked to the students' attitudes. NWEA scores showed improvements in the females from fall to winter and a decrease in the male's fall to winter scores. Reading records showed inconsistencies but fell within their independent and instructional ranges. The female's benchmarks showed an increase by one to two reading levels, while the male's benchmark score stayed the same.

<table>
<thead>
<tr>
<th>Book Choice</th>
<th>Benchmark</th>
<th>Reading NWEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3</td>
<td>Fiction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td>Level N</td>
<td>181/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td>Level O</td>
<td>196/197 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+15</td>
</tr>
<tr>
<td>F4</td>
<td>Fiction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning: Level O</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td>End:</td>
<td>187/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td>Level Q</td>
<td>Winter 12-13:</td>
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<tr>
<td></td>
<td></td>
<td>196/197 (DNP)</td>
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<tr>
<td></td>
<td></td>
<td>+9</td>
</tr>
<tr>
<td>F5</td>
<td>Nonfiction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning:</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td>Level O</td>
<td>189/197 (DNP)</td>
</tr>
<tr>
<td></td>
<td>End:</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td>Level P</td>
<td>199/204 (DNP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+10</td>
</tr>
<tr>
<td>M3</td>
<td>Nonfiction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning: Level N</td>
<td>Winter 11-12:</td>
</tr>
<tr>
<td></td>
<td>End:</td>
<td>183/189 (DNP)</td>
</tr>
<tr>
<td></td>
<td>Level N</td>
<td>Winter 12-13:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>165/197 (Pass)</td>
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<tr>
<td></td>
<td></td>
<td>-18</td>
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</table>
Observations of a Fully Implemented Gender-Based English/LA Program

Because of my interest in gender-grouping and wanting more insight into how it worked, I went to observe four, gender-based classes in a local middle school after my data had been collected and analyzed. This gender-based program had to be researched and presented to the school board for approval. These groupings have been in place for a few years now and the educators reported that the program has been very successful. Unfortunately, I could not use this information in my final research conclusions.

The first group had males with lower performing scores and reading levels with teacher A. This class had many of the students with IEPs. The second group had females with lower performing scores and reading levels with teacher B. This class also had many of the students with IEPs. The third group had males with higher performing scores and reading levels with teacher B, and the fourth had females with higher performing scores and reading levels with teacher A. All of the students were in the 6th grade.

During the first group, I noticed many of the male students were moving as soon as they entered the room. They would dance in their seats and walk around the room to talk to other students. They seemed to be happy and would laugh often. The teacher started the day by discussing data and concrete information. She talked in a loud, clear voice. She would also walk around the room while teaching. She discussed some of the past
readings with the boys and there seemed to be good conversation taking place. The books she discussed were high-interest, nonfiction books. Students were given choices and activities were short and direct. The students had many opportunities to move around the room. Students were also using iPADS and smart boards to demonstrate their learning. The teacher communicated that this group would spend a big amount of time getting organized, as this was essential to learning. She also stated that this group had a difficult time working in groups.

The second group, or male students with higher abilities, demonstrated many of the same behaviors as the first group. The students seemed to want to dance and move around often. They did not come in the room and sit in their seats but visited with each other. When the teacher instructed them to go to their seats, they were compliant. The teacher stated that she would also teach this group using controlled movement activities. These students were also given choices and seemed to enjoy being in the class with other males. Teaching strategies for the male groups included talking in a loud, direct voice, giving the males choices, short activities, movement, technology, and visual timers for competition.

The third group included the lower performing females. The curriculum for the female groups was not changed, just the teaching strategies. This group was smaller than both of the male groups. The students were seated in rows and were being very respectful to the teacher.
The teacher used humor with this group and talked in a steady voice. The teacher was very honest with the students. These girls liked to talk and share their thoughts and would do so often to demonstrate their learning. The girls were able to sustain their attention on activities longer and seemed to enjoy using the iPADS.

The fourth group, the higher performing females, was seated in learning clubs in groups of four. The teacher reported that the students were grouped differently every week, depending on data. These are known as flexible skill groups. This class worked together in teams to demonstrate their learning. Teaching strategies for the females included using a calm speaking voice, giving the students more independence, and using specific motivators linked to interest. Students were allowed to share their thinking in partners and/or groups, and even though the curriculum was not changed, many of the books being read included females as the lead role.

The females commented that they had fewer distractions in class, could concentrate more on their work, felt more comfortable sharing their answers because there was no threat of being judged, and could get more accomplished. They enjoyed the topics and books that were introduced in class and the female-based subject matter. They shared that they “loved” the gender-based learning environment and wished they could have more of those types of classes.
Effectiveness of Gender-Based Teaching versus Differentiation:

Conclusion of Study

✓ Data from this specific action research did not prove or disprove the effectiveness of gender-teaching or grouping.

✓ Student scores were inconsistent and the study, like most, had a variety of restrictions and limitations.

✓ The data did show that girls performed better than the boys, and that all students but one showed some growth.

✓ Attitudes and activities linked to the books affected students’ perceptions and choices.

✓ There were both males and females that preferred the other gender’s activities to theirs and some stereotypes of students’ preferences were disproven.

✓ Due to these results, one may conclude that true differentiation is always best practice teaching and other programs, such as gender-teaching or grouping, can be effective ways to support that.
Important Page Numbers
Chapter Four

The Importance and Implementation of Differentiation
The Importance and Implementation of Differentiation

Taking gender into consideration may not meet all of the students’ educational needs. Brain research and Gardner’s Multiple Intelligences have helped enlighten teachers about the way students learn and the different aspects that may influence learning (Dacey & Lynch, 2007). Differentiation may play an extremely important role in helping low performing students learn to their fullest capacity while eliminating bias.

Two goals of differentiation are mastery of standards and the accommodations given to achieve mastery (Lawrence-Brown, 2004). Types of accommodations may be giving students extra time, allowing choice, breaking students into ability groups, having reading material at appropriate levels, and having various ways to test progress (Levy, 2008). Other accommodations include using assistive technology, personal assistance, structure, task analysis, and adaptations to the curriculum (Lawrence-Brown, 2004).

When utilizing differentiation in the classroom, there are methods that should be followed. The areas include content, process, product, and learning styles and interests (Levy, 2008). According to Levy (2008), content is based on the state standards that our government has deemed appropriate. In the past, teachers decided what, when, and how academics were taught. Now that our curriculum is based on standards, educators are
accountable to make sure each student has an equal chance at succeeding. This can be difficult when there are so many different learning styles (Levy, 2008).

Levy (2008) stated that the process of teaching includes the strategies educators use and the way students acquire the knowledge that is being presented to them. All students have different interests and avenues for learning. Research has shown that it is important for educators to use differentiation to meet students’ unique needs (Levy, 2008). Lessons should be of high interest, strive for “active learning”, and incorporate Howard Gardner’s Multiple Intelligences. Additional supports should also be used for students who have the ability to access the grade level curriculum but need certain accommodations to be successful (Lawrence-Brown, 2004).

Research has established that math and reading should be taught in a variety of ways to all students, and the human brain looks for patterns while trying to acquire skills. Teaching one technique to all students in a whole group setting does not address the unique needs of all individuals. In addition, this type of teaching does not always reach the high ability or struggling students. Frustration levels may lead to inappropriate behaviors in the classroom (Bender, 2005). Just as differentiation can lessen frustration levels, it can help to promote positive attitudes and confidence.
Description of Subsequent Pages

The following pages were taken from a variety of authors from Staff Development for Educators and were deemed as free resources. All of the pages list valuable ways to incorporate differentiated instruction in the classroom. The first page is taken from SDE and describes that all it takes is one student to get started. The second page discusses the positive aspects of differentiated instruction and why it should be used. The third page describes the seven building blocks of differentiated instruction and provides a nice visual. Some of the other pages list traits of quality teachers, curriculums, and learning environments. Other pages emphasize the importance of managing learning time and instructional delivery. The final page, taken from Winebrenner, provides Bloom’s Taxonomy vocabulary or “trigger” words to use to promote synthesis, evaluation, analysis, application, comprehension, and knowledge.
Getting Started

Start small...one student at a time

- Compact one curriculum concept for one student.
- Tier one lesson for one subgroup of learners.
- Anchor one group of 4 students for 20 minutes.
- Use authentic assessment tools to establish an entry point for one student.
- Use authentic evaluation tools to document one student's academic progression.
- Make one curriculum modification for one or two students.
- Make one instructional accommodation for one or two students.
- Make testing accommodations for students with identified learning disabilities.
Positive Aspects of Differentiated Instruction (DI)

1. DI strategies and practices are doable for most teachers.
2. DI is low cost. Minimal funding is required.
3. It invigorates teachers and builds their confidence.
4. Most high-quality teachers are already engaged in DI to some degree.
5. DI works for the full range of students.
6. No additional physical space is required for implementing DI in the classroom.
7. DI requires a reasonable amount of training.
8. The DI practice can be easily implemented.
9. Adoption of DI does not require any bureaucratic procedure or permission.
10. DI creates synergy with best classroom practices.
11. It brings out the student advocate side of teachers.
12. DI negates tracking students by their ability.
13. Students in a DI classroom feel an increased sense of school community and a broader range of friendships.
14. DI makes full inclusion a reality.
15. It is not a packaged program to be adopted, or a curriculum add-on.
16. DI is the most viable way to help the diverse range of learners meet high standards.
The 7 Building Blocks Of Differentiated Instruction

1. Knowing the Learner (Keystone)
2. Quality Teacher (Cornerstone)
3. Quality Curriculum (Foundation Stone)
4. Classroom Learning Environment
5. Flexible Teaching and Learning Time Resources
6. Instructional Delivery & Best Practices
7. Assessment/Evaluation/Grading

DI Framework in progress by Char Forsten, Jim Grant, & Betty Hollas
www.differentiatedinstruction.com
Traits of a Quality Teacher (Cornerstone)

Taking Stock:

1. Believes all students can learn
2. Has the desire and capacity to differentiate curriculum and instruction
3. Understands diversity and thinks about students developmentally
4. Has experience teaching several different grade levels
5. Is a risk-taker
6. Is open to good change and is well-versed in best practices and strategies
7. Loves hard work and long hours
8. Is comfortable challenging the status quo
9. Knows what doesn’t work
10. Is not a “consumer of fads”
11. Is a high energy person
12. Has good common sense and is skilled in logic
13. Is able to withstand staff dissension that may arise
14. Is tenacious

OTHER:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollas
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-9624 • www.sde.com
Quality Curriculum (Foundation Stone)

Taking Stock:

1. Is of high interest to the students
2. Is relevant to the students’ lives
3. Has an appropriate level of challenge
4. Has an appropriate level of complexity
5. Is thoughtful and provoking
6. Is sequenced to optimize learning
7. Is focused on concepts and principles and not just facts
8. Is focused on quality not quantity
9. Has depth of learning — NOT just coverage is stressed
10. Is vertically aligned

Other:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollis
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-9621 • www.sde.com
Classroom Learning Environment

Taking Stock:

1. Create a balanced student population.
2. Insure appropriate grade/program placement.
3. Provide priority seating arrangement based on student needs.
4. Maintain a reasonable class size.
5. Make sure positive discipline is practiced.
6. Arrange furniture to promote group work.
7. Create student traffic patterns that work (furniture arrangement).
8. Provide anchor activities.
9. Provide sponge activities.
10. Use quality curriculum materials.
11. Keep adequate teaching supplies on hand.
12. Use flexible grouping practices.

OTHER:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollas
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-9621 • www.sde.com
Differentiating Teaching and Learning Time
Adjusting our most important instructional resource—learning time

Taking Stock:
1. Provide all-day kindergarten.
2. Provide a pre-kindergarten program (at-risk 3 and 4 year olds).
3. Implement transitional programs/grades (i.e., pre-k, pre-1st, pre-2nd, pre-3rd).
4. Offer grade-level retention (extra learning time to complete a grade level).
5. Modify the school calendar by:
   - lengthening the school day
   - extending the school year
   - offering school during intercessions
   - changing to a year-round school calendar
7. Hold school on Saturdays and during intercessions.
8. Offer homework clubs.
9. Provide before/after school programs.
10. Provide tutoring/remediation within school.
11. Implement block scheduling.
12. Implement team teaching.
13. Provide summer school opportunities.
15. Engage in "subtractive" education (reduced curricula volume).

OTHER:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollas
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-9621 • www.sde.com
Instructional Delivery and Best Practices

Taking stock:

1. anchor activities
2. sponge activities
3. KWL
4. Q-A-R
5. think-pair-share
6. literature circles
7. text response
8. individual contract
9. curriculum compacting
10. tiered assignments
11. web quests
12. learning centers
13. learning stations
14. cooperative learning
15. flexible grouping practices

OTHER:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollas
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-9621 • www.sde.com
## Differentiated Instruction - Bloom’s Taxonomy

Use the trigger words in this table to modify question frames at each level to suit the topic or subject at hand.

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Trigger Words</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesis</td>
<td>Re-form individual parts to create a new whole</td>
<td>compose, design, invent, create, develop, formulate, generate, devise, organize, revise, summarize, make up, modify, plan, predict, imagine, hypothesize, combine from several sources, what would happen if...</td>
<td>lesson plan, song, poem, ad, invention, story, book, picture, machine, model, etc.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Judge value of something in terms of a set criteria and support judgment</td>
<td>judge, evaluate, assess, criticize, interpret, appraise, discriminate, defend, explain, conclude, interpret, prioritize, support, weigh, recommend, critique, give opinion, choose, what to do differently, rate (best, worst, etc.)</td>
<td>rating, editorials, debate, critique, defense/verdict, etc.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Understand how parts relate to whole</td>
<td>investigate, classify, analyze, breakdown, separate, distinguish, relate, categorize, compare, contrast, solve, diagram, simplify, differentiate between, alike, different, cause and effect, relevant, irrelevant, find fallacies</td>
<td>survey, questionnaire, plan, solution, report, prospectus, etc.</td>
</tr>
<tr>
<td>Application</td>
<td>Transfer knowledge learned in one situation to another</td>
<td>demonstrate, use what you know in another place or situation, apply, compute, manipulate, solve, predict, relate, prepare, maps, charts, build, cook</td>
<td>recipe, model, artwork, demonstration, crafts, etc.</td>
</tr>
<tr>
<td>Comprehension</td>
<td>Demonstrate basic understanding of concepts and curriculum</td>
<td>restate in your own words, give, comprehend, estimate, paraphrase, give examples, explain, summarize, translate, show symbols, edit, calculate, project, explain, interpret, qualify, change</td>
<td>drawings, diagrams, respond to questions, revision, etc.</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Ability to remember something previously learned</td>
<td>tell, recite, list, memorize, remember, name, recognize, define, locate, label, outline, recall, state, write, arrange, identify</td>
<td>workbook pages, quizzes, tests, exams, vocabulary, facts in isolation, etc.</td>
</tr>
</tbody>
</table>

(Winebrenner, 1992)
Chapter Five

Strategies and Accommodations for Struggling Students
Strategies That Can Be Used With Struggling Students

Many of our low performing students or students with IEPs struggle with the reading curriculum. For various reasons, we are seeing difficulties in these students’ abilities to acquire and apply many of the skills needed to be successful in the classroom and on standardized tests. There are many supplemental tools and programs that have been used to promote student success and support students’ learning. The following are a few programs that have been used and implemented with struggling students and do not necessarily reflect the opinions of this handbook.

Leveled Literacy Intervention

www.heinemann.com/fountasandpinnell/lli_Overview.aspx

Leveled Literacy Intervention is a research-based reading program developed by Fountas and Pinnell. This reading program focuses on the cornerstones of reading development. Each lesson fits a two day time span and focuses on fluency reads (re-read), phonemic awareness, challenge reading (new book at instructional level), word work, writing, and comprehension. Students are continuously monitored using reading records. Lessons include high-interest books and extension activities. There is an orange, blue, green, and red system to meet various learners’ needs. These programs are meant for direct instruction in a one to one or small group setting (up to three students).
Suggested Leveled Literacy Instruction Lesson Plan

The following is a sample lesson plan from the Leveled Literacy Intervention: Red System Program Manual. Each lesson is designed to fit a 45 minute session and is broken down into two days. This is the framework for **day one**.

**Discussion of Yesterday’s New Book:** Five minutes

**Revisiting Yesterday’s New Book:** Comprehension, vocabulary, and/or fluency – five minutes each

**Phonics/Word Study:** 10 minutes

**Reading New Book (Instructional Level):** Introducing the text, reading the text, discussing and revisiting the text, teaching point – 25 minutes

The following is a sample lesson plan from the Leveled Literacy Intervention: Red System Program Manual. Each lesson is designed to fit a 45 minute session and is broken down into two days. This is the framework for **day two**.

**Revisiting Yesterday’s New Book:** Comprehension, vocabulary, and/or fluency – five minutes each

**Rereading and Assessment (Running Record):** five minutes

**Writing About Reading:** 15 minutes

**Phonics/Word Study:** 10 minutes

**Reading New Book (Independent Level):** Introducing the text and rereading the text – 10 minutes
Lindamood-Bell

www.lindamoodbell.com

Lindamood-Bell is a supplemental reading program developed by Nanci Bell and Patricia Lindamood. These programs focus on teaching the learner new ways to acquire reading and math skills. A few of the programs are LiPS© and Seeing Stars©. These programs are meant for direct instruction in a one to one or small group setting.

Morgan Phonics

www.dynamicphonics.com/index.htm

Kenneth Morgan developed the Morgan Phonics program based on Orton Gillingham techniques. This program incorporates humor and high-interest materials to help promote acquisition of phonics skills.

Orton Gillingham

www.ortonacademy.org/approach.php

Orton Gillingham is a program with various instructional strategies that are appropriate for individuals struggling with reading and writing due to dyslexia or other reading disabilities. These strategies were developed from the contributions of Samuel T. Orton and Anna Gillingham. It is meant for direct instruction in a one to one or small group setting.
SuccessMaker

www.pearonschool.com/index.cfm?locator=PSZk99

SuccessMaker is a software program that can be used as a supplemental tool for Reading and/or Math. Skills are at the students' levels and progress can be monitored by the teacher. Specific activities can also be chosen for students to review and practice. Charts and graphs can be printed off for student data files. Students must have access to a computer and the internet and schools must have a license to use this program.

Tucker Signing

www.tuckersigns.com

Tucker Signing is a kinesthetic method similar to American Sign Language that is used to help students learn letter-sound associations. Bethanie H. Tucker, Ed.D. developed this method while working with students and observing how they learn. It is used as a supplemental teaching tool in many schools across the United States. This program boasts that the 44 hand signals can be taught to most students in two, 45 minute sessions.
Types of Accommodations

There are various types of accommodations that help struggling students and students with IEPs access the general education curriculum. Students with IEPs can have specific accommodations for standardized tests. Accommodations should be used to level the learning “playing field” for our students with IEP’s. The accommodation categories include timing/scheduling, response format, setting and environment, and presentation format. They should be used on tests and assignments as needed. Some of the students may need shortened assignments/tests or more time to complete a task. Other accommodations may be given to struggling students without IEPs.

Please Remember:

✓ "What's equal is not always fair, and what's fair is not always equal."
  - Unknown

✓ Accommodations Should Be Used on A Regular Basis!
✓ Document! Document! Document!

Accommodations Appropriate for ISTEP

These types of accommodations are appropriate for students with Individualized Education Plans who are taking ISTEP. They must be used in the classroom on a regular basis. Each of these accommodations is picked to promote a student’s IEP and should reflect the individualized needs of the student.
ISTEP Accommodations for Students with IEPs

**Timing / Scheduling:**

Test administered in several sessions

Longer breaks between sessions

Student provided with additional breaks

Student is provided with extended testing time for test sessions

**Response Format:**

Student uses lined paper turned sideways to help align math problems

Student is allowed to use low-tech assistive writing instrument

Student is allowed to use alternative indication of response (i.e., circle, point to, state, or otherwise indicate answer choice)

Student has access to scribe for all open-ended items (e.g. constructed response, extended response, short response, and essay)

Student has use of a computer or other assistive technology (AT) device

Student has use of a calculator during sessions identified as non-calculator sessions

Student has use of an approved, bilingual word-to-word dictionary

**Setting and Environment:**

Student is allowed to use headphones to block out distractions - no music, headphones are sound dampening only

Student is provided special lighting conditions
Student is tested individually

Student is provided preferential seating

Student tested in small group setting

**Presentation Format:**

Student allowed use of special furniture or equipment for viewing test

Student allowed to use assistive technology to magnify/enlarge

Student allowed to use acetate film

Student provided access to sound amplification system

Student provided access to large print version of test

Student provided access to own resources (i.e., bold print protractor, real coins, bold/raised line graph paper, bold/raised line writing paper)

Student uses a Braille test format

Student provided access to an interpreter for sign language

Student provided access to a talking/screen reading device (can NOT be used for reading comprehension portion of test)

Student reads aloud to him or her self

Test read aloud to the student by test administrator (except items testing comprehension)

Accommodation list from IIEP and Indiana Department of Education

www.learningconnection.com and www.doc.in.gov
Additional Examples of Accommodations Appropriate for All Students

That Can Be Used in the Classroom

✓ Visual/Verbal Models and Reminders
✓ Timers
✓ Graphic Organizers
✓ Manipulatives
✓ Repeated Directions/Extra Examples
✓ Assistive Technology
✓ Colored/Tinted Overlays for Reading
✓ Whisper Phones for Reading (made from plastic piping)

All of These Ideas are Various Ways to Differentiate Within the Classroom!
Equal and Fair Are Not the Same: Classroom Issues of Fairness
Contributed by C. J. Butler, York County Public Schools

Educational professionals frequently struggle with the concepts of fair and equal. With the increase in student diversity and the expectation for differentiated instruction, issues surrounding fairness are more evident than ever. Educational professionals often experience interpersonal conflicts around issues of fairness. Fair and equal are certainly not the same thing. What is fair for one student may not be fair for another. The issues of fairness are complex, often the definition is not congruent, there are external factors that influence our interpretation of fairness, and educational professionals frequently do not establish conditions for fairness.

Duetsch (1975) provided three distinctly different definitions of fairness: equality, equity, and need. Equality by definition is treating everyone the same, and there are instances when this definition is applicable, such as everyone gets a vote. Equity suggests that consequences, both rewards and punishment are proportionate to product. An example of equity is all children are taught to write but the gifted poet is celebrated. The third definition is based on need. Accommodations and supports are provided, not to everyone (equality) or to only the best (equity), but to those that need them to be successful. To fully understand the issues of fairness, educational professionals must first understand these definitions.

Cultural, linguistic, and ability differences are factors that influence fairness in the classroom. Students come from varied background and have differing abilities. For example, students from more cooperative cultures will place a greater value on equality, while students from a more competitive culture understand equity as fair. These differences present challenges to educational professionals in their effort to create successful environments for all students. Enright and his colleagues (1984) identified the following developmental stages in understanding fairness:
1. The person who wants something the most should get it.
2. Decisions are based on external circumstances—it is fair to give something to the tallest or oldest person, etc.
3. Everyone should get the same amount.
4. The person who works the hardest should receive more.
5. The person who needs more should receive more.
6. Children realize the importance of both effort and need and seek a compromise between the two.

Welch (2000) offered the following “fair” strategies for teachers to use in the classroom:
- Reflect back the student’s feelings—allow students to express their feelings and deal openly with the issue.
- Listen for other meanings—complaints often signal the student’s need, it is less about what others receive but rather what the student needs.
- Offer something special—rather than trying to explain why one person gets something that others do not, make the reward available to all based on their individual skills and performance criteria.
- Respond to “it’s not fair...” consistently and without explanation—justification is not needed, students will quickly learn from a consistent teacher response.
- Teach different types of fairness—students can easily relate to the concept of fairness when it applies to everyone.
- Provide a procedure for lodging complaints—students need to be able to discuss these issues.
- Develop a caring, cooperative classroom community.
- Provide, teach, and enforce school-wide procedures.
- Ensure the appropriate use of accommodations and supports for students.

The responsibility for addressing the issue of fairness is shared among families, educational professionals, and students. In order for students to have a more full understanding that fair does not always mean the same, we must teach and model this concept.

References
Chapter Six

Strategies and Assessments That Promote Positive Attitudes and Relevance in Learning
Strategies That Promote Positive Attitudes and Relevance in Learning

Learning Inventories and Interest Surveys

In order to promote student success and differentiate instruction, it is important to know the learner’s background, learning styles, and interests. Getting this information does not have to be difficult. There are many free learning style inventories, interest surveys, and assessments that can assist educators in gathering this type of student data. Having this information will help the educator plan lessons that are high-interest and relevant to the student—a key to student success! Students will want to be active in the learning process if they feel their thoughts and interests are considered.

According to Smith and Wilhelm (2004), it is also essential for students to feel confident in what they are learning and to be given immediate feedback. Attitudes and feelings of competence should also be taken into consideration and are closely linked to student success (Logan & Johnson, 2009).

The subsequent pages in this chapter are resources to help educators promote student engagement in the classroom. A few of the pages are taken from Staff Development for Educators and describe the importance of knowing the learner, implementing a relative curriculum, and using a variety of assessments. They also provide educators with examples on how to accomplish these tasks. The remainder of the chapter includes examples of interest and learning surveys taken from a variety of resources.
Knowing the Learner (Keystone)

Taking stock:

1. Chronological age
2. Gender
3. Socio-economic level
4. Learning styles
5. Learning pace/rate
6. Handedness
7. Multiple intelligences
8. Personal qualities such as: personality, temperament, motivation, intentions, persistence
9. Personal interests (likes & dislikes)
10. Ability level(s)
11. Potential learning disabilities/handicapping conditions
12. Health and well-being
13. Family circumstances
14. English language learner (ELL)

OTHER:
Quality Curriculum (Foundation Stone)

Taking Stock:

1. Is of high interest to the students
2. Is relevant to the students' lives
3. Has an appropriate level of challenge
4. Has an appropriate level of complexity
5. Is thoughtful and provoking
6. Is sequenced to optimize learning
7. Is focused on concepts and principles and not just facts
8. Is focused on quality not quantity
9. Has depth of learning — NOT just coverage is stressed
10. Is vertically aligned

Other:

A Framework for Understanding the Seven Building Blocks of Differentiated Instruction
Char Forsten • Jim Grant • Betty Hollas
Staff Development for Educators
10 Sharon Road, Peterborough, NH 03458
1-800-924-8621 • www.sde.com
How Do I Learn?

Place a check (✓) in all the blanks that describe you. The list with the greatest number of checks is how you like to learn best.

Visual Learning Style

1. I remember best by writing things down or drawing pictures.
2. I ask for directions to be repeated.
3. I like to read about something rather than hear about it.
4. I am a good speller.
5. I like to learn with posters, videos, and pictures.
6. I am good at reading maps and graphs.
7. When someone is talking, I create pictures in my mind about what they are saying.
8. After school, I like to read books.
9. I like it when my teacher uses lots of pictures when teaching.
10. I can remember something if I picture it in my head.

How many checks (✓) did you have?

Remember to place a check (✓) in all the blanks that describe you.

**Auditory Learning Style**

1. I remember best if I hear something.

2. It is easier for me to listen to a story on tape than to read it.

3. I understand better when I read out loud.

4. I follow spoken directions well.

5. I like to sing or hum to myself.

6. I like to talk to my friends or family.

7. Music helps me learn things better.

8. I can easily remember what people say.

9. It helps when the teacher explains posters or pictures to me.

10. I can remember more about something new if I can talk about it.

How many checks (✓) did you have?

Remember to place a check (✓) in all the blanks that describe you.

**Tactile/Kinesthetic Learning Style**

1. I remember best if I can make something that tells about what I am learning.
2. I would rather play sports than read.
3. I like playing card or board games to learn new things.
4. I like to write letters or write in a journal.
5. I like it when teachers let me practice something with an activity.
6. I like putting together puzzles.
7. If I have to solve a problem, it helps me to move while I think.
8. It is hard for me to sit for a long time.
9. I enjoy dancing or moving to music.
10. I like to act things out to show what I have learned.

**How many checks (✓) did you have?**
Tell Me . . .

Which list had the most (√) checks? ________________

Which list had the fewest (√) checks? ________________

Did you have any lists that had the same number of (√) checks? ________________

If so, which ones? ________________

Do you think the list that had the most checks (√) tells how you like to learn best? ________________

What Does It Mean?

**Visual Learning Style**

- Pictures help you learn.
- Seeing things helps you organize your thoughts and remember things.
- You think in images or pictures.

**Auditory Learning Style**

- It helps for you to talk out loud.
- Sound and music help you learn.
- You learn best when you hear things more than once.

**Tactile/Kinesthetic Learning Style**

- It helps you to use your body, hands and sense of touch to learn new things.
- Writing, drawing and movement help you remember important things.
- You like to show what you have learned by demonstrating or making projects.
Reading Interest Inventory

Your Name ___________________________ Date ________________

Directions: Please follow the directions and answer honestly.

Titles
Directions: Please list three books you enjoyed reading last year.

Reading Preferences
Directions: Rank the following genres in order from your favorite to least favorite. (1 = favorite, 8 = least favorite)

____ Mystery                      ____ Science Fiction
____ Romance                     ____ Biographies / Autobiographies / Memoirs
____ History                     ____ Science
____ Humorous                    ____ Action/Adventure

____ Other

What magazines do you read?

________________________________________________________________________
________________________________________________________________________

Do you read a newspaper? Yes____ No____

Which parts? ______________________________________________________________________

How often do you go to the public library? Every week ____ 1-2 times a month ____

2-4 times a year ____ Never ____

Arleen P. Mariotti
Interest Inventory

Name ___________________________ Date ______________

1. What is the name of your favorite book?

2. What do you like to do after school?

3. What do you like to do on Saturday?

4. Do you like to read for fun? Yes ____ No ____

5. What sports do you like to play?

6. What is your favorite subject in school?

7. Of the types of books listed below, which ones do you like to read for fun?
   
   Sport stories ____
   Adventure stories ____
   Stories about people ____
   Funny stories ____
   Mystery stories ____
   Stories about real events/people ____
   Poetry ____
   Other :

8. If you could pick two books to have in your library, what would they be?

Arleen P. Mariotti
Reading Interest Inventory

Name_________________________ Date________________

I like to read. (circle) YES NO SOMETIMES

I like to read the following:

fantasy mysteries science fiction
horror plays poetry
manga comic books myths
biographies informational series
graphic novels humorous books action stories
magazines newspaper true stories

My favorite author is ___________________________ because ___________________________.

My favorite book is __________________________________________

because __________________________________________

My favorite magazine is __________________________________________

because __________________________________________

Arleen P. Mariotti
What gives you the most problems when you read? 

What book would you like to read this year? 
Why? 

What book have you read and disliked? 
Why? 

Finish the sentences: 

I read best when I 

I believe reading is important because 

Arleen P. Mariotti
My Feelings About Reading

Name ___________________________ Date ________________

<table>
<thead>
<tr>
<th>YES</th>
<th>SOMETIMES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I like to read</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>2. I read at home.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>3. Reading is hard for me.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>4. I like picture books.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>5. Reading is fun.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>6. I like to read long stories.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>7. I like someone to read to me.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>8. Reading is boring.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>9. I am a good reader.</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>10. I like the stories we read in school.</td>
<td>__________</td>
<td>______</td>
</tr>
</tbody>
</table>

Arleen P. Mariotti
Student Interest Survey

1. The three things that I do best in school are:
   1. 
   2. 
   3. 

2. Some of the things that I would like to work on this year are
   
   
   
   

3. I would like to learn more about __________________________

   
   

4. Outside of school, my favorite activity is __________________________

   
   

5. My hobbies are __________________________

   
   

6. The clubs, organizations or private lessons that I participate in are ____

   
   

7. My favorite sport is __________________________

   

8. The sports that I play in and out of school are __________________________

   

www.daretodifferentiatewikispaces.com
9. My three favorite books are:
   1. __________________________
   2. __________________________
   3. __________________________

10. One of my favorite authors is ____________
    because__________________________

11. If I could choose between watching television,
    playing video games or using the computer, I would
    pick_____________________________ because_______________________________

12. I enjoy these types of reading: (circle those that apply)
    Story Books    Craft/Games/Puzzles
    Fiction        Fairy Tales
    Non-Fiction    Geography
    Comics         Sports

13. The person that I consider to be a hero is ________________________________
    because_________________________________________________________________

14. I have traveled to_______________________________________________________
    If I could pick a place to travel to, I would choose_________________________

15. Some of the chores and responsibilities that I have at home are ________

16. Three of my friends are: _____________________________________________
    When I am with my friends we like to_____________________________________

17. Something about me that I'd like to share with you
    is____________________________________________________________________
Student Interest Survey

Please print as neatly as possible!

Name: ___________________________ Birthday: _______________________

Adults who live with me:

Name __________________________________________
Name __________________________________________

Brothers and sisters:

Name __________________________________ Age ______
Name __________________________________ Age ______
Name __________________________________ Age ______
Name __________________________________ Age ______

(If you have more than four, please list others on the back of this sheet.)

Special friends: ________________________________
_________________________________________________________________

What I like to do most at home: _______________________
_________________________________________________________________

My favorite hobbies: _______________________________
_________________________________________________________________
Student Interest Survey (Page 2)

My favorite book(s) and magazine(s):

If I had one wish, it would be...

School would be better if...

If I had a million dollars, I would...

One thing that I am really good at is...

I do my best thinking when...

This is what one of my teachers did last year that I liked the most:

This is what one of my teachers did last year that I liked the least:
Student Interest Survey (Page 3)

After I graduate, I want to...

____________________________________________________________________________________

____________________________________________________________________________________

Something else that I want you to know about me is...

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

My All-Time Favorites:

☐ candy:________________________________________

☐ movie:________________________________________

☐ song:________________________________________

☐ musical group:________________________________

☐ type of pizza:________________________________

☐ color:_______________________________________

☐ car:________________________________________

☐ professional athletic team:____________________

☐ style of clothing:_____________________________

☐ vacation place:_______________________________

☐ board game:________________________________

☐ radio station:_______________________________

☐ TV show:___________________________________

☐ outdoor activity:_____________________________
Multiple Intelligence Survey for Kids

By Laura Candler
www.lauracandler.com

Teaching students about multiple intelligence theory can be very empowering, especially when you administer a survey to help them find out their own strengths. But most online survey tools are too long and complex for kids. So I created the quick and easy classroom version that's on page 3 of this packet. I included an example of a completed survey on page 4 so you can see how it works.

The Multiple Intelligence Survey for Kids is part of my ebook Teaching Multiple Intelligence Theory: Step-by-Step Lessons for the Intermediate Grades. If you aren't familiar with Howard Gardner's theory, you'll find that ebook a good place to start. You can also find more resources on this topic on the Multiple Intelligences page on Teaching Resources at www.lauracandler.com/strategies/multipleintelligences.php.

Before you use the survey with students, please read the information on the next page entitled “Before Administering the Survey.” Multiple Intelligence surveys are not very powerful when used to identify and celebrate strengths, but I believe that much harm will be done if educators use them as a tool to diagnose weaknesses. Also, remember that this survey is something I created to use with my students. While I've found it to be very effective, it's not research-based or scientific so the results should not be over-analyzed.

Because the survey can be a bit confusing to use, I created a video slidecast to explain exactly how to administer it to students as well as some cautionary words about what to do with the results. If you have not yet watched the video, please do so before using the materials. You can watch the video directly from the Multiple Intelligences page on Teaching Resources on YouTube at http://youtu.be/J4U1nN1ePCm

Be sure to take the survey yourself before you use it with students. Taking it yourself will help you determine the best way to present it to your students, and you'll learn about your own strengths, as well!

For more resources for teaching your students about Multiple Intelligence theory, please visit the MI page on Teaching Resources at www.lauracandler.com/strategies/multipleintelligences.php.
Before Administering the Survey

Before using the Multiple Intelligence Survey with your students, please read this information carefully.

- **Teacher Knowledge** - Teachers who use this survey should have a solid understanding of Howard Gardner's Multiple Intelligence theory. While the overall concept is fairly simple, the details are more complex. For example, people who are "Art Smart" may not seem very artistic, but their intelligence reveals itself in other ways such as being able to visualize what they are learning or the ability to interpret maps, charts, and graphs easily. Having a deeper understanding of each area will help you answer your students’ questions and guide them as they explore the concepts. If you are not familiar with Multiple Intelligence theory, visit the Multiple Intelligence Theory page on Teaching Resources for some excellent links and resources: www.lauracandler.com/strategies/multipleintelligences.php

- **Student Survey Results** - The student survey is not scientific or researched-based in any way. To keep it simple for students, I wrote only three descriptive statements for each of the eight areas. As a result, the survey may not be an accurate assessment for many students. Also, because it relies on students to answer the questions honestly, the results are only as accurate as students are able to reflect on their skills honestly.

- **Diagnosing Weaknesses** - The survey and materials are NOT intended to diagnose weaknesses. Just because a student scores low in an area does not mean it’s actually a true weakness. For example, a student may not score high in the musical area, but that could be because he or she has not had opportunities to develop these skills. Recent research has shown that our brains are constantly evolving and changing as we learn and grow; it would be a great disservice to proclaim that a student is weak in a particular area and to imply that he or she has no hope of improving! For example, students who score low in math should not assume they will never be good in math – maybe they need to activate different pathways to understanding math such as through music or movement. Understanding our strengths and weaknesses can help us improve and grow in all areas.

- **Parental Awareness** - Consider how you will share this information with parents. Instead of sending the survey home, you may want to share it during a parent-teacher conference where you can explain multiple intelligence theory in more detail. Be sure they know that the survey is not scientific and is simply a way to discover how each child learns best. Make sure they understand that an area of “weakness” does not mean that the child will never be good in a particular area. It also does not mean that the parent should relentlessly drill the child to improve! We all learn best through our strengths, so a more appropriate response would be to figure out how to teach the material in a way that capitalizes on their child’s strengths.

If you have read these cautionary words and watched the video, it's time to get started! Remember to take the survey yourself to see how it works!
**Getting To Know You Survey**

**Directions:**
Fold the paper on the dark vertical line so that the eight columns on the right are folded back. Then read each statement below. Rate each statement from 0 to 5 according to how well the description fits you (0 = Not at All to 5 = Very True). Next unfold the paper and transfer each number over to the outlined block on the same row. Finally, add the numbers in each column to find the total score for each multiple intelligence area. The highest possible score in one area is 15. How many ways are you smart?

<table>
<thead>
<tr>
<th>Which of the following are true about you? 0-5</th>
<th>Naturalist</th>
<th>Mathematical-Logical</th>
<th>Verbal-Linguistic</th>
<th>Musical-Rhythmic</th>
<th>Visual-Spatial</th>
<th>Bodily-Kinesthetic</th>
<th>Interpersonal</th>
<th>Intrapersonal</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy singing and I sing well.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I love crossword puzzles and other word games.</td>
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<td>I like spending time by myself.</td>
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<tr>
<td>Charts, maps, and graphic organizers help me learn.</td>
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<td>I learn best when I can talk over a new idea.</td>
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<td>I enjoy art, photography, or doing craft projects.</td>
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<tr>
<td>I often listen to music in my free time.</td>
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<td>I get along well with different types of people.</td>
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<tr>
<td>I often think about my goals and dreams for the future.</td>
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<tr>
<td>I enjoy studying about the earth and nature.</td>
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<tr>
<td>I enjoy caring for pets and other animals.</td>
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<td>I love projects that involve acting or moving.</td>
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<tr>
<td>Written assignments are usually easy for me.</td>
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<td>I play a musical instrument (or would like to).</td>
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<td>I love painting, drawing, or designing on the computer.</td>
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<td>I enjoy being outside in all types of weather.</td>
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<td>I love the challenge of solving a difficult math problem.</td>
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<td>Having quiet time to think over ideas is important to me.</td>
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<tr>
<td>I read for pleasure every day.</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Totals**

```
Nature  Math  Word  Music  Art  Body  People  Self
```

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### Getting To Know You Survey Example

**Directions:**
Fold the paper on the dark vertical line so that the eight columns on the right are folded back. Then read each statement below. Rate each statement from 0 to 5 according to how well the description fits you (0 = Not at All to 5 = Very True). Next unfold the paper and transfer each number over to the outlined block on the same row. Finally, add the numbers in each column to find the total score for each multiple intelligence area. The highest possible score in one area is 15. How many ways are you smart?

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<td>0</td>
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</tr>
<tr>
<td>I love painting, drawing, or designing on the computer.</td>
<td>4</td>
</tr>
<tr>
<td>I often help others without being asked.</td>
<td>2</td>
</tr>
<tr>
<td>I enjoy being outside in all types of weather.</td>
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<td>I love the challenge of solving a difficult math problem.</td>
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</table>

**Totals**

<table>
<thead>
<tr>
<th>Nature</th>
<th>Math</th>
<th>Word</th>
<th>Music</th>
<th>Art</th>
<th>Body</th>
<th>People</th>
<th>Sell</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>14</td>
<td>13</td>
<td>4</td>
<td>13</td>
<td>9</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>
Assessment Ideas

According to Levy (2008), the products of learning are how the students show what skills they have mastered. This can be done through pre and post assessments, assignments, projects, and informal questioning. Assessments can be formative or summative. Formative assessments are informal, ongoing, and used to drive students’ learning. Summative assessments are based on the curriculum and are to assess mastery (Levy, 2008). Testing is an essential tool for teachers to use to continually monitor students’ progress, skill mastery levels, attitudes, and interests.

Summative/Formal

Summative Assessments are data driven, formal assessments used to check for mastery of skills. These tests vary from state to state and include:

✓ Pre and Post Classroom Assessments
✓ Standardized State Tests
✓ District Assessments Used For Progress Monitoring
Formative/Informal

Formative Assessments are used to guide instruction. They can be used as ongoing measures to help the teacher guide the student in the learning process. Some examples of these informal assessments include but are not limited to:

- ✓ Book Report Cards/Ratings
- ✓ Observations/Anecdotal Notes
- ✓ Quick Checks for Understanding
- ✓ Graphic Organizers
- ✓ Think/Pair/Share
- ✓ Running (Reading) Records
- ✓ Journals
- ✓ Portfolios
- ✓ Thumbs up/Thumbs down
- ✓ Surveys
Assessment/Evaluation/Grading

Taking stock:

1. Portfolio assessments
2. Observations
3. Skills checklist
4. Oral reports
5. Written reports
6. Demonstrations
7. Quizzes/tests
8. Standardized testing
9. Models
10. Dioramas
11. Samples of work
12. Taped responses
13. Performance (readings, drama, etc.)
14. Drawings/graphs/posters

OTHER:
Chapter Seven

Additional Teacher Resources:
Books, Manuals, Websites, and Apps
Teacher Resources

Below is a list of books that focus on strategies to promote student success.

*Best Practice: Today’s Standards for Teaching and Learning in America’s Schools* by Steven Zemelman, Harvey Daniels, and Arthur Hyde, (2005)

*Brain-Friendly Strategies for the Inclusion Classroom* by Judy Willis, M.D., (2007)
Guided Reading by Irene C. Fountas and Gay Su Pinnell, (1996)

Reading by the Colors by Helen Irlen, (2005)

Reading with Meaning by Debbie Miller, (2002)


Manuals

*Creating Strategic Readers* by Valerie Ellery, (2005)


Meeting the Challenge: Special Education Tools that Work for All Kids by Patti Ralabate, (2003)
Solving the Assessment Puzzle Piece by Carolyn Coil, (2003)

Teaching Literacy Elements with Favorite Chapter Books by Immacula A. Rhodes, (2007)

Teaching with Favorite Magic Tree House Books by Deborah Rovin-Murphy and Frank Murphy, (2003)


Tongue Twisters to Teach Phonemic Awareness and Phonics by Joyce Kohfeldt, (2000)
Websites

These websites may be great supplemental resources to the reading programs students are currently participating in and using. Many of these resources have free online activities, books, games, and resources for students, parents, and educators. Remember to continue to monitor websites for appropriateness, relevance, and updates.

<table>
<thead>
<tr>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.abcya.com">www.abcya.com</a></td>
</tr>
<tr>
<td><a href="http://www.bookadventure.com">www.bookadventure.com</a></td>
</tr>
<tr>
<td><a href="http://www.bookpals.net">www.bookpals.net</a></td>
</tr>
<tr>
<td><a href="http://www.funbrain.com">www.funbrain.com</a></td>
</tr>
<tr>
<td><a href="http://www.jumpstart.com">www.jumpstart.com</a></td>
</tr>
<tr>
<td><a href="http://www.kids.nationalgeographic.com">www.kids.nationalgeographic.com</a></td>
</tr>
<tr>
<td><a href="http://www.kidsreads.com">www.kidsreads.com</a></td>
</tr>
<tr>
<td><a href="http://www.learninga-z.com">www.learninga-z.com</a></td>
</tr>
<tr>
<td><a href="http://www.pbskids.org">www.pbskids.org</a></td>
</tr>
<tr>
<td><a href="http://www.readworks.com">www.readworks.com</a></td>
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<td><a href="http://www.rif.org">www.rif.org</a></td>
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<td><a href="http://www.starfall.com">www.starfall.com</a></td>
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<td><a href="http://www.storynory.com">www.storynory.com</a></td>
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<td><a href="http://www.storytimeforme.com">www.storytimeforme.com</a></td>
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<td><a href="http://www.superteacherworksheets.com">www.superteacherworksheets.com</a></td>
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<td><a href="http://www.surfaquarium.com/MI/intelligences.htm">www.surfaquarium.com/MI/intelligences.htm</a></td>
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<td><a href="http://www.teacher.scholastic.com">www.teacher.scholastic.com</a></td>
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<td><a href="http://www.wegivebooks.org">www.wegivebooks.org</a></td>
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Applications (Apps) for the iPad

The apps listed below are just a few of many supplemental tools that can help incorporate the use of technology in the classroom. Some of these apps are free, while others may require a fee to download. Remember to continue to monitor apps for appropriateness, relevance, and updates.

<table>
<thead>
<tr>
<th>Drawing Pad</th>
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<tbody>
<tr>
<td>Educreations</td>
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<tr>
<td>EverNote</td>
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<tr>
<td>Garage Band</td>
</tr>
<tr>
<td>iAnnotate (allows you to write on pdf documents)</td>
</tr>
<tr>
<td>iBooks</td>
</tr>
<tr>
<td>iMovie</td>
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<tr>
<td>Keynote (similar to PowerPoint)</td>
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<tr>
<td>Learning A-Z</td>
</tr>
<tr>
<td>Merriam-Webster Dictionary</td>
</tr>
<tr>
<td>Nearpod Student</td>
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<tr>
<td>Numbers (similar to Excel)</td>
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<tr>
<td>Pages (similar to Word)</td>
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<tr>
<td>Readability</td>
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<tr>
<td>Screen Chomp</td>
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<td>Scribble Press</td>
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<tr>
<td>SketchBook</td>
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<tr>
<td>Socrative Student</td>
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<tr>
<td>Sonic Pics</td>
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<tr>
<td>Story Kit</td>
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<tr>
<td>Videolicious</td>
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</table>

*The following website lists additional apps and how they can be related to student objectives: [www.edtechteacher.org/index.php/teaching-technology/mobile-technology-apps/ipad-as](http://www.edtechteacher.org/index.php/teaching-technology/mobile-technology-apps/ipad-as)*
Important Page Numbers
References


Student interest survey. Retrieved from
http://www.daretodifferentiatewikispaces.com


Tips for teaching boys. Staff *Development for Educators*. Retrieved from
http://www.sde.com


Appendices
Timeline

Breakdown by month

December: collect data and continue with chapter development: finish chapters
1-3/ register for final class

January: begin working on final chapters of paper/continue collecting data/ begin analyzing the data/ begin thinking of ideas for handbook (BUSY, BUSY, BUSY!!!)

February: finish analyzing data/ continue working on final chapters of paper and handbook

March: finish teacher handbook

April: finish teacher handbook/ get ready to turn in/ proofread, proofread, proofread!!

May: GRADUATE 😊
The Institutional Review Board (IRB) has reviewed the above-referenced study application and has determined that it meets the criteria for exemption under 45 CFR 46.101(b)(1).

If you wish to make changes to this study, please refer to our guidance “Minor Changes Not Requiring Review” located on our website at http://www.irb.purdue.edu/policies.php. For changes requiring IRB review, please submit an Amendment to Approved Study form or Personnel Amendment to Study form, whichever is applicable, located on the forms page of our website www.irb.purdue.edu/forms.php. Please contact our office if you have any questions.

Below is a list of best practices that we request you use when conducting your research. The list contains both general items as well as those specific to the different exemption categories.

General
- To recruit from Purdue University classrooms, the instructor and all others associated with conduct of the course (e.g., teaching assistants) must not be present during announcement of the research opportunity or any recruitment activity. This may be accomplished by announcing in advance, that class will either start later than usual or end earlier than usual so this activity may occur. It should be emphasized that attendance at the announcement and recruitment are voluntary and the student's attendance and enrollment decision will not be shared with those administering the course.
- If students earn extra credit towards their course grade through participation in a research project conducted by someone other than the course instructor(s), such as in the example above, the students participation should only be shared with the course instructor(s) at the end of the semester. Additionally, instructors who allow extra credit to be earned through participation in research must also provide an opportunity for students to earn comparable extra credit through a non-research activity requiring an amount of time and effort comparable to the research option.
- When conducting human subjects research at a non-Purdue college/university, investigators are urged to contact that institution's IRB to determine requirements for conducting research at that institution.
- When human subjects research will be conducted in schools or places of business, investigators must obtain written permission from an appropriate authority within the organization. If the written permission was not submitted with the study application at the time of IRB review (e.g., the school would not issue the letter without...
proof of IRB approval, etc.), the investigator must submit the written permission to the IRB prior to engaging in the research activities (e.g., recruitment, study procedures, etc.). This is an institutional requirement.

Category 1

- When human subjects research will be conducted in schools or places of business, investigators must obtain written permission from an appropriate authority within the organization. If the written permission was not submitted with the study application at the time of IRB review (e.g., the school would not issue the letter without proof of IRB approval, etc.), the investigator must submit the written permission to the IRB prior to engaging in the research activities (e.g., recruitment, study procedures, etc.). This is an institutional requirement.

Categories 2 and 3

- Surveys and questionnaires should indicate
  - only participants 18 years of age and over are eligible to participate in the research; and
  - that participation is voluntary; and
  - that any questions may be skipped; and
  - include the investigator’s name and contact information.

- Investigators should explain to participants the amount of time required to participate. Additionally, they should explain to participants how confidentiality will be maintained or if it will not be maintained.

- When conducting focus group research, investigators cannot guarantee that all participants in the focus group will maintain the confidentiality of other group participants. The investigator should make participants aware of this potential for breach of confidentiality.

- When human subjects research will be conducted in schools or places of business, investigators must obtain written permission from an appropriate authority within the organization. If the written permission was not submitted with the study application at the time of IRB review (e.g., the school would not issue the letter without proof of IRB approval, etc.), the investigator must submit the written permission to the IRB prior to engaging in the research activities (e.g., recruitment, study procedures, etc.). This is an institutional requirement.

Category 6

- Surveys and data collection instruments should note that participation is voluntary.
- Surveys and data collection instruments should note that participants may skip any questions.
- When taste testing foods which are highly allergenic (e.g., peanuts, milk, etc.) investigators should disclose the possibility of a reaction to potential subjects.
Information withheld for privacy.
Information withheld for privacy.
Information withheld for privacy.