SELF-ESTEEM AND COMPENSATORY STRATEGIES FOR READING:
UNDERSTANDING STUDENTS WITH DYSLEXIA

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A Thesis
Submitted to the Graduate College of Bowling Green
State University in partial fulfillment of
the requirements for the degree of

MASTER OF EDUCATION

August 2014

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ABSTRACT

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The goal of this study was to obtain self-generated, compensatory strategies for reading from students with dyslexia using a recorded, semi-structured interview format. Built into the study were questions to gain perspective of the student with dyslexia’s experiences in the classroom, especially in regard to teacher and peer responses to dyslexia and how these responses affected self-esteem. Individual interviews were presented as case studies. Data was analyzed for individual as well as common themes among participants, used to answer two research questions: What is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading? Five individuals of unpredicted gender, one in middle school, two in high school, and two in college, who had been diagnosed with dyslexia, participated in this study. Data analysis revealed students with dyslexia convey positive self-esteem when they feel supported by their teachers and parents. Peer support (or non-support) does not appear to play a significant role in determining a student with dyslexia’s self-esteem. Data analysis also showed students with dyslexia acquire a variety of compensatory strategies including reading, writing, and word recognition strategies; organization and note-taking strategies; memory aids and math strategies; and advocacy strategies, all aiding in meaningful learning.
To all students with dyslexia, whose resiliency astounds me.
ACKNOWLEDGMENTS

My sincere thanks to several people for supporting me during this long process: To my daughter, who began this process with me in 2009, and has shared her “Mama” with BGSU up to this point. To my husband, who rode this roller coaster with me. To Dr. Hendricks, who without your guidance, support, and 4 a.m. emails, I would never have made it this far. Finally, to my former students with dyslexia, who opened my naïve eyes to a disorder so under-recognized.
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CHAPTER I. INTRODUCTION

Reading disabilities affect roughly 80% of the learning disabled population (Hudson, High, & Otaiba, 2007; Lyon, Shaywitz, & Shaywitz, 2003). Of this population, dyslexia is the most common learning disability, more recently described as a phonological processing disorder that affects one’s ability to decode and encode when reading and writing, often leading to difficulties in reading fluency, comprehension, and spelling (Torgesen, Wagner, Rashotte, Herron, & Lindamood, 2010; Wajuihian & Naidoo, 2012). Although dyslexia is estimated to affect somewhere between 5% and 17% of school-aged children in the United States (Wajuihian & Naidoo), many teachers are not trained to recognize the signs of dyslexia, let alone remedy its effects (Torgesen et al.).

Though dyslexia was referred to as “congenital word-blindness” in the early 1900s, ophthalmologist Hinshelwood understood that there were far more cases of word-blindness (dyslexia) than were recognized. Hinshelwood (1917) wrote:

I had little doubt that these cases were by no means so rare as the absence of recorded cases would lead us to infer. Their rarity, I thought, was accounted for by the fact that when they did occur, they were not recognized. (p. 42)

As Hinshelwood suggested, well before it was popular to admit, perhaps this lack of knowledge of dyslexia was to blame for its insufficient recognition until recently.

In 1994, Lyon proposed a definition of dyslexia as “one of several distinct learning disabilities” that was later revised by Lyon, Shaywitz, and Shaywitz (2003) to a “specific learning disability” (p. 2), emphasizing its importance as a reading disability and not a general learning disability. The International Dyslexia Association, an organization that is responsible
for increasing public awareness and understanding of dyslexia and the subsequent needs of children diagnosed with the disorder, accepted Lyon et al.’s definition of dyslexia as

…a specific learning disability that is neurobiological in origin. It is characterized by
difficulties with accurate and/or fluent word recognition and by poor spelling and
decoding abilities. These difficulties typically result from a deficit in the phonological
component of language that is often unexpected in relation to other cognitive abilities and
the provision of effective classroom instruction. Secondary consequences may include
problems in reading comprehension and reduced reading experience that can impede the
growth of vocabulary and background knowledge. (p. 2)

While Lyon et al.’s (2003) definition is widely accepted, increasing research and
discoveries related to the specific learning disability continue to act as reason to amend the
definition. One aspect Lyon et al.’s definition does not include is the socio-emotional effects
dyslexia can have on a person. The complexity and multifaceted nature of dyslexia is what
makes it so difficult to define and understand. For this reason, dyslexia interests various
professions, including neurology, psychology, and education; however, each group focuses only
on the realm of dyslexia that falls into its area of expertise. Lawrence (2009) writes, “There is
general agreement today that although dyslexia may well have biological and neurological
origins, it is primarily a specific educational difficulty” (p. 3). While it requires the scholarship
of various professionals to continue to understand the complexity of dyslexia, ultimately it is
educators who remediate the effects of dyslexia. Therefore, it is imperative that educators are
not only able to recognize the various indicators of dyslexia, but also provide students with
dyslexia with various strategies to compensate for reading.
Statement of the Problem

Glazzard (2010) described a nine-person study conducted in two mainstream secondary schools in England. Students with a diagnosis of dyslexia were interviewed. Their responses to each question were analyzed for the effects dyslexia has on their self-esteem. Glazzard found that not only do students with dyslexia experience teasing and bullying by their peers, they also receive unfair treatment by their teachers. Study participant responses revealed that teachers often assumed students were lazy or not listening when students expressed their need for additional help with course material. Rather than helping the students, the teachers naively assigned extra work, causing much more harm to the students’ self-esteem than was most likely intended or considered (Glazzard).

In Glazzard’s (2010) study, the teachers’ naiveté of assigning additional work to the student who appears “lazy” is likely due to teachers’ ignorance of the underlying causes of the students’ perceived behavior. Psychologists Polychroni, Koukoura, and Anagnostou (2006) would argue that the student with dyslexia is not lazy but rather demonstrating a surface approach to learning caused by a history of negative feelings associated with his or her academic achievement, due to his or her poor reading experiences. Further, Polychroni et al. would argue the cyclical effects of self-esteem on reading achievement, reading achievement on motivation to read, and motivation to read on a student’s amount of voluntary reading. For the student with dyslexia to experience success, this cyclical effect must be broken.

Humphrey and Mullins (2002), a psychologist and special educator, would affirm Polychroni et al.’s argument and reference the attribution theory at the heart of their evidence. Attribution theory is grounded in the findings of Kurtze-Costes and Schneider (1994) that there is a positive correlation between self-concept, achievement, and attributional style. Attribution theory says, “For every event or behavior that we produce, we are able to make an attribution as
to the cause” (Humphrey & Mullins, p. 197). This theory could best be summarized by the popular motto “everything happens for a reason”. With this in mind, a student with dyslexia who has negative experiences in an educational system that is not conducive to his/her preferred learning style (most likely visuo-spatial) may exhibit low self-concept and low self-esteem.

Thomson and Hartley (1980) describe the difference between self-concept and self-esteem, where self-concept is how an individual believes others feel about him/her and self-esteem is how an individual values himself/herself. Children with dyslexia who experience low self-concept, low self-esteem and low reading achievement would have an attributional style as one of learned helplessness or helpless orientation, described by Santrock (2008) as one’s focus on his/her inadequacies and lack of ability. Students with helpless orientations face the dilemma that their ability is stagnant and cannot improve. In contrast, a student with mastery orientation does not focus on his/her ability but rather focuses on the task and enjoys the challenge. Students with mastery orientation exhibit active learning behaviors, such as paying attention, thinking about the material, and thinking about strategies that have been effective in the past. For students with dyslexia whose attributional style is a helpless orientation, it is imperative for teachers to intervene, and provide these students with strategies that will help to afford them success in reading and writing. With this success, increased self-concept and self-esteem would also come.

Research Questions

Because dyslexia has been difficult to define and difficult for people to accept as a genuine learning disability, emphasis has not been placed on providing classroom teachers with effective strategies for helping students with dyslexia. Consequently, these students, out of necessity, have resorted to developing their own compensatory strategies for the reading that has
been assigned through their academic journey. The purpose of this investigation was to identify those strategies that students with dyslexia have developed, and to share those strategies with educators and students with dyslexia alike so they may be successful in the academic arena. It was also the purpose of this study to investigate how students with dyslexia believe they are perceived by their teachers, and to gain some insight into why students with dyslexia may not be receiving the reading help they need. The specific research questions for this investigation were:
What is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading?

Rationale

Gardner (1991) argues, “People learn, represent, and utilize knowledge in many different ways…these differences challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning” (p. 12). To add, he explains that our educational system uses one dominant mode of instruction and assessment: linguistic.

Janice Edwards (1994), author of *The Scars of Dyslexia*, shares Gardner’s views that all students cannot be expected to receive information and demonstrate understanding of this information in the same way. In fact, Edwards argues that a society that interprets understanding as a linguistic output of knowledge fails to see the gift that dyslexics typically hold in the visual/spatial arts. Edwards writes, “[The] IQ profiles of dyslexics can reveal high innate Performance and Visuo-spatial powers. If they are neglected, we may overlook potential innovators, scientists and designers” (p. 23). Edwards credits Susan Parkinson, co-founder of Arts Dyslexia Trust, for being the first to suggest that difficulties students with dyslexia
experience with literacy skills could be the antithesis of their gift with visual and spatial arts. To support Parkinson’s claim, Edwards acknowledges Baker (1984) of the Orton Society who argued, “Slowing of the left hemispheric language area of the brain facilitated enlargement of the right side” (as cited in Edwards, p. 17). The right side is important for spatial perception and basic skills in art and music. Interestingly, Baker attributed these differences in the dyslexic brain to evolution, as a way of producing those talented in visual/spatial arts, such as architecture, engineering, photography, and mechanics. With Baker’s theory in mind, Edwards argues that if these differences in the dyslexic brain are of genetic design to produce those who can innovate and advance the human race, their potential should not be wasted. Rather, attention must be drawn to their potential being a product of their dyslexic brain’s genetic design. Examine in a positive light, this potential must be nurtured in the initial stages of literacy for innovation and advancement to be made.

To nurture the dyslexic brain, educators should validate the self-generated strategies students with dyslexia develop to compensate for reading. These self-generated strategies should first be observed for their helpfulness to the student, as well as their frequency of use by other students with dyslexia. Developing a better understanding of these self-generated strategies for reading will not only provide a way for educators to demonstrate compensatory strategies for those students with dyslexia in need, but may also build the self-esteem of those students with dyslexia who first developed and/or demonstrated the strategy for others to use.

Definition of Terms

*Dyslexia*

For this study, Lyon et al.’s (2003) definition of dyslexia has been adopted. However, it should be noted that Lyon et al.’s definition does not include the socio-emotional effects dyslexia
can have on a person. The complexity and multifaceted nature of dyslexia is what makes it so difficult to define and understand. Lyon et al.’s definition reads:

…a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge. (p. 2)

*Self-concept vs. Self-esteem*

For this study, it is imperative to understand the difference between self-concept and self-esteem. Therefore, Thomson and Hartley’s (1980) definitions of these two terms have been adopted. Self-concept is defined as how an individual believes others feel about him/her, while self-esteem is defined as how an individual values himself/herself.

*Specific learning disability*

As defined by the United States Code (20 U.S.C. §1401 [30]) (2006), specific learning disability is:

(A) …a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

(B) Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.
(C) Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (pp. 856-857)

Limitations

Due to its interview-based nature, this study had several limitations that, when replicated, may cause another researcher to produce different results. The limitations of this study included the various combinations of the following variables: age, gender, socioeconomic status, experiences, and coping strategies of the students interviewed. Student honesty was essential in the self-reported information gleaned from the interviews. Truthfulness in answering the questions, rather than saying what he/she believed the interviewer wanted to hear, was essential for obtaining accurate data.

Summary

Dyslexia affects approximately 5% to 17% of students; however, many teachers are not trained to recognize these students as being dyslexic. Historically, dyslexia has not always been recognized as a specific learning disability due to its complex nature. One aspect of dyslexia yet to be fully recognized is the effect it can have on students’ self-esteem, mostly due to how these individuals believe they are perceived by their peers and teachers. One study found that teachers assume these students are lazy or not listening, because many educators do not understand the underlying effects of dyslexia. Gardner (1991) said that people learn and express knowledge in all different ways. With this in mind, students with dyslexia appear lazy because they are not given the appropriate venue to express their knowledge. In fact, there is medical proof that students with dyslexia, whose left hemisphere of the brain is much smaller than students without dyslexia, have enlarged right hemispheres, causing them to be visually and spatially gifted.
Therefore, educators should value those students who are visually and spatially gifted, as they have the potential to innovate and advance the human race. While dyslexia is a multifaceted disability, perking the interests of many professionals, it is ultimately educators who must be able to recognize the disability and provide students with compensatory strategies for reading.
CHAPTER II. REVIEW OF THE LITERATURE

Recent discoveries in brain imaging using functional magnetic resonance imaging (fMRI), over the past decade, have shown that dyslexic readers use different neural pathways to read than do good readers. Good readers use neural systems located in the left posterior region of the brain; in contrast, fMRIs have shown dyslexic readers use neural systems mostly in the right anterior region of the brain. Because most neural systems for reading are located in the left posterior region of the brain, dyslexic readers struggle with sounding out words because their left posterior systems are not working. The dyslexic brain compensates for this faulty wiring by using alternate pathways to read, albeit at a much slower rate because these right anterior regions, not typically the dominant hemisphere used for reading, do not allow for automaticity. The overuse of this frontal region of the brain, responsible for articulation, may explain why many dyslexics vocalize words to help them read, which is just one coping strategy dyslexics may employ to compensate for their word decoding difficulties (Hudson, High, & Otaiba, 2007; Shaywitz, 2003).

Understanding other coping strategies that dyslexic readers use to compensate for the faulty wiring in their brains is essential if teachers are to fully meet the needs of readers who struggle with dyslexia. The purpose of this investigation was to identify strategies that students with dyslexia have developed, and to share those strategies with educators and students with dyslexia alike so they may be successful in the academic arena. It was also the purpose of this study to investigate how students with dyslexia believe they are perceived by their teachers, to gain some insight into why students with dyslexia may not be receiving the reading help they need. The specific research questions for this investigation were: What is the self-esteem of
students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading?

Chapter II will first discuss major theoretical works that guide the development of this investigation. Next, significant historical research will be identified first to diagnose dyslexia as a defect and later as a disability. Finally, this section will describe contemporary research conducted within the past 15 years that has helped to improve the understanding of dyslexia, its effects, and how to remediate those effects.

Theoretical Orientation

According to Gardner’s (1991) Multiple Intelligences Theory, all human beings are capable of understanding the world in at least seven different ways: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal. Gardner argues, “People learn, represent, and utilize knowledge in many different ways…these differences challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning” (p. 12). He explains that our educational system uses one dominant mode of instruction and assessment: linguistic. To a lesser degree, our educational system instructs and assesses using a logical, mathematical mode as well.

Within his theory, Gardner (1991) argues that students, as well as our society as a whole, would be better served if knowledge of a specific discipline could be demonstrated in a number of ways, as well as the ways in which this knowledge is assessed. Gardner writes, “…many who are capable of exhibiting significant understanding appear deficient, simply because they cannot readily traffic in the commonly accepted coin of the educational realm” (pp. 12-13). An example of this is the significant number of students who perform poorly on standardized tests, but, when
faced with similar problems in an authentic context, these same “failing” students demonstrate their understanding of a given concept to navigate the problem in its realistic state. According to Gardner, because of our educational system that values linguistic representation of knowledge as the primary representation of what it means to be knowledgeable, we assume that only those who can pass a formalized assessment possess understanding. All others do not. Consequently, we do not test for real understanding because we do not test within authentic contexts. Therefore, those who are deemed intelligent based on their ability to pass a formalized test may not actually possess a real understanding of the material, as could be demonstrated and realized through their inability to apply this knowledge to real-life situations.

Recognizing and utilizing multiple intelligences within our classrooms would broaden the ways in which we as a society conceptualize understanding. Gardner (1991) argues, “No one person can be expected to have all modes available, but everyone ought to have available at least a few ways of representing the relevant concept or skill” (p. 13). Gardner promotes an education for understanding in which a student has “a sufficient grasp of concepts, principles, or skills so that one can bring them to bear on new problems and situations, deciding in which ways one’s present competences can suffice and in which ways one may require new skills or knowledge” (p. 18). Gardner’s promotion of authentic understanding is in response to de-contextualized assessment, typically known as standardized testing, that has dominated how schools assess understanding.

While standardized tests were created to eliminate the subjective element of assessment, they present students with “arbitrary problems that [students have] little intrinsic interest in or motivation to answer, and performances on such instruments have little predictive power for performances outside of a scholastic environment” (Gardner, 1991, p. 133). With this theory in
mind, Gardner would argue that the student with dyslexia, who inherently struggles with representing his/her knowledge linguistically, should be given an alternative means, such as visual-spatial or oral, to convey his/her understanding. While theory provides evidence that teachers should afford students multiple ways to express their understanding of a concept, theory also provides evidence that teachers should provide students with support, depending on their zone of proximal development.

Vygotsky (as cited in Santrock, 2008) uses a social constructivist approach to children’s cognitive development by emphasizing the “social contexts of learning and the construction of knowledge through social interaction” (p. 50). Vygotsky may be best known for his 1978 theory of zone of proximal development (ZPD), which is the scale that begins with the tasks a child can successfully accomplish on his own (the lower limit of ZPD) and ends with the tasks a child can successfully accomplish with the guidance of a more-skilled person (upper limit of ZPD). As the child tackles a difficult task with a more-skilled person, the task becomes increasingly less difficult, allowing the more-skilled person to lessen the amount of assistance she gives the child. The act of changing the level of one’s support over time as a child becomes more skilled at a task is known as scaffolding. The purpose of scaffolding is to help a child reach the upper limit of his ZPD, ultimately leading him to complete a task independently (Santrock). As the child develops with the help of a more-skilled person and upper level tasks are achieved independently, the child’s ZPD shifts to an even greater range of tasks that can be completed with guidance. Such is the way humans become more knowledgeable and set even higher, more challenging goals for themselves.

Vygotsky’s (as cited in Santrock, 2008) theory of zone of proximal development can be used to explain why students do not perform tasks at the same rate. More specifically, ZPD can
be used to rationalize why teachers should provide students with dyslexia more support than those students without dyslexia. In essence, a student with dyslexia’s zone of proximal development for comprehending written information and expressing himself/herself linguistically would be lower than that of the student without dyslexia. With Gardner’s (1991) and Vygotsky’s theories in mind, the student with dyslexia would need multiple ways to express his/her knowledge of a given concept, as well as adequate support and scaffolding to perform at an increased level of ZPD.

Finally, Erikson’s (1963) theory of psychosocial development explains the cyclical effect of providing students with dyslexia with scaffolding and multiple ways to demonstrate their knowledge. Erikson described his theory of psychosocial development as the “Eight Ages of Man” in his first book *Childhood and Society*. Each stage of Erikson’s theory describes a conflict in which man is faced within his society, that when overcome successfully, helps to further develop his ego identity. Ego identity is one’s sense of self, ever changing with each social interaction.

With each conflict, man either overcomes the obstacle, gaining a foundational piece of personal growth, such as trust, autonomy, initiative, or industry, that allows him to progress to the next “age of man”, or he fails to overcome the obstacle and attempts to defend his ego identity. Erikson (1963) wrote:

> Where such synthesis succeeds, a most surprising coagulation of constitutional, temperamental, and learned reactions may produce exuberance of growth and unexpected accomplishment. Where it fails, it must lead to severe conflict, often expressed in unexpected naughtiness or delinquency. For should a child feel that the environment tries to deprive him too radically of all the forms of expression which permit him to develop
and to integrate the next step in his identity, he will defend it with astonishing strength
encountered in animals who are suddenly forced to defend their lives. (p. 240)

Erikson added that a child’s ego identity strengthens only when he has made and has received
consistent praise for real accomplishments that bear value in his society. With this praise comes
the establishment and reinforcement of his self-esteem. Erikson writes, “This self-esteem grows
to be a conviction that one is learning effective steps toward a tangible future, and developing
into a defined self within a social reality” (p. 235). Each accomplishment that helps him to move
to the next stage of psychosocial development is accompanied by the growing realization that he
is moving toward building his identity within his society.

In Erikson’s (1963) theory of psychosocial development, his fourth stage “Industry vs.
Inferiority” seems to provide rationale for the distress the student with dyslexia feels when
socially compared to peers. In this stage, which one faces between the ages of 5 and 11, the
child develops a sense of industry through the completion of a skilled task, such as reading and
writing. The danger the student with dyslexia faces within this stage is the perception of
“inadequacy and inferiority” when he/she is unable to complete a task his/her peers complete (p.
260). Erikson wrote, “This is socially a most decisive stage: since industry involves doing things
beside and with others, a first sense of division of labor and of differential opportunity...a sense
of the technological ethos of a culture, develops at this time” (p. 260). It is during this stage that
the student with dyslexia realizes that his/her worth as a learner is not determined by his/her will
but by how he/she compares to peers. When he/she realizes he/she does not share the same
abilities as peers (based on how ability is represented and assessed in school), the student with
dyslexia develops a sense of inferiority. The inability to conquer the obstacle of industry and
feelings of inferiority leave the student with one option: defending his/her identity. Erikson
labels the child’s defense a “desperate plea for the permission to synthesize and sublimate in the only way possible” (p. 240).

Historical Perspectives

In November of 1896, Dr. W. Pringle Morgan published an article describing Percy F., a 14-year-old boy who was intelligent and had good eyesight, but was unable to read. Having been in school and tutoring for seven years, he was only able to spell and recognize simple words, such as “and”, “of”, “the”, and “that”. Percy’s father shared that, originally, the boy was diagnosed as letter blind, but with great difficulty and much practice, Percy finally learned to read and write the alphabet. During his examination of the boy, Dr. Morgan asked Percy to write a sentence he dictated to him. The sentence was: “Now you watch me while I spin it” whereas Percy wrote: “Now you word me wale I spin it” (p. 1378). Additionally, Morgan dictated the following words: “song”, “subject”, “without”, “English”, “shilling”, and “seashore”. In reply, Percy wrote: “scone”, “scojock”, “wichout”, “Euglis”, “sening”, and “seasow” (p. 1378). Conversely, Morgan observed that the boy was good with numbers, quickly and accurately multiplying 749 by 867. The doctor concluded the boy definitely suffered from a defective or absent visual memory, leaving the boy with the laborious task of spelling each word aloud, to hear the sounds of the letters, and finally recognize the word. Percy’s teacher shared with the doctor that if his instruction were received entire orally, Percy would be the smartest boy in the school. Morgan attributed Percy’s condition to a defective development of the left angular gyrus, informally diagnosing him as “word blind” (p. 1378).

Referencing Morgan’s case study in his book Congenital Word-Blindness, James Hinshelwood (1917) is best known for being the first to draw great attention to congenital word-blindness in medical literature as a scientific condition. In his book, Hinshelwood described the
symptoms of what was previously referred to as “cerebral disease” (p. 40). In Chapter II, Hinshelwood defines congenital word-blindness as:

…a congenital defect occurring in children with otherwise normal and undamaged brains characterized by a difficulty in learning to read so great that it is manifestly due to a pathological condition, and where the attempts to teach the child by the ordinary methods have completely failed. (p. 40)

Hinshelwood pointed out that in his description of the boy who seemed to be word blind, Morgan made no attempt to analyze or explain his observations, other than state that he believed the boy suffered from congenital word-blindness. In Morgan’s informal diagnosis of the boy, he did explain that the word-blindness was probably due to the defective development of the left angular gyrus, the same region of the brain that is defective in adults who demonstrate similar symptoms. At this point in history, children and adults were viewed separately, even though a form of word-blindness was being deemed congenital (Hinshelwood).

Hinshelwood (1917) recognized that interest in congenital word-blindness was growing, especially in the educational realm. To help readers better understand the various forms of the condition, Hinshelwood detailed 12 case studies throughout his book, analyzing and addressing commonalities patients shared. Of those commonalities, Hinshelwood found that all of the cases were intelligent, but demonstrated difficulty with reading, most importantly in the initial stage of learning to read—recognizing the letters of the alphabet. In addition, all students were unable to recognize words by sight alone. In all of the cases, except one who was taught using the “look say” method and therefore was not taught to spell, the students had to spell the word aloud or mouth the letters of the word to activate their auditory memory or memory of speech movements. In fact, many of the parents and teachers of the students said while they could not
read, they were able to learn their reading passages by heart. Additionally, many of the teachers commented that if their instruction could be solely oral, these students would be the most intelligent of their class. Both of these observations were attributed to the students’ excellent auditory memories. Finally, all students were found to have good vision, allowing Hinshelwood to cancel out poor vision as a contributing factor to students’ inability to read (Hinshelwood).

After careful review of the cases, Hinshelwood (1917) determined that the reading difficulties students demonstrated were due to some defect (e.g., disease, injury at birth, or faulty development) in the area of the brain responsible for storing words and letters. He also noted that the area of the brain that stores words and letters is distinct from, although may be closely located to, the area of brain that stores musical notes and numerals. He added when a student displayed difficulty with letters but not with numbers, the student was more than likely diagnosed with congenital word-blindness, as this very correlation was frequent in others diagnosed with congenital word-blindness. In the case of writing ability, Hinshelwood found that while all the students learned to write the characters of the alphabet, as well as copy a piece of writing put before them, they were unable to write words that were dictated to them. He rationalized this by explaining that the graphic motor center, the part of the brain responsible for allowing one to write, was not triggered by the auditory center, but rather the visual memory center. Because all the students suffered from “disease” of the visual memory center, they were unable to store words, and therefore, unable to write words when they heard them. Finally, Hinshelwood found it worthy to note that the frequency of congenital word-blindness was much more common in boys than girls, with a ratio of 5:1 (Hinshelwood).

Samuel Orton, best known for his contributions to the Orton-Gillingham Approach to teach reading and spelling, was a practicing neuropathologist in 1925 when he coined the term
“strephosymbolia” to describe those children who he observed to be reversing words (Orton, 1925). He created this new term to replace the term currently being used, “congenital word-blindness”, to refer to those who are now labeled “dyslexic”. While working at the State Psychopathic Hospital in Iowa City, Orton instituted a two-week mobile clinic in which he invited local teachers in Greene County, Iowa, to refer students to him who were failing their school work. Of the 88 students who were referred to Orton, 14 were reported by their teachers as having great difficulty learning to read. During his study, Orton administered the Stanford-Binet IQ test to each participant. He found that many of the students scored in the near-average, average, or above-average range (Orton).

Orton (1925) was heavily influenced by Hinshelwood’s (1917) findings, but shared different views on several key aspects of reading disabilities. While Hinshelwood believed that approximately one in every 1000 students suffered from “word-blindness”, Orton suggested that as many as 10% or more of the school population had a reading disability. In addition, Orton attributed many reading disabilities to the inheritance of “mixed cerebral dominance”, where rather than having one dominant hemisphere of the brain all of the time, students with reading disabilities have mixed dominance. Orton believed that those symptoms he observed during his clinic—reversals of letters, confusion of palindromes, reading from right to left, and mirror reading and writing—could all be explained by mixed dominance. According to Orton, a brain controlled by mixed dominance meant that the dominant hemisphere stored words as they were spelled, while the non-dominant hemisphere stored mirror-images of those words. Sometimes, when mixed dominance was at its finest, Orton argued that the non-dominant hemisphere would emerge, causing the student to reverse letters and words. Orton’s perceived observations of mixed dominance and reversals led to his terming the reading disability strephosymbolia (Orton).
Orton’s observations acted as rationalization for how he believed literacy should be taught in its early stages. In 1925, he emphasized the teaching of letter-sound relationships (phonics) through the repetition of visually representing the letter and having the student rewrite the letter. By 1937, Orton argued that the teaching of letter-sound relationships was not enough. Orton believed that even more difficult than letter reversals for students with reading disabilities was blending letters together to read an entire word. Once students accomplished letter-sound relationships, Orton said students must advance to the next step of literacy instruction: blending.

Not only was Orton (1937) one of the first researchers to suggest a systematic approach to teaching reading and spelling, he was also one of the first to introduce a multisensory approach to literacy instruction as well. This included having students trace letters while sounding them out. Orton’s ideas for teaching reading and spelling eventually inspired two educators who developed an approach to teaching reading that would later be named after Orton himself.

In 1956, educators Anna Gillingham and Bessie Stillman developed a method of teaching reading and spelling to children with reading difficulties, especially dyslexia, using a multisensory approach influenced by Orton. Orton believed that “kinesthetic-tactile reinforcement of visual and auditory associations could correct the tendency of reversing letters and transposing the sequence of letters while reading and writing”, a tendency often found in dyslexic students (International Dyslexia Association [IDA], 2000, para. 2).

With Orton’s belief in mind, Gillingham and Stillman’s (1956) approach focused on the “language triangle” (p. 40) – the association of visual, auditory, and kinesthetic elements when learning to read and write. Gillingham and Stillman’s approach, now known as the Orton-
Gillingham Approach, employs eight linkages, or steps, to teach children how to thoroughly identify each letter and its sound to eventually build words (Gillingham & Stillman).

In linkage one of the Orton-Gillingham Approach (Gillingham & Stillman, 1956), students are taught the name and sound of each letter, as it is introduced with a key word (e.g., a is for apple). In addition, students are taught to focus on how each letter feels on their speech organs when they produce its name or sound. In the second linkage, the teacher produces the letter on paper for the student to trace, produce from memory, and write without looking at the paper. The third linkage involves showing the letter to the student or forming the letter with the student’s hand, asking him or her to name it. The fourth linkage has the student write the letter dictated by the teacher. In the fifth linkage, where reading begins at its most infantile stage, the student is shown the letter or the teacher forms the letter with the student’s hand and asks, “What does this letter say?” (Gillingham & Stillman, 1956, p. 41). The sixth linkage has the student give the sound of a particular letter named by the teacher. The seventh linkage has the student perform the reverse, where he or she is given the sound of the letter, and the student provides the name of the letter associated with that sound. The final linkage of the Orton-Gillingham Approach asks the student to write and say the letter of the sound the teacher makes. Gillingham and Stillman noted that when beginning this approach, the sequence of these linkages must be followed. As the student masters 1 to 4 and 6, linkages 5, 7, and 8 become the only linkages practiced daily. Additionally, Gillingham and Stillman emphasized the importance of the student’s accuracy of each letter and its sound over speed.

After the student masters the letters and all eight linkages, the reading of words can begin. The teacher should use the drill cards to form simple words, such as bat. The student is asked to pronounce each letter’s sound in succession to form the word. The student repeats the
sounds, increasing in speed each time. A few days after blending begins, so does spelling. The teacher uses a “Four-Point Program” (Gillingham & Stillman, 1956), in which the child hears, sees, and feels the letters of a word, to learn to spell. In addition, the Orton-Gillingham method employs Simultaneous Oral Spelling (S.O.S.), in which the child names each letter as he or she writes it.

Gillingham and Stillman (1956) developed this method with the belief that it was the school’s and parents’ obligation to provide students with specific reading disabilities with instruction that met their needs. Gillingham and Stillman believed employing this method would not only resolve the reading and spelling issues, but the emotional disturbances as well. They wrote:

> It is safe to say that all children who have known failure in reading, this most essential of school requirements, manifest some emotional reactions. We are convinced, however, that these emotional disturbances are the result of frustration and failure and not the cause of the reading disability. (p. 19)

For students with dyslexia, who research says experience low self-esteem due to the repercussions of their low academic achievement, the Orton-Gillingham Approach is one to pursue even today.

**Contemporary Research**

Between 2003 and 2005, dyslexia gained recognition as a disability in England, Wales, and Northern Ireland. With this recognition came the added responsibility and accountability of schools in the United Kingdom to provide students with literacy difficulties, especially dyslexia, “appropriate learning opportunities” (p. 124). To avoid condemnation for discriminating against
students with disabilities, the United Kingdom now references the *Code of Practice on the Identification and Assessment of Special Educational Needs*, as it provides an educational framework for working with students with learning difficulties (Department of Education Northern Ireland [DENI], 1998; Long, MacBlain, & MacBlain, 2007). The *Code* requests evidence of strategies known to be effective for teaching students with dyslexia, including multisensory approaches and spelling techniques such as Simultaneous Oral Spelling (DENI, 1998; Long, MacBlain, & MacBlain, 2007).

Additionally, the *Code’s* definition of dyslexia as a specific learning disability acknowledges what Lyon et al.’s (2003) definition does not—emotional and behavioral repercussions of having dyslexia. In fact, the *Code* draws specific attention to this piece of the definition by emphasizing it in italics. The last line of the *Code’s* definition of dyslexia reads, “*Some children may become severely frustrated and may also have emotional and/or behavioural difficulties*” (DENI, 1998, p. 71). The emotional and/or behavioral difficulties led Long et al. (2007) to tell the story of Matthew, a high school student with dyslexia in Northern Ireland, whose case study exemplifies the benefits of a holistic approach to student development that considers students’ personal, social, and emotional well-being.

At the time of Long et al.’s (2007) study, Matthew attended a nonselective high school, meaning an English school that does not require a particular grade on the eleventh grade examination to transfer to grammar school. The majority of students at Matthew’s school were of low income and 40% were deemed special education students. By Matthew’s third year in the school (tenth grade), his teachers described him as disruptive, low ability, and attention-seeking. In addition, they said he possessed poor organizational skills and grades, and he suffered from forgetfulness. Similarly, Matthew’s parents said his motivation and enthusiasm for school had
declined since making the transition from primary to secondary school. At home, he struggled to complete his homework and often expressed his unwillingness to attend school (Long et al.).

Long et al. (2007) revealed that when given an educational psychological assessment, Matthew disclosed his difficulty with taking notes, his feelings of failure and loneliness, and his resentment towards teachers who singled him out for incomplete homework and poor spelling. During a follow-up interview, Matthew shared that he believed he was good at art and information technology, but disliked reading aloud and writing, as he noticed his inadequacies in comparison to his peers (Long et al.).

After the interview, Long et al. (2007) put interventions in place to help Matthew. Teachers were asked not to call on Matthew to read aloud in class, or to expect him to take notes from dictation. In addition, rather than expecting Matthew to copy lots of text from the board, Matthew was provided with handouts containing key points prior to the lecture. To improve his vocabulary, Matthew was given a personal dictionary to record content-specific words that were provided to him at the start of a new topic. He was also encouraged to capitalize on his visual learning preference by incorporating mind maps, diagrams, and charts into his notes (Long et al.).

To attend to his affective needs, Matthew was also assigned a mentor to meet with him in 10 minute intervals, twice per week (Long et al., 2007). The mentor acted as a listener, and helped Matthew to act as a forward planner by self-evaluating and monitoring his own progress. To aid in his forward planning, teachers provided Matthew with visual summaries of their syllabi and printouts of homework requirements and due dates. To help him keep up with his assignments, teachers allowed him to record written work. Finally, to aid his organizational
abilities, Matthew was taught how to color code textbooks and folders for each class (Long et al.).

Long et al. (2007) reported that after six months of intervention, Matthew showed improvements in reading and his affective state. The results of the *Wechsler Objective Reading Dimensions* assessment showed no statistical difference between his reading score and his cognitive ability. Results of the *Beck Youth Inventories of Social and Emotional Impairment* before intervention and after intervention showed a decrease in his levels of anxiety and disruption and an increase in his self-concept. His levels of depression and anger remained the same (below average and average) (Long et al.).

Also improving were Matthew’s perceptions of his school, as well as his teachers’ and parents’ perceptions of him (Long et al., 2007). Matthew shared that his relationships with teachers had improved and he was more motivated to be in school. He believed his needs were being met by teachers, and, as a result, he was performing better on tests. In addition, he expressed his willingness to take part in challenging tasks as he no longer feared giving incorrect answers (Long et al.).

According to Long et al. (2007), Matthew’s teachers’ perceptions of him also improved. A majority of Matthew’s teachers interviewed said they had fewer negative interactions with him; he was more motivated, and more likely to speak in class. They also expressed that the strategies they used with Matthew were helpful for all students. Similarly, his parents perceived Matthew as happier, more relaxed, more confident, and more social. However, he continued to experience high levels of fatigue and still struggled to complete his homework (Long et al.).

Matthew’s case led Long et al. (2007) to further examine teacher-student empathy. A questionnaire was administered to a convenience sample of 25 students with dyslexia, looking to
gain insight into their perceptions of their learning needs and school support. The results of the questionnaire suggested that while academic needs were addressed, students’ affective needs were not. Of the participants, 13 of 25 hoped a label of dyslexia meant teachers would be more understanding of their inability; however, 17 of 25 believed a label of dyslexia was associated with stupidity. Eighteen of 25 believed teachers lacked empathy and understanding of their disability, and 16 of 25 would not approach their teacher if they needed help. Finally, 8 of the 25 students wanted teachers to “stop belittling them in front of others” (p. 131).

Harter (1999) declared that children between the ages of 8 and 11 begin to describe themselves using labels, such as smart, stupid, popular, or outcast, demonstrating self-comparison to their peers. When students with dyslexia begin to compare themselves to their peers, they recognize their cognitive difficulties, often leading to stress (Alexander-Passe, 2006). Alexander-Passe noted that students with dyslexia will then react to this stress in one of two ways: (1) the student experiences extreme anxiety and low self-opinion; or (2) the student masks the disability with silly or deviant behavior. Like most teenagers, students with dyslexia seek attention from their peers. To gain attention and protect their self-esteem, students with dyslexia may act out in class during difficult coursework that threatens their self-esteem. Low self-esteem may lead to the development of poor self-images, causing students with dyslexia to believe they will fail no matter what (Alexander-Passe).

With this in mind, Alexander-Passe (2006) conducted a study of 19 participants (12 male, 7 female) to assess how the student with dyslexia copes with self-esteem, avoidance, and depression as it relates to school. For this study, the researcher administered three standardized tests, one for each measurement. The first test, Culture-free Self-esteem Inventories (CFSEI), measures four types of self-esteem: general, social, academic, and parental. The second test,
Coping Inventory for Stressful Situations: CISS Manual, measures three types of coping strategies: task-oriented, emotion-oriented, and avoidance-oriented. Finally, the third test, Beck Depression Inventory (BDI-II), measures the severity of depression in diagnosed and undiagnosed participants. Before Alexander-Passe’s study, no other study had investigated depression in school-aged dyslexics. The researcher chose the CFSEI and BDI-II because data from these tests used in combination showed an inverse correlation between self-esteem and depression—as self-esteem increases, depression decreases (Alexander-Passe).

The results of Alexander-Passe’s (2006) study suggest there is a difference between female and male dyslexics in an academic setting. Females suffer from low self-worth and low academic self-esteem. They use emotion- and avoidance-oriented coping strategies, both negative, which result in moderate depression. When employing emotion-oriented coping strategies, the student uses emotionally-charged reactions to place blame on themselves or others. When using avoidance-oriented strategies, the student avoids an undesirable task by means of distraction or social diversion to elude peer comparison. In contrast, males experience normal academic self-esteem or just below normal in all other types of self-esteem. Additionally, males predominantly use task-based coping strategies, in which they reflect on past experiences to deal with current, stressful situations (Alexander-Passe).

Alexander-Passe’s (2006) study also seems to suggest that females should be taught task-based coping strategies, as they were found to have been used by successful students with dyslexia. These students exhibited proactive behaviors, such as persistence and stubbornness, hard work and determination, high levels of self-confidence, and a search for self-worth, that allowed them to overcome hurdles. Additionally, successful students with dyslexia received encouragement from their peers. Currently, females who exhibit emotion-based coping
strategies display feelings of frustration, lack of confidence, self-doubt, behavioral problems, and refuse to attend school. They also tend to be sensitive to criticism and only put forth their best effort when “winning” is likely. Females who display avoidance-based coping strategies tend not to participate in class and lack confidence (Alexander-Passe).

Similar to Long et al.’s (2007) recommendation of a holistic approach to student development, Alexander-Passe (2006) argues for treating the whole child to help students with dyslexia cope in an academic setting. These students not only need remedial reading help; they also need counseling to improve their self-esteem, which is linked to academic ability. Counseling treats the individual, not the difficulty. Counseling does not have to come from professionals; it can come from teachers who are warm and sympathetic (Alexander-Passe).

Students with dyslexia who do not receive the appropriate affective support they require may experience anxiety. Alexander-Passe (2006) said that it is natural for a person to avoid what causes him/her anxiety. It is this avoidance that teachers tend to perceive as laziness. Psychologists Polychroni, Koukoura, and Anagnostou (2006) would argue that the student with dyslexia is not lazy but rather demonstrating a surface approach to learning caused by a history of negative feelings associated with his or her academic achievement, due to his or her poor reading experiences.

Polychroni et al. (2006) conducted a study of students with dyslexia and their motivation for reading in comparison to their peers. Participants consisted of 242 fifth and sixth grade students from six Attica, Greece schools. Of the population, 32 students were dyslexic (22 boys and 10 girls), ranging in ages from 10 to 12 years old. The comparison group consisted of 210 students (120 boys and 90 girls) in the same class. This group was divided into two groups based on teacher ratings of the students’ literacy performance in areas of reading speed,
accuracy, and spelling. The low/average performance group consisted of 115 students (73 boys and 42 girls), while the high performance group contained 95 students (47 boys and 48 girls) (Polychroni et al.).

All participants in Polychroni et al.’s study (2006) completed a questionnaire comprised of three assessments: Students’ Perception Of Ability Scale (SPAS), Reading Attitude Scale (RAS), and Approaches To Learning Inventory (ALI). The SPAS measures students’ self-perceptions of their academic abilities and achievements in reading/spelling, penmanship/neatness, and arithmetic. It also measures their perceptions of and attitudes towards school, including school satisfaction, general ability, and practical ability. The RAS measures students’ attitudes towards reading, and assesses their three main reasons for reading: to gain insight into themselves or others (individual development), to do well in school (utilitarian), and for enjoyment (enjoyment). The ALI measures students’ approaches to learning (deep versus surface approach).

The results of the SPAS showed the dyslexic group perceived themselves with a lower level of self-concept than that of the low/average and high performance groups in reading/spelling, penmanship/neatness, arithmetic, school satisfaction, and general ability (Polychroni et al., 2006). There was, however, no significant difference in how all three groups perceived their practical ability. The results of the RAS indicated significant differences in all three groups’ attitudes towards reading as a means of achieving in school, with the high performance group scoring the lowest and the dyslexic group scoring lower than the low/average performance group. The results of the ALI revealed the dyslexic and low/average groups rated themselves significantly higher as surface approach learners compared to the high performance group. For dyslexic learners, these results indicate a low self-concept of their academic abilities,
an attitude towards reading not as a means of achieving in school, and a surface approach to learning (Polychroni et al.).

While there was not a significant difference of reading for enjoyment or personal development between students with dyslexia and the comparison group, the dyslexic group did indicate they read less for enjoyment or personal development (Polychroni et al., 2006). Combined with their attitude towards reading not as a means for school achievement, the results of Polychroni et al.’s study indicate that, overall, students with dyslexia do not value reading. Students who do not value reading will likely not read voluntarily. Little voluntary reading triggers a cyclical effect of low reading achievement: little voluntary reading means less practice with reading, which leads to reading failures.

So, how can educators get students with dyslexia to read? Brooks and Weeks (1998) hypothesized that students with dyslexia would learn more effectively if educators taught to their strengths, specifically by implementing visual and semantic-based teaching methods. For their investigation, the researchers gathered 12 students with dyslexia and 12 slow learners, both with an average chronological age of 14.3, and 12 controls with an average chronological age of 9.9, but a spelling age to match the dyslexic group of 9.6. The slow learners had a spelling age of 7.9. The dyslexic group, composed of 10 males and 2 females, had an average IQ of 108.8, the highest of all three groups (Brooks & Weeks).

For their three-week study, Brooks and Weeks (1998) taught 10 spelling words per week to each group using one of three teaching methods: phonic, visual/semantic, and tracing. The phonic teaching method consisted of the experimenter showing the participant each misspelled word for 10 seconds, as the experimenter sounded out each phoneme. The visual/semantic teaching method consisted of the experimenter showing the participant each misspelled word,
pointing out other words within the word. Finally, the tracing method consisted of the experimenter showing the participant each misspelled word for 10 seconds, and having the participant trace the word with his/her index finger (Brooks & Weeks).

Every Monday, the participants for Brooks and Weeks’ (1998) study were asked to spell a group of 10 baseline words, in which no teaching methods were provided. All words were pronounced for participants by use of a sentence. After the baseline words were spelled, the experimenter introduced the teaching method allocated to the group for the first week to teach the first set of words. The teaching method was repeated Tuesday through Thursday, and on Friday the participants were asked to spell the 10 words without intervention. The following week, a new teaching method was introduced to each group, along with a new set of words. This pattern was repeated for three weeks so that all three groups were given all three sets of words and taught all three spelling strategies (Brooks & Weeks).

The results of Brooks and Weeks’ (1998) study indicated no improvement in the baseline words, indicating the participants did not transfer teaching methods from the study to their spelling of the baseline words. This also indicates that no outside teaching, such as from home or school, improved participants’ spelling of the baseline words. Because students did not transfer the use of the spelling strategies from the study to their spelling of the baseline words, this may imply that explicit instruction in various spelling methods must be taught for students to make the connection that these strategies can be used in other areas of their schooling (Brooks & Weeks).

Additionally, the results indicated that all teaching methods led to improved spelling; however, certain methods led to more improved spelling for certain groups (Brooks & Weeks, 1998). For example, the dyslexic group demonstrated their most improved spelling the week
they were taught the visual/semantic method, correctly spelling an average of 2.25 more words. In comparison, the slow learners demonstrated their most improved spelling the week they were taught the phonic method, correctly spelling an average of 2.25 more words. These results proved the experimenters’ hypotheses that the dyslexic group would experience more improvements in spelling using the visual/semantic method than they would using the phonic method, and that the slow learners group would experience more improvements in spelling using the phonic method than they would using the visual/semantic method. The control group demonstrated improved spelling using all three methods, with the phonic and visual/semantic methods allowing students to correctly spell approximately three more words, and the tracing method allowing students to correctly spell approximately 2.17 words. Of all three methods, the tracing method was found to be the least effective for all three groups. This indicates that tracing may not be an effective strategy for teaching spelling (Brooks & Weeks).

Brooks and Weeks’ (1998) study make a couple of valuable suggestions for students with dyslexia. Students with dyslexia learn spellings best when meaning is brought to the word and the word is visualized. In addition, students with dyslexia should be taught to their strengths, using visual/semantic teaching methods, which will not only increase their spelling and overall academic performance, but their self-esteem as well.

Snowling and Hulme (2012) evaluated the effectiveness of several intervention programs enacted for children with dyslexia. The researchers first referenced Hatcher et al.’s (1994) study that tested the effectiveness of three 20-week interventions for students with dyslexia: reading alone (R), phonology alone (P), and reading and phonology combined (R+P). Participants included children in their third year of schooling whose reading accuracy skills were in the tenth percentile of children their age. Participants were randomly divided into four groups. Three of
the groups received intervention twice per week for 20 weeks, while one group, the control group, received no intervention (Snowling & Hulme).

The three interventions were delivered by “skilled teachers” (Snowling & Hulme, 2012, p. 28). The reading alone (R) intervention consisted of children reading from appropriate level texts, while teachers reinforced effective reading strategies, such as rereading a text to improve accuracy and cutting up the story. The phonology alone (P) intervention provided instruction to students in oral phonological awareness of syllables, rhymes, and phonemes. The reading with phonology (R+P) intervention provided instruction to students in phonological awareness and letter-sound relationships, while reinforcing the use of these skills in reading at their instructional levels (Snowling & Hulme).

The results of Hatcher et al.’s (1994) study indicated the group receiving the R+P intervention made the most gains in reading accuracy, spelling, and comprehension; and these gains, except in spelling, were maintained even five months after intervention. The researchers noted spelling was not explicitly taught as part of the interventions, and was only an inherent gain of the R+P intervention. From Hatcher et al.’s evaluation, Snowling and Hulme (2012) concluded the most effective intervention program for improving the decoding skills of students with dyslexia would include instruction in phonological awareness and letter-sound relationships, reinforced in the context of real reading.

In addition, Snowling and Hulme (2012) argued that intervention should come before students with decoding deficits fail, such as students with dyslexia. To support their claim, Snowling and Hulme referenced Bowyer-Crane et al.’s (2008) study in which they evaluated a 20-week intervention program designed for children just entering school with poorly developed speech and language. The children in the study were an average age of 4 years, 10 months, and
their speech and language levels were in the tenth percentile for their age group. Bowyer-Crane et al.’s intervention program was a re-design of Hatcher et al.’s R+P intervention program. Bowyer-Crane et al.’s program, renamed the P+R program, consisted of group instruction in letter-sound relationships, segmenting and blending, and individual instruction in reading to reinforce these concepts. To act as a comparison of interventions used to remediate poor speech and language development, a control group received oral language (OL) intervention that included vocabulary training, independent speaking, listening skills and narrative (Snowling & Hulme).

The children were assessed before the intervention, mid-intervention, and post-intervention. The results of the study indicated the children who received the P+R intervention made greater gains in reading accuracy, non-word reading, spelling, segmenting and blending, and single-word reading (all skills in decoding) than the children who received the OL intervention. From this, Snowling and Hulme (2012) determined the most effective intervention for children entering school with poorly developed speech and language, specifically those children displaying decoding deficits, consists of training in phonemic awareness and letter-sound relationships, reinforced with reading instruction.

Berninger, Lee, Abbott, and Breznitz (2013) conducted a study of 24 students with dyslexia in grades 4 to 9 to determine effective writing instruction to treat the word decoding and spelling difficulties these students experience. Berninger et al. argued that learning to spell and read in English requires learning the language’s orthography (graphemes), phonology (phonemes), and morphology (meaning of various word parts), and how each is interrelated. Because students with dyslexia suffer from a lag in their phonological and orthographical loops, both components of their working memory, Berninger et al. proposed that students with dyslexia
should be explicitly taught strategies to improve working memory, the alphabetic principle in the
direction of reading and spelling, teacher-guided oral reading and discussion of the text, and
specific strategies to improve note-taking for creating written summaries, journals, and personal
reflections (Berninger et al.).

Berninger et al.’s (2013) study contained participants aged 9 to 15 years old, of various
race and socioeconomic status. Participants were randomly assigned to treatment group A or B
for a 30-week reading-writer’s workshop. Groups met for one-hour sessions, twice per week.
Treatment group A consisted of 10 boys and two girls, while treatment group B consisted of nine
boys and three girls. To explain the difference between male and female participants, the
researchers noted that boys with dyslexia were more likely than girls with dyslexia to experience
writing difficulties (Berninger et al.).

Berninger et al.’s (2013) study was comprised of four steps, or treatments. After each
treatment, group A and B were compared for spelling and decoding rate. The first step acted as a
baseline and was given to both groups for six lessons. Step one began with the use of
Berninger’s *Talking Letters* program, where students looked at and touched a grapheme, named
the word in which the grapheme was used, and pronounced the corresponding phoneme. This
knowledge of grapheme-phoneme correspondences (gpc) was then applied to pseudowords.
Participants received immediate teacher feedback and their progress from session to session was
visibly charted. Each lesson concluded with teacher-guided oral reading and a discussion of the
text (Berninger et al.).

For step two of Berninger et al.’s (2013) study, both groups continued to receive step
one’s treatment; however, group A also received instruction in the alphabetic principle to
improve spelling. In contrast, group B received instruction in phonological awareness, that
included clapping the number of syllables in a word and holding up fingers for the number of phonemes in a syllable. Both groups concluded with teacher-guided oral reading, discussion of the text, and a writing activity (e.g., summarizing, journal writing, or a book review) (Berninger et al.).

Step three of Berninger et al.’s (2013) study contained four lessons. Group A continued to receive alphabetic principle training from step two in the direction of both spelling and reading, while group B continued to receive phonological awareness training in the reading direction only. Additionally, group A began orthographic training using two strategies: Photographic Leprechaun and Proofreaders’ Trick. A list of target words was used for both strategies. Photographic Leprechaun was a six-step process where the student (1) looks at a target word, (2) names each letter in the word, (3) closes eyes and visualized the word, (4) names letters in various positions of the word, (5) opens eyes to check for accuracy, and (f) receives teacher feedback. The same set of target words was then used for Proofreaders’ Trick—a three-step process where the student (1) looked at the target word, (2) closed eyes and visualizes the word while spelling it backwards, and (3) opened eyes to check accuracy. In addition to alphabetic principle training and orthographic training, group A also began a rapid accelerated reading (RAP) program on the computer, in which students’ reading rate and comprehension accuracy were assessed using a pretest. When using RAP, reading passages were presented to students at a rate somewhat faster than their pretest rate. Students’ comprehension was assessed for each presented rate. As students met the comprehension criterion for each rate, the rate of passage presentation decreased. With this, letters disappeared from words on the monitor, requiring students to access their working memory, while retaining meaning from the text. Both
groups concluded with teacher-guided oral reading, a discussion of the text, and a writing activity (Berninger et al.).

Finally, step four of Berninger et al.’s (2013) study consisted of 12 lessons, in which group A received training in morphological awareness, using sorts of inflectional and derivational suffixes and true versus pseudo prefixes and suffixes. In contrast, group B received training in the two orthographic strategies, Photographic Leprechauns and Proofreaders’ Trick. Both treatment groups completed teacher-guided oral reading, a discussion of the text, and a repeated oral reading to improve fluency. The groups concluded step four by learning to apply self-regulation strategies for expository writing (Berninger et al.).

The results of Berninger et al.’s (2013) study demonstrated word decoding was easier to remediate in students with dyslexia than spelling. Groups A and B demonstrated similar scores on pretest measures of spelling and phonological decoding rate. Similarly, both groups improved on their real word spelling and phonological decoding rate by the end of the study, but neither group improved on pseudoword spelling. This suggests that students with dyslexia need more spelling remediation than word decoding remediation.

Additionally, step one’s use of the *Talking Letters* program, in which grapheme-phoneme correspondences were taught, proved to be effective for both groups. For both groups, step two revealed alphabetic principle training in the direction of reading when combined with alphabetic principle training in the direction of writing or phonological awareness training is not advantageous. At the end of step three, group A showed greater improvement than group B in phonological decoding after having been trained to use orthographic strategies, Photographic Leprechaun and Proofreaders’ Trick, and RAP. This suggests that students with dyslexia should receive instruction using orthographic strategies and RAP combined with alphabetic principle
training. Finally, step four demonstrated providing students with dyslexia with training in morphological strategies or training in orthographic strategies alone did not improve phonological decoding. However, these strategies may be effective when combined with alphabetic principle training (Berninger et al.).

Little is known about the study and learning strategies post-secondary students with dyslexia use to be academically successful. In 2008, Canadian researchers Kirby, Silvestri, Allingham, Parrila, and La Fave conducted a study of 102 post-secondary students, 36 being dyslexic and 66 being “typically achieving students” (p. 88), to better understand the learning and study strategies college students with and without dyslexia use, and the link of these strategies to their reading ability. The researchers hypothesized that students with dyslexia would most likely employ a surface approach to learning due to their difficulties with word recognition and spelling. They also hypothesized that the strategies employed by students with dyslexia and strategies employed by students without dyslexia would correlate to reading ability (Kirby et al.).

For their study, the researchers measured reading speed and comprehension, word reading ability (only for students with dyslexia), reading history, approaches to learning, and learning and study strategies. To measure reading rate and comprehension, researchers used the *Nelson-Denny Reading Test, Form G*. To measure the word reading ability of students with dyslexia, researchers used the Word Identification subtest of the *Woodcock Reading Mastery Test Revised*. The researchers used the *Adult Reading History Questionnaire Revised* to determine participants’ reading activity and ability. The *Study Process Questionnaire Revised* was given to participants to measure their approach to learning (surface or deep). Finally, the
researchers measured participants’ use of learning and study strategies by administering the *Learning and Study Strategies Inventory 2*.

Kirby et al. (2008) found that the students with dyslexia and the typically achieving students differed most in their word reading ability and their history with reading. The results of the Word Identification subtest of the *Woodcock Reading Mastery Test Revised* indicated that the students with dyslexia had an average word reading ability age of 13.0 years, well below that of their 20-year-old post-secondary peers. The results of the *Adult Reading History Questionnaire Revised* indicated students with dyslexia experienced almost twice as many difficult reading experiences in their pasts compared to the typically achieving students. Additionally, the researchers found a significant difference between the two groups’ reading rate and comprehension. Because the significance was not as great as the difference between the two groups’ word reading ability and reading history, the researchers believed this data represented the strategies students with dyslexia employ to overcome some of their reading difficulties. Kirby et al. also believed if the measures of reading rate and comprehension were not timed, the students with dyslexia would have performed better. Additionally, the results of the Learning and Study Strategies Inventory 2 indicated students with dyslexia employ time management strategies and study aids more so than typically achieving students, but less often select main ideas as a learning strategy or use test-taking strategies. Finally, the *Study Process Questionnaire Revised* revealed that students with dyslexia reported a deeper approach to learning than their typically achieving peers. Kirby et al. found these results alarming, as the learning and study strategies students with dyslexia employ are typically associated with a surface level approach to learning.
The researchers explained the inconsistency in the results of their study as the ability of adults with dyslexia to employ strategies, such as the use of study aids and time management, that allow them to have a deeper meaning of the material that is difficult for them to read, comprehend, and remember. Because students with dyslexia cannot understand difficult text material at a surface, or rote memorization level, adult students with dyslexia who have made it as far as post-secondary school have successfully learned how to employ strategies that allow a deep approach to learning (Kirby et al., 2008).

Summary

Researchers’ knowledge of dyslexia has been growing for over 100 years. In 1896, Dr. Pringle Morgan diagnosed a 14-year-old boy as word-blind, after observing his difficulty spelling one and two syllable words dictated to him, despite his intelligence. In 1917, Hinshelwood also believed that difficulties with reading were connected to a defect in the part of the brain responsible for storing letters and words, and separate from the area of the brain that stores musical notes and numbers. Hinshelwood also noted that congenital word-blindness was more frequently found in boys than girls. In 1925, Orton began using the term strephosymbolia to refer to those students experiencing congenital word-blindness. Orton’s findings led to his belief that reading and spelling should be taught using a systematic approach. In 1956, his belief inspired Gillingham and Stillman to develop a systematic approach to teaching reading and spelling, called the Orton-Gillingham Approach, that incorporated visual, auditory, and kinesthetic methods to learn to read and write.

While dyslexia research has come a long way since 1896, many of its definitions still do not draw attention to the emotional side effects of the disability. In 2003, dyslexia gained momentum in the United Kingdom as a disability. Long et al. (2007) documented a case of an
eleventh grade student who showed improvements in reading and his affective state after receiving specific interventions attending to his academic and emotional needs. Results of Long et al.’s study suggested students with dyslexia believe they are perceived as stupid and belittled by their teachers. Students also perceived their teachers as lacking empathy for their disability. Alexander-Passe (2006) conducted a study to assess how teenage students with dyslexia cope with self-esteem, avoidance, and depression in relation to school. His findings revealed females with dyslexia suffer from low self-worth and low academic self-esteem. To cope, they use emotion and avoidance-oriented strategies. Conversely, males with dyslexia tend to experience normal academic self-esteem and use task-based coping strategies.

Polychroni et al. (2006) conducted a study of 32, 10 to 12-year-old students with dyslexia and their motivation for reading in comparison to their peers. The results of three different assessments revealed students with dyslexia perceive themselves as having a low self-concept of their academic abilities, an attitude towards reading not as a means of achieving in school or as a means for enjoyment or personal development, and a surface approach to learning.

The latter portion of this chapter focused on specific ways to remediate the academic needs of the student with dyslexia. In 1998, Brooks and Weeks conducted a three-week study employing three different spelling strategies to determine if students with dyslexia would experience greater spelling gains using visual and semantic-based teaching methods. Results of the study showed the dyslexic group made the greatest spelling gains the week they used the visual/semantic method, proving students with dyslexia learn spellings best when meaning and visualization is brought to the word. Additionally, the tracing method was least effective for all three groups.
In 2012, Snowling and Hulme evaluated the effectiveness of several intervention programs for students with dyslexia and concluded the most effective intervention program for improving the decoding skills of students with dyslexia includes instruction in phonological awareness and letter-sound relationships, reinforced in the context of real reading, and the most effective intervention for children entering school with poorly developed speech and language, specifically a decoding deficit, is one that includes instruction in phonemic awareness and letter-sound relationships, reinforced with reading instruction.

Berninger et al. (2013) conducted a study of 24, 9 to 15-year-old students with dyslexia to determine effective writing instruction to remediate word decoding and spelling difficulties. The results of their study proved that word decoding is easier to remediate in students with dyslexia than spelling; therefore, students with dyslexia need more spelling remediation than word decoding remediation.

In 2008, Kirby et al. conducted a study of 102 post-secondary students, including 36 dyslexic students and 66 being typically achieving students, to better understand the learning and study strategies college students use and to link these strategies to reading ability. The results of their study indicated the students with dyslexia had an average word reading ability of 13.0 years, well below that of their college peers. Additionally, students with dyslexia experienced twice as many difficult reading experiences in their pasts compared to their peers. Surprisingly, Kirby et al. found that students with dyslexia reported a deeper approach to learning, with the use of study aids and time management, than their typically achieving peers. While other researchers, such as Polychroni et al. (2006), have found younger students with dyslexia to employ a surface approach to learning, Kirby et al. explained that students with dyslexia who have made it to post-secondary school have successfully learned how to employ strategies that
allow for a deep approach to learning. Similar to Brooks and Weeks’ (1998) findings of using visual/semantic methods to teach spelling to students with dyslexia, attaching meaning to difficult text is most effective for comprehension as well.
CHAPTER III. METHODS AND PROCEDURES

We live in a society where a linguistic expression of knowledge is valued as the primary determiner of intelligence. We also live in a society where individuals tend to assess their self-worth based on how others value them. With these two factors in mind, it is not surprising to learn that students with dyslexia, whose disability inhibits them from successfully expressing themselves linguistically and acts as a catalyst for others to perceive them as unintelligent, develop low self-esteem. As Edwards (2004) suggested, dyslexics live in a society that primarily interprets understanding as a linguistic output of knowledge, and fails to see the gift that dyslexics typically hold in the visual/spatial arts.

Rosenthal (1973) argued that initially, children with dyslexia are not emotionally disturbed or poorly motivated. It is not until they realize how others perceive them, generally as lazy, stupid, unmotivated, and/or psychologically or behaviorally dysfunctional, they begin to develop low self-esteem. Rosenthal’s study of 60 boys, aged 8 to 14 years old, compared the self-esteem of 20 boys with dyslexia to 20 boys with asthma and 20 boys with no reading disability. He found that the 20 boys with dyslexia, whose disability was not visible like those diagnosed with asthma, experienced lower self-esteem than the other two groups. Rosenthal believed this was a direct result of adults who are compassionate towards those children whose physical disabilities are visible, but become frustrated with those children who cannot read without visible cause.

The heart of Rosenthal’s argument is at the heart of this study: emotional disturbance and poor motivation found in students with dyslexia are manifested in societal reactions to students with dyslexia and their symptoms. It is society’s reaction, more specifically educators’ reactions, that ultimately leaves students with dyslexia feeling inadequate in an environment that does not
value their worth. It was the aim of this study to (a) examine the self-esteem of students with dyslexia, (b) uncover their ability to develop strategies to compensate for reading, and (c) share these self-generated strategies with other educators to help them better understand students with dyslexia and their needs. The specific research questions for this investigation were: What is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading? Chapter III contains a detailed description of the methods and procedures used to complete this investigation.

Methods

Research Design

Due to the personal nature of this study, a semi-structured interview was best for retrieving the needed data, as it is an effective means “for gaining insight into problems that are not immediately perceptible but that nonetheless cause concern in certain areas…of the population” (Laforest, 2009, p. 1). While other research methods, such as a survey, may collect generalized data, a semi-structured interview inherently offers flexibility in the questions that are asked, making it possible for the interviewer to ask only those questions that are relevant to the participant’s responses. If after a participant responds to a question, more information is needed, additional questions may be asked to obtain clarity. Additionally, semi-structured interviews are designed to ask open-ended questions, allowing ample time for the interviewee to do most of the talking. A semi-structured interview is the only research design that allowed the researcher to gain insight into a problem that required the subjects to share individual experiences with and strategies for reading.
Once the interviews were completed, each participant’s responses were presented as a case study to provide “the story behind the result” (Neale, Thapa, & Boyce, 2006, p. 3). The purpose of a case study is to provide a context for data that would otherwise not be complete. Additionally, presenting the data first as a case study was appropriate for this particular study, as it allowed the researcher to provide specific details of each individual’s experience with dyslexia, thus allowing the reader to gain more insight into why the individual may have responded to a particular interview question in such a way (Neale, Thapa, Boyce).

While each interview lasted between 30 and 60 minutes, it was important that the researcher presented the most important information from the interview in the most concise way possible. This efficiency is another characteristic of the case study design. To ensure validity and reliability of each case study, participants were asked the same interview questions. While there is no template for writing a case study, the researcher created a format that was used as an organizational structure to present each case (Neale, Thapa, & Boyce, 2006).

**Participants**

Five individuals, one in middle school, two in high school, and two in college, who have been diagnosed with dyslexia, participated in this study. The study included an unpredicted mixture of male and female subjects. Participants were recruited through private recommendation and from a dyslexia testing and tutoring center located in Toledo, Ohio.

The first participant was a 26-year-old female, completing her last semester of private college as a social work major. She was first diagnosed as severely dyslexic in third grade, and received the same diagnosis in fifth grade when she transferred to a neighboring school district.
The second participant was a 37-year-old college female just beginning a graduate program in autism spectrum disorders at a public university. She was diagnosed as dyslexic her third year in college.

The third participant was a 16-year-old eleventh grade male who had attended public and private schools and was most recently attending a local charter school. He was diagnosed with dyslexia in fourth grade.

The fourth participant was a 17-year-old eleventh grade female who has attended the same private school from first grade to present. She was diagnosed with dyslexia in fifth grade.

The fifth participant was a 13-year-old seventh grade female who had attended public and private schools and was most recently attending a local charter school. She was diagnosed with dyslexia in first grade.

**Instrumentation**

A majority of the interview questions were borrowed and adapted from Glazzard’s (2010) study in which he used a semi-structured interview design to gather information from nine individuals aged 14 to 15 who had been diagnosed with dyslexia. While this study similarly contained a small sample size, it was extended to students with dyslexia of varying ages and who came from various socioeconomic backgrounds.

The semi-structured interview contained questions in five categories (see Appendix A). The first category was labeled *Introductory Questions*. Questions were asked related to the school the interviewee was currently attending, information about the student’s feelings about dyslexia, questions about difficulties learning at school, and how these difficulties were overcome. Category two was labeled *Social Comparisons and Self Esteem*. This section asked students with dyslexia about their feelings towards reading and writing when compared to their
peers, and their career goals. *Peer Relations* was the third category of questions. This section addressed positive and negative experiences the student with dyslexia may have experienced. The fourth category was *Pupils’ Experiences With Teachers*. Specific questions were asked about students with dyslexia’s interactions with teachers. The final category, which was not included in Glazzard’s (2010) study, was called *Reading and Writing Strategies*. This section asked students to share strategies they use when reading and writing, including where they learned those strategies.

**Procedures**

This investigation began with a review of research related to students with dyslexia and the impact of dyslexia on reading and writing performance. Once the literature review was completed, an interview form was created to best meet the purpose of this investigation. Glazzard’s (2010) semi-structured interview format was selected for this investigation; however, some modifications were needed to collect the appropriate data for this investigation. Glazzard’s format included questions for gaining information about a student with dyslexia and his/her experiences with peers, teachers, and social comparisons, intended to gain insight into the self-esteem of a student with dyslexia. While exploring the self-esteem of students with dyslexia was one purpose of this study, this investigation also sought to gain insight into strategies these students use to help them read and write. Therefore, a fifth section was added to Glazzard’s semi-structured interview, entitled *Reading and Writing Strategies*, to gain the appropriate information for this study’s purpose.

Next, participants were recruited. The middle school participant for this investigation was recruited from a local dyslexia testing center in which the researcher received approval to recruit. Because it was not appropriate for the researcher to specifically ask for students with
dyslexia, the researcher worked with the director of the testing center to seek consent on behalf of the researcher. The researcher provided the director at the testing center with consent and assent forms to give to students who met the requirement of being dyslexic. The consent and assent forms detailed the nature of the study, the protections for participants during the interview, and the confidentiality of all information gathered. The consent form also included permission to record the interview. If the guardian and student agreed to participate in the study, and returned the consent forms, the researcher then contacted the guardian to schedule an interview. The administrators and director only sent identifying student information once consent/assent had been granted (See Appendix B for the approval to recruit letter. See Appendix C for the consent and assent forms.)

Two college level participants were recruited through private recommendations. These recommendations came from college faculty and staff familiar to the researcher. The researcher did not know the participants. The faculty and staff were provided with assent forms to provide possible participants. The participants returned these forms to the faculty/staff member who informed them of the study, who then return the assent form to the researcher if the student had agreed to participate in the study. (See Appendix C for the college level assent form.)

Once the participants had been identified, the interviewer established with each participant a location for the interview that was “neutral, confidential, comfortable, quiet, free of distractions, and easily accessible” (Laforest, 2009, p. 3). The interviewer suggested the library closest to the participant, as a study room could be reserved for the day of the interview. Once a location was established, a date and time for the interview was agreed upon. To ensure participants arrived for their scheduled interview, the interviewer called all interviewees the day before their interview to remind them of the date, time, and location they were to meet.
The semi-structured interview was designed not to exceed 60 minutes to ensure the interviewer or interviewee did not lose concentration. While timeliness was an important aspect of the interview design, it was equally important that the interviewer did not rush pauses or silences in the interview, as it is considered normal and expected for participants to stop speaking when gathering their thoughts in response to a question (Laforest, 2009).

On the day of the interview, the interviewer introduced herself and reminded each participant of the study’s purpose. While semi-structured interviews are flexible, they require rigorous planning. For this study, a list of questions was pre-written in preparation for the interview. Reworded and/or clarification questions were also pre-written to prepare for the participants and their varying ages and/or socioeconomic statuses. Careful attention was taken to develop an interview containing only open-ended questions, as it is the nature of this research design to afford the participant the opportunity to elaborate his or her responses. In the event a close-ended question was asked, a follow-up, or prompt question was asked to ensure clarification of the interviewee’s response. While it was important for the interviewer to gather enough information in response to a question, it was also important the interviewer did not judge the participant’s responses or suggest answers (Laforest, 2009). After the interviewer asked all relevant interview questions, each participant was given the opportunity to make additional comments about being dyslexic.

Data Collection

The overall goal of this study was to obtain self-generated compensatory strategies for reading from dyslexic students. These strategies will be shared with educators who may not understand the full nature of the disorder. Built into the study were questions to gain perspective of the student with dyslexia’s experiences in the classroom, especially in regard to teacher
responses to dyslexia. In addition, data were collected that exemplified how these teacher responses affect dyslexic students’ self-esteem.

Data Analysis

Due to the amount of qualitative data collected throughout the five semi-structured interviews, the data was first presented as case studies that included individual themes, and then analyzed for common themes that emerged among the participants’ responses. Two overall themes were drawn from the interviews, acting as an organizational framework for presenting a large amount of qualitative data (Laforest, 2009).

Summary

When compared to their peers, students with dyslexia are inhibited from expressing their knowledge linguistically, often leaving them to feel inadequate in a society that values linguistic expression as almost the sole measure of intelligence. In addition, studies have shown that adults begin to label students as lazy or stupid when their disability does not have visible cause, such as that of dyslexia, whose origin is neurological. While dyslexic students often experience low self-esteem as a repercussion of how they are viewed by adults, more specifically their teachers, these same students obtain the uncanny ability to create self-generated strategies to cope with reading. It was the aim of this qualitative study to employ a semi-structured interview design, as it is composed of a series of flexible, open-ended questions that require the interviewee to do most of the talking. Using this design, the researcher gathered insight into five individuals’ experiences with dyslexia, including how they believe they are perceived by their teachers and peers, how these perceptions affect their self-esteem, and how their self-generated strategies for coping with reading might be helpful to educators and other students with dyslexia.
CHAPTER IV. DATA ANALYSIS AND DISCUSSION OF RESULTS

This investigation sought to identify compensatory strategies that students with dyslexia have developed, and to share those strategies with educators and students with dyslexia alike so they may be successful in the academic arena. It was also the purpose of this study to investigate how students with dyslexia believe they are perceived by their teachers, and to gain some insight into why students with dyslexia may not be receiving the reading help they need. The specific research questions for this investigation were: What is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading?

This chapter presents a case study of each participant that includes the overall theme these individuals conveyed during his/her interview. Following, study themes are provided to support each research question, presenting a cumulative analysis of what the data suggests.

Case Studies

Emma (pseudoname) is a 26-year-old college female completing her final semester of a four-year social work program at a private university. She was diagnosed with severe dyslexia in third grade. A theme of frustration was conveyed during Emma’s interview, in which she described not only her frustration with being a student with dyslexia, but also her teachers’ frustration as well. She said, “Some days are terrible…You stumble on your words. You get frustrated. The more frustrated you get, the harder it is to get out what you want to say…It can affect your mood…You get overwhelmed. There’s so many mixed feelings.”

Julie (pseudoname) is a 37-year-old college female just beginning a graduate program in autism spectrum disorders at a public university. Unlike Emma who was diagnosed early on, Julie was diagnosed her third year in college. Similar to Emma, Julie conveyed a theme of frustration throughout her interview. Her frustration seemed to be more intrapersonal with the
time and effort it takes her to complete a task. She said, “I do recall frequently feeling defeated and stupid because everything took so much longer and I still was not 100% clear on content.”

Frank (pseudonym) is a 16-year-old eleventh grade male who has attended public and private schools and is now attending a local charter school. He was diagnosed with dyslexia in fourth grade. There were several themes that arose during Frank’s interview, all focused on ways to help a dyslexic student be successful. Themes included tutoring early on; incorporating technology into the classroom, such as iPad use, to compensate for the one-on-one assistance dyslexics require; accepting that the student must work hard; and finding a school that teaches conceptually rather than for rote memorization. Frank said, “I’m lucky to know that I have it [dyslexia]. I spend a lot of time, and I know what helps me…the school that you go to makes a really big difference...as a student with dyslexia, succeeding is a big combination of you putting in the extra work and school having the right fit.”

Susan (pseudonym) is a 17-year-old eleventh grade female who has attended one private school from first grade to present. She was diagnosed with dyslexia in fifth grade. During Susan’s interview, two themes seemed to emanate from each response—dyslexic students should not be afraid to ask for help and they should not get hung up on the little things, such as specific words; instead, they should focus on the big picture, as the goal is to make progress. She said, “So much time is absorbed focusing on the little bits, when I think sometimes, we need to focus on the big picture. Let’s compensate with what we have and then we can go back to the little stuff later on.”

Sally (pseudonym) is a 13-year-old seventh grade female who attended public and private schools and is now attending a local charter school. She was diagnosed with dyslexia in first grade. Several themes arose during Sally’s interview, including listening over note-taking,
using extended time to relieve pressure of time constraints, and staying motivated to do well academically by being challenged and earning good grades. She said, “I don’t like using it [extended time] all the time…I’m not trying to take advantage of my accommodations…I like having them as an option…I love how they’re [teachers] adjusting around it so I can still have a little bit of challenge instead of being treated like a kindergartener.”

Data Analysis

Themes

Parental and Teacher Support Equals Positive Self-Esteem

Parental Support. Those participants who appeared to convey the most positive self-esteem seemed to be the same participants who felt supported by their parents and a majority of their teachers. While the study did not specifically seek information about parental support, four of the five participants mentioned their parents as a means of support for their dyslexia. One way parental support for participants’ dyslexia was conveyed was through providing the financial means to pay for early, one-on-one tutoring at a dyslexia testing and remediation center outside of school. The dyslexia specialists not only provided each student with a thorough assessment of his or her dyslexia, they also provided one-on-one tutoring specific to the student’s needs. All three of the participants who received this specialized tutoring participated in intense instruction in phonemic awareness.

In speaking with the parents of those participants who were tutored one-on-one, these parents appeared to have a great understanding of their child’s dyslexia and ways to help their child be successful in school. (It should be noted that the researcher only had the opportunity to speak to the parents of those participants who were under 18, as their parents were present during the interview but in another room.) With the knowledge gained from tutoring, these parents were
actively involved in advocating for their child’s needs within the school by helping teachers to better understand dyslexia and strategies that help their child. During her interview, Susan mentioned a time her parents had to have a meeting with one of her teachers who did not understand her dyslexia and would yell at her for not keeping pace with the other students. Her parents helped this teacher to better understand what their daughter meant when she would say to him, “I have dyslexia. I cannot do this,” and that she just needed more time to complete the work. In addition to playing advocate, three of the five participants described how their parents would help them review material after school and/or help them with homework.

Teacher Support. Four of five participants perceived most teachers to be supportive of their dyslexia; however, all participants described at least one negative experience with an unsupportive teacher. Emma was the only participant who responded with a firm “no” when asked if she believed teachers were supportive of her dyslexia. She believed strongly that very few teachers actually understood dyslexia, blaming a lack of public awareness for their ignorance. She noted that her teachers’ negative attitudes and frustration were written all over their faces. She said, “If the directions weren’t clear, I’d have to say it doesn’t make sense. That drove a lot of teachers crazy. The teachers would get frustrated and call me all sorts of names—brat, never stupid to my face, but given looks that suggested I was stupid from a special education teacher.”

In contrast to Emma’s negative experiences with teachers, Julie thought most of her teachers have been supportive. However, she did describe one professor who told her as a graduate student, she was not entitled to academic accommodations. This made her feel panicked, angry, and set for failure.
Frank repeatedly noted his appreciation for the support from his current school that focuses heavily on conceptual learning rather than his previous school that sought rote memorization. At his previous school, 12 faculty and staff were fighting to get rid of his 504 plan, saying he no longer needed it because he rarely used his accommodations. Frank said they didn’t understand how hard he was working to “barely squeeze through.” At his current school, Frank believed most of the accommodations written into his 504 plan were already implemented into the classroom. Because of this, he tends not to use his accommodations much, but the school is supportive of keeping his 504 plan accommodations in place to ensure he has them for college if needed.

Susan was also positive about the support she received from the school she has attended since first grade. The teachers seemed to understand her need for extended time and her need to listen to the audio version of her English textbook when silently reading. They also support her dyslexia by not deducting for spelling and creating a comfortable environment where she is not afraid to ask for help. Similar to Julie and Frank, Susan also mentioned an instance where a teacher was not supportive because he did not understand her dyslexia and her parents intervened.

Finally, Sally expressed that, generally, she feels supported by her current school. Similar to Frank’s experience, Sally believes her current school adjusts well to the accommodations she needs and does not need. She discussed how she does not like to take advantage of her accommodations, and prefers to have them scaffolded. In addition to her accommodations, Sally mentioned how the teaching style makes a difference in whether or not she is successful. For example, rather than having to take notes while listening to her social studies teacher lecture (which would be extremely difficult for Sally), the teacher types out all of
her notes, expecting students to highlight the notes for key details. Additionally, she allows students to use their notes on tests and provides study guides. While Sally believes teachers are more supportive than not, she thinks some teachers view her dyslexia as what she cannot do as opposed to what she can do. For example, Sally described a time her cello teacher assumed the reason she did not practice over break was because of her dyslexia, where the participant admits she simply forgot to practice. She also mentioned her science teacher several times throughout the interview, who “scowls” at her when she asks for help.

Peer Reactions. The participants’ self-esteem seemed most affected by the amount of perceived support from their parents and teachers. While all participants answered questions probing for information about their peers’ reactions to their dyslexia, all participants did not appear threatened by these perceptions. All participants mentioned that they do not introduce themselves to their peers as being dyslexic. If their peers did find out about their disability, it may have been through (a) slow reading in the classroom, (b) being pulled from class for special instruction, and/or (c) confiding in peers they deemed friends. The participants’ comments about peer perceptions seemed to fit into one of three categories: (a) they conveyed a sense of sympathy; (b) they treated the participant as stupid or odd, or (c) they perceived the participant as smart. To exemplify the first peer reaction, Sally said, “Something came up that I was dyslexic. I was reading really slow and I made a joke about being dyslexic. [My friend] was like, ‘No! You never told me! Are you okay?’ It was so interesting how she responded.” Emma discussed times when peers treated her negatively because of her dyslexia. She said, “When they don’t know it [that you have dyslexia], they treat you like you’re dumb. For some people who kind of get the idea of it, they’re a little understanding, but they’re kind of on the off side—they don’t know what to say; they don’t know how to approach you; they think you’re so different
they can’t relate.” Conversely, Frank said, “I don’t think they [my peers] think of me as dyslexic because it doesn’t show up that much. I do think I’m viewed as the smart kid because I care and work.”

While participants definitely made notice of their peers’ reactions to their dyslexia, none of these reactions seemed strong enough to break the participants’ resiliency or positive self-esteem. For this reason, self-esteem appeared closely linked to resiliency: the more resilient a participant conveyed himself or herself to be, the greater level of self-esteem he or she seemed to hold. It is not clear if resiliency influenced self-esteem, self-esteem influenced resiliency, or their relationship was reciprocal. It was clear, however, that all participants displayed a level of resiliency—a willingness to ask for help even if a teacher seemed annoyed or frustrated and a willingness to keep trying or try harder if a task appeared easier for peers. Even when participants believed they were behind in comparison to their peers, their confidence in themselves and/or drive to succeed pushed them through the completion of the task. Sally said, “When my peers are having an easier time with stuff, I feel a little bit behind and I think I’m slacking, so I just pick up the pace and get stuff done and ask many questions.”

Resiliency Equals a Plethora of Compensatory Strategies

For students with dyslexia to keep trying or try harder to complete tasks and keep up with their peers, they have acquired an unbelievable variety of compensatory strategies, shown to them by a teacher or parent or self-taught. Compensatory strategies were categorized as reading, writing, and word recognition strategies; organization and note-taking strategies; memory aids and math strategies; and advocacy strategies.

Reading, Writing, and Word Recognition Strategies. Reading, writing, and word recognition strategies included numerous compensatory strategies. These included:
1. Find a quiet, distraction-free place to read; (Julie and Susan)

2. Expect to need extra time for reading; (Frank, Susan, Sally)

3. Skim the text to gather the main idea; (Emma)

4. Use context clues to gather the main idea; (Julie, Susan, Sally)

5. If a sentence doesn’t make sense the first time, re-read the sentence; (Emma, Julie, Frank, Susan)
   a. If sentence doesn’t make sense after re-reading, read aloud; (Emma)
   b. If sentence doesn’t make sense after reading aloud, ask to have someone else, such as a teacher or peer read sentence aloud; (Emma, Susan, Sally)
   c. If sentence doesn’t make sense, try flipping the book upside down (Emma);

6. When reading a text, if a particular word is causing confusion with its definition or pronunciation, Google the word for clarification or refer to an online dictionary; (Emma, Julie)

7. Ask to write in books to take notes, highlight, and/or color-code important information; (Emma)

8. Associate different colors with different story characters to aid in comprehension of story plot; (Emma)

9. Avoid reading black text on a white background to eliminate the “white space”. Find a color that works, such as black text on a blue or green background; (Emma)

10. Use tinted reading sheets/colored overlays or reading strips when reading (a color that works); (Emma, Julie)
11. If listening helps, use programs that read text aloud, such as Kurzweil, Learning Ally, or books on tape; (Emma, Frank, Susan, Sally)

12. Take frequent breaks when reading; (Julie)

13. When possible or if school is iPad friendly,
   a. double-tap word for its definition, (Frank)
   b. listen to text read aloud, (Frank)
   c. highlight important text; (Frank)

14. For recognizing an unfamiliar word,
   a. apply knowledge of word parts, such as roots, prefixes, and suffixes, (Frank)
   b. use phonics/syllabication, (Julie, Susan)
   c. look for a word within a word (e.g., ear is in hear); (Emma)

15. When writing/typing, use spell check or autocorrect; (Emma, Susan)

16. Use speech-to-text programs, such as Dragon NaturallySpeaking, to “type” papers. (Emma)

Organization and Note-Taking Strategies. Participants employed a number of different types of organization and note-taking strategies, which included the following:

1. Keep an agenda book to track what and when assignments are due; (Frank)

2. When possible or if school is iPad friendly,
   a. use the Notability app to track assignment due dates and work in order of importance, (Frank, Sally)
   b. type notes rather than write, (Frank)
   c. record lectures or teacher PowerPoint presentations, (Frank)
d. take pictures of teacher notes, (Sally)
e. use copy and paste feature for note-taking and organizing. (Frank)

Memory Aids and Math Strategies. The participants identified a number of memory aids and math strategies they used. These included the following.

1. Create various mnemonics, such as acronyms, rhymes, and songs, for step-by-step processes and math facts, (Emma, Frank)
2. If teacher approves, ask to change problematic numbers, such as 2’s and 5’s, to 7’s to prove you understand the process, (Emma)
3. If you are a visual learner, create a graph to visualize math concept (if applicable). (Frank)

Advocacy Strategies. Several advocacy strategies were identified by the participants. These included the following.

1. Do not be afraid to ask for help if directions or material is unclear, (Emma, Susan, Sally)
2. Ask lots of questions, (Frank, Sally)
3. Ask to use accommodations if needed, (Frank, Susan, Sally)
4. Ask teacher for study guides and/or typed notes. (Sally)

Discussion of Results

This study sought to answer two research questions, the first being—what is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? To answer this question, theme one—parental and teacher support equals positive self-esteem—was detailed. Data analysis revealed that students with dyslexia convey positive self-esteem, despite feelings of frustration and negative experiences linked to their disability, when they feel
supported by their teachers and parents. Peer support (or non-support) does not appear to be a significant variable in determining a student with dyslexia’s self-esteem. This is not to say that peer reactions to dyslexia are not noticed; they simply are not strong enough to break the resiliency students with dyslexia naturally possess.

This first research question was posed not in anticipation of participants commenting on parental support. Perhaps naturally, the researcher assumed there would be some link between teacher, peer, and student (with dyslexia) to self-esteem, as these three entities naturally share the classroom. The inclusion of parental support in the results of this study seem to suggest that while parents are not a physical part of the classroom, they still play a significant role in helping students with dyslexia to be successful.

The second research question this study sought to answer was—what strategies are students diagnosed with dyslexia developing to compensate for reading? To answer this question, theme two—resiliency equals a plethora of compensatory strategies—was detailed. Because students with dyslexia possess such resiliency, they also possess the uncanny ability to acquire a variety of compensatory strategies that may extend well beyond the categories (reading, writing, and word recognition; organization and note-taking; memory aids and math; and advocacy) in which this study revealed. Perhaps this study performed on a larger scale would reveal an even greater variety of compensatory strategies employed by students with dyslexia.

Summary

Data analysis of this research study revealed two major themes that emanated from individual interviews, as well as two major themes that evolved overall. The two individual themes that revealed themselves seemed to reach both ends of the spectrum: frustrations with
being dyslexic and ways to be a successful student with dyslexia. Frustrations with being dyslexic, a focal point that emanated from the college participants’ interviews, were conveyed to be both intra- and interpersonal. Participants revealed they were often frustrated with themselves for the time and effort it takes to complete a task, and they perceived their teachers to be frustrated with their dyslexia as well. In contrast, the younger participants (the eleventh and seventh grade participants) seemed to focus more on ways to be a successful student with dyslexia. Ways included accepting that they must work hard (perhaps harder than their peers); getting one-on-one tutoring early on; using technology in the classroom, especially an iPad which can act as a substitute for the one-on-one attention needed; finding a school that teaches conceptually rather than for rote memorization; asking for help; focusing on the big picture; listening over note-taking; using extended time to relieve the pressure of time constraints; and staying motivated by challenging themselves and earning good grades.

Two overall themes that evolved from the interviews were the correlation of parental and teacher support to positive self-esteem, and an apparent resiliency among participants that has led to a plethora of compensatory strategies. Participants described parental support as providing the financial means to pay for early, one-on-one tutoring, having an understanding of ways to help their child be successful, and advocating for their child’s needs within the school. Participants described teacher support as focusing more on conceptual learning rather than rote memorization, understanding a student with dyslexia’s need for extended time and audio text, creating a comfortable environment where the student is not afraid to ask for help, and adjusting well to accommodations the student needs and does not need. The study also revealed that participants noticed peer reactions to their dyslexia; however, these reactions were unable to break participants’ resiliency or positive self-esteem. It was this resiliency that drove
participants to acquire a plethora of compensatory strategies, categorized as reading, writing, and word recognition strategies; organization and note-taking strategies; memory aids and math strategies; and advocacy strategies.
CHAPTER V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It is estimated that dyslexia affects approximately 5% to 17% of students in the United States. Unfortunately, many students with dyslexia feel they are perceived by their teachers as lazy, stupid, or unable to follow directions. The perceived negative attitude and lack of support from teachers have been found to negatively affect the self-esteem of students with dyslexia. In turn, their self-esteem can affect their motivation to read and/or attend school, their reading achievement, and their overall academic performance. This cyclical effect must be broken if students with dyslexia are to feel supported by their teachers and experience academic achievement. To address this problem, Chapter V ties this study’s findings to theory and research presented in Chapter II, using these correlations to draw conclusions about how students with dyslexia are best supported and thus, can experience academic success. Additionally, Chapter V includes recommendations for future researchers, as well as teachers, parents, and students with dyslexia.

Chapter Summaries

Chapter I defined dyslexia as a specific learning disability, recognized by inaccurate or slow word recognition, poor spelling, possible issues with reading comprehension, and a lack of motivation to read, resulting from a phonological deficit that originates in the brain. Glazzard’s (2010) study found that teachers often misperceive students with dyslexia as lazy or stupid, in turn causing harm to their self-esteem. It was the aim of this study to mend these misconceptions by addressing the following research questions: What is the self-esteem of students with dyslexia based on their self-concept of teachers and peers? What strategies are students diagnosed with dyslexia developing to compensate for reading?
Chapter II provided theory and historical and contemporary research to support the significance of this investigation. Theories included Gardner’s (1991) Multiple Intelligences, Vygotsky’s (1978) zone of proximal development (ZPD), and Erikson’s (1963) theory of psychosocial development. Gardner’s theory says all human beings understand the world in at least one of seven different ways: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal. While our educational system tends to value a linguistic representation of knowledge, students with dyslexia may be better suited to represent their knowledge visually, spatially, or orally. Vygotsky’s zone of proximal development is comprised of a scale that begins with tasks a child can complete on his or her own and ends with tasks a child can complete with guidance from a more-skilled person. As a child becomes more skilled on a particular task, the person offering guidance can lessen the amount of assistance provided, a process known as scaffolding. Vygotsky’s theory supports the notion of this study that teachers should provide students with dyslexia support for comprehending written information and expressing themselves linguistically, as these processes fall into the lower end of their zone of proximal development. Finally, Erikson’s theory of psychosocial development explains how a child’s ego identity, or sense of self, is strengthened only when the child receives praise for real accomplishments that bear value in society. In turn, this praise increases his or her self-esteem. The fourth stage of Erikson’s theory, Industry vs. Inferiority, presents itself as a “make it or break it” stage for children, especially those with dyslexia. When faced with a challenging task that his or her peers can complete, it is up to the student with dyslexia to decide if the task will conquer him or if he will conquer the task. If the student feels the task is insurmountable, he or she may be left feeling inferior to his or her peers, leading to a decrease in self-esteem.
Chapter II went on to describe relevant historical research beginning in 1896 with Dr. Pringle Morgan’s diagnosis of a 14-year-old boy as word-blind and ending in 1956 with a description of Gillingham and Stillman’s systematic approach to teaching reading and spelling, the Orton-Gillingham Approach. Next, contemporary research was presented in two categories: first, studies that draw attention to the emotional side effects of dyslexia and second, studies that focus on ways to remediate the academic needs of students with dyslexia. Studies discussed in the first half of contemporary research revealed students with dyslexia believe they are perceived as stupid and belittled by their teachers. They perceive their teachers as lacking empathy for their disability. Students with dyslexia perceive themselves as having a low self-concept of their academic abilities, an attitude towards reading not as a means of achieving in school or as a means for enjoyment or personal development, and a surface approach to learning. Females with dyslexia suffer from low self-worth and low academic self-esteem. The latter half of contemporary research revealed the most effective intervention program for improving the decoding skills of students with dyslexia includes instruction in phonological awareness and letter-sound relationships, reinforced in the context of real reading. Additionally, students with dyslexia make the greatest spelling gains when meaning and visualization are brought to words. Because word decoding is easier to remediate in students with dyslexia than spelling, students with dyslexia need more spelling remediation than word decoding remediation. Finally, attaching meaning to difficult text is most effective for comprehension as well.

Chapter III described the study design, including how the study would be conducted; the participants; data collection; and data analysis. The study design was two-fold: a semi-structured interview was used for retrieving data, while a case study format was used to present data. A majority of the semi-structured interview questions were borrowed and adapted from a similar
small-scale study conducted by Glazzard (2010) that sought to gain insight into the self-esteem of students with dyslexia based on their perceptions of experiences with their teachers and peers. The study included five participants of unpredicted gender—one middle school student, two high school students, and two college students—recruited from a dyslexia testing and tutoring center or private recommendation. Participants ranged in age from 13 to 37. The major differences between this study and Glazzard’s study were this study included participants of a wider age range and a category of questions during the interview process entitled Reading and Writing Strategies.

Conclusions

Gardner’s (1991) Multiple Intelligences Theory suggests that people learn and represent knowledge in at least seven different ways. However, Gardner argues that our educational system values linguistic representation of knowledge when assessing student knowledge. For the student with dyslexia, who inherently struggles with linguistic representation of knowledge, teachers and schools alike should provide him or her with an alternative means, such as visually, spatially, or orally, to convey his or her understanding. Gardner’s theory was most apparent during Frank’s interview, in which he argued the importance of students with dyslexia finding a school that teaches conceptually (meaningfully), rather than for rote memorization, which is often assessed in a linguistic manner. Frank’s advocacy for a school that teaches conceptually holds grounding in Brooks and Weeks’ (1998) study of effective teaching for students with dyslexia. Their study suggested students with dyslexia are best taught to their strengths, using visual and semantic teaching methods, which they believed would improve students’ overall academic performance, as well as their self-esteem.
Frank’s advocacy for meaningful learning as a high school student defies Kirby et al.’s (2008) belief that students with dyslexia typically employ a surface level approach to learning. Their study revealed that post-secondary students reported a deeper approach to learning than their typically achieving peers. Alarmed by their results, Kirby et al. concluded that adults with dyslexia who have made it as far as post-secondary school cannot understand difficult text at a surface level, and therefore, must employ strategies that allow them to read for meaning. However, Frank’s argument that schools should teach conceptually suggests that even high school students with dyslexia employ strategies that afford them meaningful learning.

In addition to Gardner, Vygotsky’s theory of zone of proximal development (ZPD) supports Frank and Sally’s appreciation of their schools’ and teachers’ deliberate ability to adjust, or scaffold, the accommodations they need to be successful. During her interview, Sally specifically expressed her opposition to taking advantage of her accommodations and her preference to have them scaffolded. Sally’s preference for scaffolding aligned with her desire for challenge, and exemplifies how one’s upper limit of her ZPD can expand to an even greater range of tasks that can be completed with guidance. Further, Vygotsky’s theory rationalizes why students with dyslexia should receive more support from their teachers, as their ZPD for comprehending written information and expressing themselves linguistically is lower than the student without dyslexia. As participants shared during their interviews, teacher support may come in the form of providing extended time, reading text aloud, providing students with audio text, allowing students to take pictures of overhead notes or providing students with a copy of teacher notes, and permitting students to record a lecture to avoid the struggle of listening and taking notes simultaneously.
It is the teacher support participants expressed during their interviews that may have debunked Erikson’s (1963) theory of psychosocial development, specifically the fourth stage “Industry vs. Inferiority”. However, it is possible that the small-scale of this study displayed more positive results than a large-scale study would have. This small-scale study included only five participants, four of whom appeared to display positive self-esteem and all of whom displayed a sense of resiliency. The fourth stage of Erikson’s theory of psychosocial development presents itself as a “make it or break it” stage for children. When faced with a challenging task that his or her peers can complete, it is up to the student with dyslexia (who is very aware he is naturally compared to his peers) if the task will conquer him or if he will conquer the task. Especially when it came to peer-comparison, all of the participants conveyed the sense that no matter what obstacle they faced or how they compared to their peers, they would continue to keep trying. As evidenced in Chapter IV, even when participants believed they were lagging in comparison to their peers, their “industry” pushed them through the completion of a difficult task. Sally shared that seeing her peers have an easier time with a task made her feel as though she were slacking, but motivated her to “pick up the pace” and successfully complete the task.

Four of the five participants mentioned listening to text and/or to their teacher explain a concept as strategies they employ to compensate for their dyslexia. The importance of listening as a strategy for a dyslexic learner dates back to Hinshelwood’s 1917 study, in which he described two observations that exemplified the student with dyslexia’s excellent auditory memory: a) Hinshelwood taught his patients to spell words aloud or mouth the letters of the word to activate their auditory memory or memory of speech movements, and b) teachers believed if their instruction could be entirely oral, the students with dyslexia would be the most intelligent of
their class. While students with dyslexia demonstrate an excellent auditory memory, they struggle to take notes while listening. Sally explained how difficult it is for her to listen to the teacher lecture and take notes at the same time. Her teacher offers support by providing students a typed version of her lecture notes for students to highlight. Hinshelwood’s study explains why students with dyslexia struggle to write words dictated to them. He believed that the graphic motor center, the part of the brain that allows one to write, is not triggered by the auditory center but rather the visual memory center, justifying why listening and note-taking are most difficult for students with dyslexia. In a much later study to Hinshelwood’s, Long et al. (2007) followed Matthew, a high school student with dyslexia, who revealed during an educational psychological assessment that he had difficulty taking notes. After assessing Matthew, the latter half of Long et al.’s study put interventions in place at an attempt to a holistic approach to Matthew’s development as a student. Interventions included teachers not expecting Matthew to take notes from dictation, but rather providing him with handouts containing key points from the lecture—a strategy Sally mentioned during her interview as extremely helpful.

Long et al.’s (2007) study also drew attention to students with dyslexia being penalized for poor spelling. During Matthew’s pre-assessment to intervention, he revealed his resentment towards teachers who singled him out for poor spelling. Similarly to Matthew, Susan expressed how she felt positively supported by her teachers when they did not deduct points for spelling. To compensate for spelling inaccuracies when writing or typing, Emma and Susan recommended using spell check or autocorrect.

Emma and Julie, both college participants, conveyed their frustrations with being dyslexic and with their teachers’ lack of understanding of the reading disability. To avoid condemnation for discriminating against students with disabilities, the United Kingdom began
referencing the DENI’s (1998) *Code of Practice on the Identification and Assessment of Special Educational Needs*, which specifically included in its definition of dyslexia that some children may become severely frustrated. While Emma and Julie’s frustration was evident, this study also made apparent that frustration is closely tied to lack of teacher support, as all participants described at least one instance in which lack of teacher support led to a frustrating experience. Long et al. (2007) argued when students feel supported by their teachers, they are more motivated to be in school and perform better. Additionally, students are more likely to participate in class because they feel comfortable, as Susan mentioned during her interview. At the time of this study, all participants valued school, were enrolled, and were experiencing academic achievement. Further, three of the five participants suggested asking a teacher for help as a compensatory strategy.

The strategy that seemed to be the greatest determiner of positive self-esteem and academic achievement, and was highly recommended by three of the five study participants, was early, one-on-one tutoring. The director of the dyslexia testing and remediation center, from which these three participants were recruited, explained that remediation is comprised of Orton-Gillingham-based programs that begin with phonological awareness training, followed by letter-sound relationships (phonics), reinforced in reading. The design of the one-on-one tutoring students in this study received, and offered as helpful, is regarded by Snowling and Hulme’s (2012) study as the most effective intervention program for students with dyslexia—instruction in phonological awareness and letter sound relationships, reinforced in the context of real reading.
Recommendations

For Future Research

It is recommended that this study be repeated as a large-scale study for two main reasons. A large-scale study may reveal different results for the number of dyslexic students who display positive self-esteem, supporting rather than refuting the fourth stage of Erikson’s theory of psychosocial development. It was explained in Chapter IV that a ratio of 4:1 participants of this study seemed to display positive self-esteem, refuting what Erikson’s theory seems to suggest; within his fourth stage, students with dyslexia face the danger of feeling inadequate and inferior when unable to complete a task his or her peers can complete. A large-scale study may show a greater number of students with dyslexia who exhibit negative self-esteem, an effect that Erikson would most likely have attributed to feeling inadequate and inferior to one’s peers.

Additionally, a large-scale, modified version of this study that includes an equal number of students who received one-on-one tutoring to students who have not received one-on-one tutoring could more accurately state whether or not individualized tutoring makes a difference in the academic and emotional success of a student with dyslexia. Based on this small-scale study, one-on-one tutoring that was tailored to the individual’s needs and included intense instruction in phonemic awareness seemed to be most effective for students with dyslexia. A large-scale study could more accurately attest this point.

If this study were to be imitated on a larger-scale, the researcher of this study would make a time-saving suggestion. For this small-scale study, it was not only difficult to gather willing participants, but participants who had received an official diagnosis of dyslexia. Initially, the researcher intended to recruit from the local public school district in which she teaches; however, she later realized the district does not assess specifically for dyslexia but rather a
specific learning disability. Therefore, before beginning to recruit from a local school district for a large-scale imitation of this study, the researcher should first find out if the district specifically tests for dyslexia. If not, the researcher may want to find a local dyslexia testing center (similar to this study) from which to recruit participants.

Finally, while analyzing the data for this study, the researcher realized that self-esteem appeared closely linked to resiliency: the more resilient a participant conveyed him or herself to be, the greater level of self-esteem he or she seemed to display. However, it was not clear to the researcher whether resiliency influenced self-esteem, self-esteem influenced resiliency, or their relationship was reciprocal. Determining how resiliency and self-esteem influence each other may be cause for future research.

For Practitioners

Based on the results of this study, students with dyslexia seem to display positive self-esteem when they feel supported by their teachers and parents. Teachers can be most supportive of students with dyslexia by understanding that these students tend to be of average to above average intelligence, but do not best convey their knowledge linguistically. Offering students with dyslexia who do not seem to have their own strategies, or working strategies, the opportunity to test the helpfulness of some of the compensatory strategies presented in Chapter IV may be a good starting point for educators looking to be more supportive. Therefore, it is recommended that teachers implement as many of the strategies presented in Chapter IV into their classrooms and they see fit and useful. Teachers may observe that many of the strategies helpful for students with dyslexia will be helpful for other students in their classrooms as well.

Teachers and other school personnel involved with educating students should also familiarize themselves with the dyslexia websites, which can be an extremely helpful resource
for better understanding and effectively remediating dyslexia. Perhaps the most well-known dyslexia website is *The International Dyslexia Association* (www.interdys.org). Currently, the website contains general fact sheets about dyslexia, as well as fact sheets designed for parents, educators, adults, and college students. For practitioners who know little about dyslexia, a great place to start may be to read the general fact sheet entitled “Dyslexia Basics”. This fact sheet briefly describes dyslexia, its causes, its effects and signs, how it is diagnosed, and how this lifelong condition is treated. Another helpful fact sheet is entitled “Testing and Evaluation”. This fact sheet explains why evaluation is important, what components should be considered during the evaluation, and what the evaluation process should include (diagnosis, intervention planning, and documentation). Additionally, the fact sheet explains evaluation can begin as early as kindergarten, which could lead to a diagnosis of dyslexia by the end of first grade. When evaluating a student in the first two years of his or her schooling for being at-risk of having dyslexia, his or her language skills, phonological awareness, memory, and rapid naming ability should be measured. During the second half of first grade, the student’s word reading, decoding, and spelling ability should then be assessed. Finally, the fact sheet indicates signs of dyslexia in elementary, middle, and secondary school students.

As discussed in the previous section of Recommendations, *For Future Research*, it was initially difficult to find students with a diagnosis of dyslexia who could be potential participants for this study. The researcher found that the public school district, as well as local private schools, does not specifically assess for dyslexia. Instead, students who display reading difficulties are lumped into an IEP category deemed specific learning disability, and do not receive specialized instruction intended to remedy dyslexia. It is crucial that educators push for dyslexia testing in school districts where it is not specifically being assessed. With an accurate,
specific reading disability diagnosis of dyslexia, students can begin receiving interventions that address their weaknesses. Students with dyslexia may display a variety of literacy weaknesses, including difficulties with phonological processing, word recognition, decoding, spelling, fluency, reading comprehension, and vocabulary knowledge. Once identified, these students can begin receiving explicit, systematic, multi-sensory instruction, such as that described in the Orton-Gillingham Approach. As this study showed, when students with dyslexia receive the support they need, through the use of compensatory strategies, individualized tutoring, and teacher and parental support, they tend to display positive self-esteem.

For Parents

Finally, parents looking to be more supportive of their child with dyslexia can become their child’s biggest advocate by sharing with unaware teachers what dyslexia is and strategies teachers can employ in their classrooms to help their child. (See Chapter IV for a list of compensatory strategies that have been identified by students with dyslexia as helpful.) Parents should also visit The International Dyslexia Association’s website (www.interdys.org) to learn more about dyslexia. For parents who suspect their child may be dyslexic, visit the site’s Information tab to read the fact sheet entitled “Is My Child Dyslexic?” This fact sheet offers common characteristics of dyslexia and other related disabilities. Another great fact sheet entitled “Managing Your Child’s Education: Creative and Smart Ideas” offers advice to parents on how to best support their child’s learning difficulties. According to The International Dyslexia Association and participants of this study, parental support can come in many forms, including educating one’s self about dyslexia; educating teachers about dyslexia; familiarizing one’s self with compensatory strategies; helping one’s child with reading; and acting as an
emotional support for one’s child. If financially able, parents can also fund one-on-one tutoring for their child that focuses on remediating his or her specific needs.

Summary

Chapter V concluded this study of students with dyslexia by aligning theory and research to the study data. Gardner’s (1991) Multiple Intelligences theory and Brooks and Weeks’ (1998) study supported this study’s findings that students with dyslexia should seek schools that teach conceptually rather than for rote memorization. In contrast, this finding defied Kirby et al.’s (2008) belief that students with dyslexia typically employ a surface level approach to learning, as seeking schools that teach conceptually suggests students with dyslexia employ strategies that allow for meaningful learning. Additionally, Vygotsky’s 1978 theory of zone of proximal development supported study participants’ appreciation of having accommodations scaffolded by school personnel and teachers. Vygotsky’s theory also rationalized why students with dyslexia should receive more support from their teachers. It is the teacher support participants perceived, along with their resiliency to peer comparison, that seemed to debunk Erikson’s (1963) theory of psychosocial development, particularly the fourth stage, “Industry vs. Inferiority”. In fact, Long et al.’s (2007) study argued when students with dyslexia feel supported by their teachers, they are more motivated to be in school and perform well. Hinshelwood’s (1917) study that exemplified the excellent auditory memory of students with dyslexia supported this study’s findings that participants prefer listening to teachers explain a concept, yet struggle to take notes while listening. Aiding this difficulty, Long et al.’s (2007) study rationalized that students with dyslexia should be provided with teacher notes and should not be penalized for spelling errors. While all of these supports help to improve the self-esteem and academic performance of students with dyslexia, this study revealed the greatest determiner of positive self-esteem and
academic achievement is early, one-on-one tutoring. Regarded by Snowling and Hulme (2012) as the most effective intervention program for students with dyslexia, tutoring should include instruction in phonological awareness and letter-sound relationships, reinforced in the context of real reading. Based on all of these findings, the researcher recommended this study be performed on a larger-scale and modified to include an equal number of participants who receive individualized tutoring and those who do not to validate the academic and emotional success tutoring seems to afford. Further research of this topic may also include how resiliency and self-esteem influence each other. Most of all, the researcher recommended ways for teachers and parents to support students with dyslexia, including educating themselves about the disability by visiting The International Dyslexia Association’s website, implementing compensatory strategies offered in Chapter IV, pushing for testing in school districts that do not specifically assess for dyslexia, providing financial support for individualized tutoring, and most of all, being understanding of the disability and its many effects.
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APPENDIX A.

SEMI-STRUCTURED INTERVIEW QUESTIONS
Script

Hello. My name is Nicole Rollins. Over the next 60 minutes, I will ask you several questions that I would like you to answer as honestly and thoroughly as possible. The purpose of these questions is to gain insight into your experiences with reading and writing, your experiences with your peers and teachers, and the strategies you use to help you with reading and writing. Before the interview begins, I would like to give you the opportunity to share with me how you feel about being a student with dyslexia.

Introductory Questions

The following questions will be asked:

Did you/Do you attend a public or private school?

When were you diagnosed with dyslexia?

How did the diagnosis make you feel?

What subjects have you found the easiest to learn at school?

What subjects have you found challenging to learn at school?

Prompt: Did you find it difficult to learn to read?

Prompt: Did you find it difficult to learn to write?

When faced with challenges in school, how have you overcome them?

Prompt: What strategies did you use to work around these challenges?

Social Comparisons and Self-Esteem

When you found something easy, how did you feel in comparison to your peers?

When faced with challenges, how did you feel in comparison to your peers?

Prompt: Can you give me an example of a time when you found something challenging and your peers found it easy? How did you feel?
When you were younger, did you believe that you would do well in school or not so well?

   Prompt: Why did you think this?

Now that you are older, have you changed your opinion about how you will do in school?

   Prompt: If ‘yes’—In what way have you changed your opinion?

   If ‘no’—Can you explain why your opinion has not changed?

What job/career would you like to pursue when you leave school?

   Peer Relations

How do you feel your peers have treated you because of your dyslexia?

   Pupils’ Experiences of Teachers

Have you found your teachers to be supportive of your dyslexia?

   Yes- How did they help?

   No- Why were they not supportive?

   Reading and Writing Strategies

When you have to read, what strategies do you use?

   Prompt: When you see an unfamiliar word, what strategies do you use to determine what word it is? What strategies do you use to determine its meaning?

   Prompt: When you have to spell an unfamiliar word, what strategies do you use to figure out its spelling?

   How did you learn those strategies?

   Do you have some of your own strategies you use?

   What strategies might you use that would help others?

   Is there anything else you want to tell me about being dyslexic?
APPENDIX B.

APPROVAL TO RECRUIT LETTER
Dear Director,

My name is Nicole Rollins, and I am working on my master’s degree in reading at Bowling Green State University. I am focusing my research on students with dyslexia. Because dyslexia is a complex disability that is not fully understood, students with dyslexia are often mislabeled as “lazy” or “unintelligent.” Educators’ negative responses to students with dyslexia have caused these students to develop their own strategies to learn to read. The purpose of my research is to find out what these strategies are and to share them with teachers so they can be better prepared to help students with dyslexia in their classrooms.

The purpose of this letter is to obtain your consent to allow me to recruit participants from your testing center for my study. With your permission, I will provide you with consent and assent forms to distribute to students with dyslexia whom you feel would be an appropriate candidate for this study.

Students whose guardians consent for them to participate in the study will take part in a 60-minute after school interview at a local library, where they will be asked questions about their experiences with reading and writing, interactions with teachers and other students, and encounters with strategies that have helped them with reading. Student responses will be kept confidential, and their names, as well as the testing center’s name, will not be associated with this study. Both the students’ and the testing center’s privacy will be maintained at all times.

Participation in this study is voluntary. The risks in this study are minimal and no greater than those in daily life. The potential benefits of this study include boosting students’ self-esteem and helping classroom teachers better understand the needs of students who are dyslexic.

By signing the form below, you are agreeing to allow me to recruit participants for my study from your testing center. If at any time you have questions about my study, please contact myself (567-288-1326 or nicole.rollins@phoenixtoledo.org) or my advisor, Dr. Cindy Hendricks (419-372-7341 or cindyg@bgsu.edu). Also, you may contact BGSU’s Human Subjects Review Board (419-372-7716 or hsrbr@bgsu.edu) with any questions or concerns about participant rights.

Sincerely,

Nicole M. Rollins
Graduate Student
Bowling Green State University
Please complete the fields below.

I, (Print name) _____________________________________________, consent for the researcher named above to recruit participants for her study from my reading clinic.

_______________________________________________  _________________
(Signature) (Date)

_______________________________________________
(Title)

_______________________________________________
(Name of Testing Center)
APPENDIX C.

ASSENT AND CONSENT LETTERS
Dear Student,

My name is Nicole Rollins. I am a student at Bowling Green State University. You were identified as a student with dyslexia. I would like to learn more about the strategies you use to help you read.

I would like you to be in my study. It will take place one day after school. You will take part in a 60-minute talk with me at a library. I will ask you about your experiences with reading, writing, other students and teachers. You do not have to answer every question if you do not want to.

Anything you share during this study will only be used by me. What you share will be recorded, but will be kept in a secret place. There are no risks to you for taking part in this study.

I would be grateful for your help with this after school study. Taking part in this study is completely up to you. This study will not affect your grades. You can stop being in this study at any time.

Please sign your name below if you want to be in this study. If you have questions at any point, please contact me (567-288-1326 or nicole.rollins@phoenixtoledo.org). You may also contact my advisor, Dr. Cindy Hendricks (419-372-7341 or cindyg@bgsu.edu). If you wish to drop the study, you will also need to contact me or my advisor. You may also contact BGSU’s Human Subjects Review Board (419-372-7716 or hsr@bgsu.edu) with any questions you may have.

Thank you,

Nicole Rollins
Graduate Student
Bowling Green State University

I, (Print name) ________________________________, agree to be in the study described above.

__________________________________________   ____________________
(Signature)                                                                                               (Date)
Dear Student,

My name is Nicole Rollins, and I am working on my master's degree in reading at Bowling Green State University. I am focusing my research on students with dyslexia. Because dyslexia is a complex disability that is not fully understood, students with dyslexia are often mislabeled as "lazy" or "unintelligent." Educators’ negative responses to students with dyslexia have caused these students to develop their own strategies to learn to read. The purpose of my research is to find out what these strategies are and to share them with teachers so they can be better prepared to help students with dyslexia in their classrooms.

The purpose of this letter is to obtain your consent to participate in my study because you are a college student, 18 years or older, with dyslexia. If you agree to participate, you will take part in a 60-minute interview at a local library near you, where you will be asked questions about your experiences with reading and writing, interactions with teachers and other students, and encounters with strategies that have helped you with reading. You can refuse to respond any interview questions you do not wish to answer, or stop participating at any point during the interview. I would also like to gain your consent to record the interview. Recording the interview will allow me to review the responses at a later time to make sure I recorded things correctly in my notes.

Your responses will be kept confidential and your name will not be used in this study. Your privacy will be maintained at all times. All recordings and interview materials will be kept in a locked cabinet, that only I will have access, to ensure total privacy.

Participation in this study is voluntary and will not affect your grades. Deciding to participate or not participate in this study will not impact your relationship with the person who identified you as a potential participant or your relationship with BGSU. In addition, the risks in this study are minimal and no greater than those in daily life. The potential benefits of this study include boosting your self-esteem and helping classroom teachers better understand the needs of students who are dyslexic.

By signing the form below, you are agreeing to participate in this study. If at any time you have questions or wish be removed from the study, please contact myself (567-288-1326 or nicole.rollins@phoenixtoledo.org) or my advisor, Dr. Cindy Hendricks (419-372-7341 or cindyq@bgsu.edu). Also, you may contact BGSU’s Human Subjects Review Board (419- 372-7716 or hsrb@bgsu.edu) with any questions or concerns about participant rights. The interviewer will contact you by phone to schedule an interview time that is convenient for you.

Sincerely,

Nicole M. Rollins
Please return this form to me by ________________, 2014.

I, (Print name) ________________________________________________, consent to participate in the study outlined above.

A phone number I can be reached is _______________________________

_____________________________ _____________________________
(Signature) (Date)
Dear Guardian,

My name is Nicole Rollins, and I am working on my master’s degree in reading at Bowling Green State University. I am focusing my research on students with dyslexia. Because dyslexia is a complex disability that is not fully understood, students with dyslexia are often mislabeled as “lazy” or “unintelligent.” Educators’ negative responses to students with dyslexia have caused these students to develop their own strategies to learn to read. The purpose of my research is to find out what these strategies are and to share them with teachers so they can be better prepared to help students with dyslexia in their classrooms.

The purpose of this letter is to obtain your consent to allow your child to participate in my study. If you grant permission, your child will take part in a 60-minute interview at a local library near you, where s/he will be asked questions about his/her experiences with reading and writing, interactions with teachers and other students, and encounters with strategies that have helped him/her with reading. Your child can refuse to answer any questions he/she does not wish to answer, or stop participating at any point during the interview. I would also like to gain your consent to record the interview with your child. Recording the interview will allow me to review the responses at a later time to make sure I recorded things correctly in my notes.

Your child’s responses will be kept confidential and his/her name will not be used in this study. Your child’s privacy will be maintained at all times. All recordings and interview materials will be kept in a locked cabinet, that only I will have access, to ensure total privacy.

Participation in this study is voluntary. The risks in this study are minimal and no greater than those in daily life. The potential benefits of this study include boosting your child’s self-esteem and helping classroom teachers better understand the needs of students who are dyslexic.

By signing the form on the next page, you are agreeing to allow your child to participate in this study. If at any time you have questions or wish to have your child removed from the study, please contact myself (567-288-1326 or nicole.rollins@phoenixtoledo.org) or my advisor, Dr. Cindy Hendricks (419-372-7341 or cindyg@bgsu.edu). Also, you may contact BGSU’s Human Subjects Review Board (419-372-7716 or hrsb@bgsu.edu) with any questions or concerns about participant rights. The interviewer will contact you by phone to schedule an interview time that is convenient for you and your child.

Sincerely,
Nicole M. Rollins
Graduate Student
Bowling Green State University

Please return this form to me by _________________, 2014.

I, (Print name) _____________________________________________, permit (child’s name)_____________________ to participate in the study outlined on the previous page.

A phone number I can be reached is__________________________________________

_______________________________________________  _________________
(Signature)        (Date)