NASET LD Report #18

Dyslexia: An Upside Down World in a Right Side Up World

By

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Abstract

This issue of ***NASET's LD Report*** was written by Ruth Humbert. Dyslexia is a frustrating learning disability that is over-looked in the education field. Many educators do not have a thorough knowledge of dyslexia. Some educators overlook it as a minor learning disability that in time can be controlled or that is not as severe as many other learning disabilities. Many students have dyslexia and they do not understand why their world is so upside down in a right side up world, until the light is seen at the end of the tunnel. The light is seen when the individual with dyslexia finally receives the help that they are just crying out for. The field of dyslexia is riddled with controversies, from assessment through funding via the very existence of what may be regarded as an inexact syndrome (Smythe, 2011, p. 39). To the student with dyslexia these difficulties are very real, and spread beyond simple reading and writing difficulties in school and later on into adulthood (Smythe, 2011, p. 39). With this research paper I hope to unlock the doors and research the myths of dyslexia. I will use as my variables students with dyslexia and non-dyslexia. These variables are relevant because you can do a comparison and with the comparison it will help in understanding what a student with dyslexia goes through and the struggles and frustrations that they have. This research will also use students in higher education as variables for the understanding of the effect that dyslexia carries on into higher education. An increasing number of students with dyslexia enter higher education, and as a result, there is a growing need for standardized diagnosis (Tops, Callens, & Lammertyn, 2012, p. 186). The hypothesis is; will dyslexia ever have a sound concrete definition, and does the imbalance of the brain cause dyslexia? This issue of NASET's LD Report will address these questions and discuss possible answers based on the research provided.

Introduction

The number of students with dyslexia is increasing. Yet there is so much about dyslexia that is not completely understood. There are many myths about dyslexia that have stirred the curiosity of many researchers and because of this it are causing researchers to find answers so that studies have been more thorough and have had more participants in studies of dyslexia. This is a good thing for educators so that they can have a more thorough understanding of this disorder called dyslexia. I am hoping that with this research that I can open up the doors of understanding about this disorder that does cause much frustration with so many students.

Review of Literature

In the review of literature the main points of dyslexia is that it does not have a real definition and the extent of research that has been done has not be proven to be accurate as the variables have not been of a large community. Dyslexia can be confused with just minor reading difficulties such as lack of phonics, syntax, word recognition, a lack of language development such as; language impairment, and speech disorder. The research will begin with the question, "What is the true definition of dyslexia?" Individuals with developmental dyslexia have difficulties with accurate or fluent word recognition and spelling despite adequate instruction and intelligence and intact sensory abilities (Peterson, & Pennington, 2012, p. 1997). Dyslexia is a neurodevelopmental disorder that is characterized by slow and inaccurate word recognition (Peterson, & Pennington, 2012, p. 1997). In the past five years there has been more research in the understanding of dyslexia and the diagnosis of this learning/reading disability. This brings about the question is dyslexia a learning disability or is it just a disability that affects reading? In the research it has been observed that there is really no reliable way to self-diagnose dyslexia, no at-home test that you can clip from a magazine or buy in a drugstore, no ten easy steps to determining whether you fit the profile or not (Hurford, 1998, p. 109). Hurford mentioned a point of deep thought, "Without proper diagnosis, dyslexics will linger in the shadows; without a diagnosis, they will most likely not get the help that is due them and that will make it possible for them to survive and thrive in school and beyond (1998, p. 110).

The myths that have developed through the years about dyslexia have been proven to be inaccurate because of better testing procedures and more modern, updated knowledge of dyslexia. The conceptualization of dyslexia as an impairment of skill automatisation accord with another important theory, in which deficits affecting the speed and fluency of information processing contribute to reading impairments independent of other factors, especially phonological deficits (Demonet, Taylor, & Chaix, 2004, p. 1452). According to research dyslexia is a reading disability that means there needs to be accommodations for students who are diagnosed with dyslexia. The conceptualization of what reading is and how it is acquired will greatly influence how dyslexia is defined, what researchers think may cause problems in learning to read, and what researchers believe are the most effective intervention strategies for helping students to overcome persistent literacy learning difficulties (Tunmer, & Greaney, 2010, p. 229).

Research shows that students with dyslexia need to see a word as an object instead of a word, for example the word CAT is seen as forty ways to a student with dyslexia. By the time a student with dyslexia does all that is needed to recognize the word, CAT, they will have performed at least 4000 times more computations in their brain than a child without dyslexia. It is true that an individual with dyslexia can think between 400 and 2000 times faster than most other children, but because they have to do at least 4000 times more, they appear very slow (Davis, 2010, p. 87). According to research, what every individuals with dyslexia needs is the ability to think with the symbols and word that trigger disorientation (Davis, 2010, p.63). An individual with dyslexia couldn't give a definition and doesn't have a mental picture of the word's meaning, but until they fully understand the trigger words and know how to use them in their thought process, any remedial work may make the problem worse, not better (Davis, 2010, p.63). Research has shown that individuals with dyslexia need to learn to think with the words that cause disorientation. The way that can move an individual with dyslexia beyond their place of comfort (the comfort zone) is by giving them a method to control the disorientation (Davis, 2010, p.65). Research has shown that once an individual with dyslexia is oriented in their way of thinking or seeing a word, then the words on the page are perceived correctly, without the disorientation. The reading skills of most individual with dyslexia improve dramatically as soon as they begin to use the simple process of orientation (Davis, 2010, p.65). According to some research that if the symptoms of dyslexia are manifestations of disorientation, can be terminated which in turn will terminate the symptoms (Davis, 2010, p.65).

Not all students with dyslexia are alike, these students' intellectual capacity is average to above average and they can be labeled as gifted (Dean, Kupezynski, & Fedynich, n.d. p. 3). There is no formula that will help all dyslexia students. Each student has their own customized plan (Harrie & Weller, 1984, cited by Dean, Kupezynski, & Fedynich, n.d. p. 4). Because of this testing has been known to be both ineffective and effective, it depends on the students severity of dyslexia. One myth that is relevant among educators is that dyslexia is a defect in the visual system, which is to blame for the reversals of letters and words, so eye training has often been prescribed to help in overcoming this visual defect. Research has shown differently, that in contrast to this popular myth children with dyslexia are not usually prone to seeing

letters and words backward (Shaywitz, 2003, p. 40). The root problem is not visual but a linguistic one. Dyslexia is a localized problem (Shaywitz, 2003, p. 40). Since research has recognized that dyslexia is a language and reading problem or a primary visual impairment is a step forward in uncovering some of the myths about dyslexia. Dyslexia researchers have found that the phonological model provides a cogent explanation as to why some very smart people have trouble learning to read (Shaywitz, 2003, p. 40). Decoding is how an individual with dyslexia learns or comprehends. The model for decoding is a cycle starting with concept formation, comprehension, general knowledge, problem solving, vocabulary, critical thinking, reasoning and then back to the beginning, it is a cycle and it can take a long time for a student with dyslexia to decode but when given time they can usually decode what they are reading. When given time and when not pressured to provide instant oral responses, the individual with dyslexia can deliver an excellent oral presentation (Shaywitz, 2003, p.58).

A myth that is linked with dyslexia is; being dyslexia means you are stupid, retarded or lazy. As ignorant this statement may sound, eighty percent of teachers associate the term learning disability with mental retardation or a child is lazy (Foss, 2013, p. 43). The student who has dyslexia is often working two or three times harder just to keep up with their peers (Foss, 2013, p. 43).

Research Design

The following questions are posed for this study. How do individuals with dyslexia see words and decode what is being read? What are the myths that are associated with individuals with dyslexia ? What is the definition of dyslexia and how can it be successfully tested and evaluated? How do students with dyslexia in higher education advance in their training since modifications are not made in college?

This research would be qualitative research which is an inquiry grounded in the assumption that individuals construct social reality in the form of meaning and interpretations and that these constructions are transitory and situations; the dominant methodology is to discover these meanings and interpretations by studying cases intensively in natural settings (Gall, Gall, & Borg, 2010, p. 560). The research would be quasi-experiment which is an experimental study in which the participants for the experiment are selected by a procedure other than random selection (Gall, Gall, & Borg, 2010, p. 560). One area that has been mentioned in research is that individuals with dyslexia have poor motor skills, which results in difficulty of holding a pencil/pen, leading to untidy handwriting. The study contained six participants, these participants were two students with dyslexia, one without dyslexia but tested for ADAD, and one with autism and two without dyslexia. These students were in the fourth grade. The two students without dyslexia were average students in school and mainly received average grades, and were exceptional in handwriting. Of these two average students, one was a left-handed student and the other one was right-handed. The student with autism had an IQ level at 120, and was an average student in handwriting. The students with ADAD were an average learner and were satisfactory in handwriting. The students with dyslexia; one was right-handed and the other students was left-handed. In the study it was noted that both students with dyslexia were not able to form letters and numbers correctly. When asked to write the number nine they both were not able to make the nine in the right direction. The number nine was exceptionally hard for the left-handed student. When asked to write the letters *b* and *d* both students had a hard time writing the letters in the right direction. When asked to do cursive the students with dyslexia really struggled in the formation of the words. The studies were compared to the other four students who were not dyslexia. What was observed is that the one with ADAD had some incoordination skills with holding a pencil but were able to compose the letters and the numbers without any complications, there was no evidence of poor motor skills. The student with autism did show some poor motor skills but not in regard to the reversal of letters and numbers. The two average students did not show any disorientation of letters even though the left-handed student did curve his hand around to write. Studies that have investigated letter orientation confusion in children with dyslexia did confuse the orientation of stimuli more frequently than average students in reception and production tasks, but this is not the sole problem or determinant of dyslexia (Terepocki, & colleagues, 2002, cited by Lee, 2005, p. 180)

Research has discovered that the anxiety level of individuals with dyslexia is high, so in order to evaluate the research the researchers gave out questionnaires to students with dyslexia both in elementary

education and higher education. The researcher gave these questionnaires to parents of dyslexia students as well. The questionnaires are intended to assess the child's attitudes and the baseline in how they can improve. According to Foss, almost all children who have dyslexia – indeed, most adults who have dyslexia–will score very poorly in this assessment/questionnaire the first time (2012, p. 84). The questionnaire will assess the following; resiliency, integration of specific learning disabilities, self-awareness, proactivity, emotional stability, goal setting, social supports, and possibility thinking. This will analysis the key attributes and attitudes and is a string point for trying children to develop the approaches needed to be successful and dyslexic (Foss, 2012, p. 85). The study consist of four students with dyslexia, two are fourth grade students, one sixth grade student, and a freshman in high school. Each student showed great levels of success in certain areas. In the area of resiliency the freshman student scored the highest. In the area of integration of specific learning disabilities each student showed a high level of success. The area of self-awareness the fourth graders showed much success compared to the sixth grader and the freshman. This is due to the fact that fourth graders do not really understand their disability as a deterrent in self-awareness. The question comes up as to why is there a wide gap of difference to a young child with dyslexia compared to the sixth grader and the freshman? The hypothetic answer is because the younger students get more attention and help in this area so that they can learn how to become successful. In the area of proactivity each of the students were rated very high. Emotional stability was another area that was very high in success but it does improve as the child gets older. Goal-setting is a definite area of frustration for all the students. Foss suggests that the students will be able to make substantial progress by taking small steps in setting goals (2013, p. 92). The target population is the individuals having the characteristics that interest the researcher; in this case it would be students in higher and lower education who have dyslexia. The population validity must be demonstrated similarity on variables that are relevant to their research problem among the sample, the assessable population, and the target population (Gall, Gall, & Borg, 2010, p. 131). The evidence of similarity helps to establish the population validity of their sample (Gall, Gall, & Borg, 2010, p. 131). The research that has been conducted in this study does demonstrate the similarity on variable that are relevant to this study.

Most of the research is experimental because the researcher did manipulate one variable to determine the effect on another variable. For example, one test was a reading test, between first graders with poor phonologic ability and poor readers in fifth grader. The experiment in one of the studies showed that children with dyslexia in first grade who scored in the low 20 percent on a test of phonology were reading at a low level when they were in fifth grade, but in contrast the children who scored higher on phonology in first grade were reading at a 5.9 grade lever in fifth grade. A test like this does help the researcher in deciding if the hypothesis is relevant or irrelevant. Hypotheses usually are formulated on the basis of theory and previous research findings (Gall, Gall, & Borg, 2010, p. 127). So in the above example you can see the similarity of the variables and these hypotheses can tell if it is rejected or not rejected. The hypothesis in this study was accepted since there was a difference. This hypothesis does show that students with dyslexia do have problems in all these areas of reading. This hypothesis also shows that early academic intervention is the key to success for students with dyslexia. Lee makes a really great point, "Academic interventions are essential to the success of children with dyslexia and should focus on the student's area of weakness including word recognition, spelling, and decoding (2005, p. 180). In further research it has shown that project-based learning on students with learning disabilities does work on motivation and building their self-esteem. The study continued with two students who have dyslexia. In the study it was observed that project-based learning was not effective with individuals with dyslexia who lack adequate baseline skills in reading and writing. A study is conducted on cooperative learning; the participants are two fourth grade students with dyslexia and two fourth grade students who are excelled students in reading and writing. In the study, individuals with dyslexia were paired with the excelled students, it was noted that the students with dyslexia did more work and were more productive when they had one of their peers with the opposite learning problems work with them. Research on cooperative learning has shown that working in groups positively affects the social acceptance of students with disabilities by their dis-abled peers (Fillppatou, & Kaldi, 2010, p. 18). This research showed to the researcher that low-activity students such as individuals with dyslexia seem to be more active learners when they are working with a mixed ability group. This research is still being tried and conducted with educators. Educators are finding that cooperative, or project-based learning is effective for most students who have learning disabilities including students with dyslexia.

Research was conducted with a test that is used to measure a child with dyslexia anxiety levels. This test is the, Revised Child Anxiety and Depression Scale (RCADS), which is a widely used assessment, tool for children with anxiety levels. Dyslexia does cause high anxiety in a child and it is due to the frustration that

they experience. The full version of this test has forty-seven questions and touches on more elements of life (Foss, 2013, p. 232). The three questions that the test starts off with are; 1. I feel scared when I have to take a test, 2. I worry that I will do badly at my school work, and 3. I have trouble going to school in the morning because I feel nervous. The answer choices are never, sometimes, often, and always. If an individual with dyslexia answers the top three questions as "often" or "always", it is sign that the child is dealing with severe anxiety that is caused from this disorder. These three questions are by no means a definitive test but the test can help researchers to explore the topic of anxiety in regard to dyslexia. The best way to conduct the results of this test was to have two variables, a group of dyslexia students and a group of non-dyslexia students. The results from this test compare the mean and standard deviation. The test that was conducted is a t-test to determine whether each pair of means differed significantly with each other. The t-test can also be used to determine whether the variability of scores for two groups is statistically significant (Gall, Gall, & Borg, 2012, p. 250). As this test was conducted it was noted that the top three questions were of utmost fear/anxiety for individuals with dyslexia. The variables were dyslexia students and non-dyslexia students. There were six students with dyslexia from each grade, first-sixth. The students who were not dyslexia or did not have any learning disability were also one from each grade, first-sixth. As thy age group varied anxiety levels were gradually climbing. It was noted that the sixth graders experience a higher level of anxiety than the first grader. The belief could be that the younger the children are they do not feel anxiety as relevant as the older ones do, but it is not to say that the younger ones do not have some level of anxiety regarding their disability. One important question for a researcher who conducts this RDACS test, "Did the researchers draw tentative, rather than definitive, conclusions about whether observed relationships between independent and dependents are casual in nature?" (Gall, Gall, & Borg, 2012, p. 252). The conclusions that were drawn were observed in a casual way. There was no stress when the test was conducted, it was completely casual and the participants were honest in their answers.

Personal Analysis

The reason that dyslexia is an interest to me is because I have seen many students in school really get frustrated with dyslexia. I wonder many times if it is the fact that they have dyslexia or is it just the fact that no one really understands what someone with dyslexia goes through. So many educators just think that dyslexia is not a serious disorder and that it can be controlled with the right therapy. The harsh realities of the day in and day out experience of living with dyslexia can often clash dramatically with the perceptions of those teachers, administrators, acquaintances and self-appointed opinion makers who question the very existence of the disorder that holds so many captive (Shaywitz, 2003, p. 4).

Dyslexia can be expressed differently throughout a school year, in the early years an educator may notice that the student has difficulty reading words in isolation, make consistent spelling errors with letter reversals, have a difficulty writing numbers in sequence and have trouble with sequencing, and confusion if math signs which is due to the fact that individuals with dyslexia deal with disorientation of words, letters, and symbols. When a student reaches middle school they often read below grade level (Lee, 2005, p. 179). A middle school student will have different difficulties such as; trouble with decoding word problems in math , reversing letter sequences, slow to learn prefixes, suffixes, and root words, recalling facts and comprehension (Lee, 2005, p. 179). In high school and into adulthood the problems would be avoiding writing tasks and continue to spell poorly. According to Lee they could also try to hide their reading disability or avoid written tasks to avoid embarrassment (2005, p. 179).

Almost every teacher in the United States has a student with dyslexia. Dyslexia has been overlooked by many schools and educators. It is sad to think that this disorder that affects at least one student in a class, and there is not help that is needed to help these students to be successful in school due to state policies that have been established. Having information about the likely explanation for and potential cause of the student's difficulties often relieves teachers' fears and uncertainties about how to teach the student and how to think about providing instructions that is relevant and effective (Hudson, High, & Otaiba, 2007, p. 1). There was a surprising discovery of some teachers when asked about dyslexia they would ask, "What is dyslexia?" This is sad that colleges and schools are not properly training teachers about dyslexia. No wonder there is so much frustration for individuals with dyslexia, in such an up right side world. There is so much research on dyslexia if only the research would be used to educate our educators about this disorder, then there would not be the uncertainties of this disorder and more individuals with dyslexia could receive the help that they so desire.

Dyslexia is misunderstood, and so much of the misunderstanding is that it is a confusing term for reading disabilities. The word dyslexia is made up of two parts; dys meaning not or difficult, and lexia meaning words, reading, or language (Hudson, High, & Otaiba, 2007, p. 1). The term dyslexia is mainly used in the medical field instead of the educational field. Because of dyslexia being used mainly in the medical field is the lack of knowledge in the education field. There is no cure for dyslexia so it is a lifelong condition that carries on into old age. However, this does not mean that instruction cannot remediate some of the difficulties people with dyslexia have with written language (Hudson, High, & Otaiba, 2007, p. 7).

The significant problem with individuals with dyslexia is that their poor verbal ability makes it extraordinarily hard for them to convey their difficulties to parents and teachers (Listen and Learn Centre, n.d. p. 3). When reading this article a person understands why dyslexia is so hard for an educator to understand because an individual with dyslexia has a difficult time communicating their frustrations and anxiety. The process of communication is heavily compromised, with the intended message being only partially received or expressed (Listen and Learn Centre, n.d. p. 3).There needs to be auditory training and communication training for individuals with dyslexia.

> If dyslexics could communicate without the communication being heavily compromised then it would build up their confidence level, and it would give more open doors of understanding for educators and researchers. Students do not struggle simply because they are not trying hard enough. They may have a brain difference that requires them to be taught in a more intense fashion than their peers. Without intense intervention, low motivation may develop as students try to avoid a difficult and painful task (Hudson, High, & Al Otaiba, 2007, LD Online, p. 9).

Practical Application

Today there are three major legal frameworks that directly affect children with dyslexia (Foss, 2013, p. 191). The major legal frameworks are; Disabilities Education Act, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act. IDEA is a government agency that provides federal funding to public schools to help with students with disabilities. The IDEA and Section 504 requires that a student be educated in the "least restrictive environment" (Foss, 2013, p. 193). As soon as you believe that your child may have dyslexia, it's important to start a conversation with the staff at the school (Foss, 2013, p. 195). This way you can make sure the school is doing all that they legally are supposed to do to help your child to succeed.

Differentiated instruction is needed for students with dyslexia. As educators it is important that we be considerate of the needs of all our students, and if differentiated instruction is needed then it must be done. When the discussion of varying our teaching delivery methods occurs, teachers are often forced to contend with the issue of fairness (Ackerman, 2012, p. 35). When you start hearing about struggling learners, it is a common thought of many teachers and administrators to object working with struggling students. This is because there are many teachers who do not feel qualified enough to teach these students. The attitude is; "let's leave it for the special education department and we will not worry about it." This can lead to the issue of fairness. Fairness is not treating everyone the same, fairness is treating each individual in a way that will help them to be successful in life so if differentiation instruction has be to done then that is being fair. Ackerman makes a great comment about differentiated instruction that it is awesome because every student is taught according to their needs (2012, p. 35). Adjusting teaching methods in order to reach a broad spectrum of students is a big responsibility for teachers, but teachers must consider the fact that '*all students are active participants in the learning process*' (Ackerman, 2012, p. 12).

According to research dyslexia should be viewed as a hypothetical construct embedded within a broader theory of reading (Tunmer, & Greaney, 2010, p. 230). In her most recent work, Clay (2005) warned that "undue attention to the detail of letters…can block the child's ability to use his language knowledge and the meaning of the text, as part of his information base for decision-making" (p. 25). Teaching children to decode is one thing that needs to be taught to these children. Systematic reading interventions involving children with dyslexia have targeted phonological awareness and alphabetic coding skills (Tunmer, & Greaney, 2010, p. 43(3)). Students with dyslexia have impairments in vocabulary, syntax, and

comprehension. Because of this, individuals with dyslexia have problems with spoken language and understanding written sentences, and relating meaning to text. Vocabulary growth is a major role in the development of phonetic awareness. Children with poorly developed vocabulary knowledge will have trouble identifying and assigning appropriate meanings to unknown printed words, especially partially decoded or irregularly spelled words ((Tunmer, & Greaney, 2010, p. 235). Deficiencies in syntactic knowledge will impair the development of word identification skills. Reading everything twice is important to individuals with dyslexia, even though it is time consuming this can be a benefit for a couple of reasons mentioned by researcher Herfurd, (1998). By bringing more varied general understanding to their reading makes recognizing or decoding the actual words easier for individuals with dyslexia because they can anticipate them, have some notion of what the words should be (Hurferd, 1998, p. 169). Hurferd continues to mention that understanding text also becomes much easier because they have a framework on which to hang what the words say (1998, p. 169).

Because of the reversals that individuals with dyslexia deal with in reading, it is also important to do some eye movement exercises. Exercises that has been successful is to read the letters *b,d, p, and q*, in rows, and to read arrows pointing up, bottom, left, and right in rows. According to Davis this procedure will enable the person with dyslexia to intentionally turn the disorientations on and off (2010, p. 198). The symptoms of dyslexia are the symptoms of disorientation, so once the individual with dyslexia knows how to turn the disorientation off, he can also turn the symptoms off (Davis, 2010, p. 198).

Within the past decades studies have shown that an evidence-based approach to teaching children to read has emerged. This evidence has gone to the National Reading Panel established by congress in 1998, and because of this exhaustive review, the panel found that five essential elements should be incorporated into effective reading instruction—phonetic awareness, phonics, fluency, vocabulary, and comprehension (Shaywitz, Morris, & Shaywitz, 2008, p. 462). Early intervention has been the most helpful research of students at risk with dyslexia. Studies have suggested that prevention programs that explicitly focus on phonemic awareness, phonics, and meaning of text in the earliest grades of reading instruction reduce the base rates of at-risk students to below five percent (Shaywitz, Morris, & Shaywitz, 2008, p. 462). For older students the remedial research literature includes a range of intervention programs, including those described as direct instruction and those that are more strategy base (Shaywitz, Morris, & Shaywitz, 2008, p. 463).

Future studies that would be successful for teaching individuals with dyslexia would be to do research on eye exercises to see if it can be concluded that eye exercises can help train the individual to turn the disorientations around. Studies on identifying the role of attentional difficulties in dyslexic readers. Studies that help to identify which specific instructional elements in which specific combinations improve fluency and reading comprehension, particularly in older students.

Individuals with dyslexia live in an upside down world but even though they have obstacles they are creative thinkers. They often have the ability to see situations as a whole and come up with unusual or novel solutions; this is known as “top-down’ thinking (Wiltshire, 2003). Can individuals with dyslexia be successful, the answer is yes, but the key is not to let them get discouraged and to help them in any way that is possible to build up their self-esteem and it takes educators who will believe in these students and will take their disability seriously.

In conclusion Matthew 2;3-4, speaks of the scribes and Pharisees and how “they tie up heavy, cumbersome loads and put them on other people’s shoulders, but they themselves are not willing to lift a finger to move them (Ackerman, 2012, p. 13). Ackerman mentions, that “Teachers who expect a lot of their students should be willing to share in the “burden” of mastering the material that is presented, the goal should be to help students work through their burdens rather than to add to them” (2012, p. 13).

References

Ackerman, B. (2012). G.U.I.D.E. differentiated instruction for Christian educators. Lynchburg, VA. Liberty University Press

Davis, R. D., (2010). The gift of dyslexia. New York, NY. Penguin Group (USA) Inc.

Dean, L., B., Kupczynski, L., Fedynich, L., (n.d). Journal of Case Studies in Education. An

Analysis of Dyslexic Students at the Elementary Level
Demonet, J. F., Taylor, M. J., Chaix, Y. (2004). Developmental dyslexia The Lancet. Vol. 363, May, 1, 2004. www.thelancet.com
Dyslexia, Lee, J. (2005). Encyclopedia of School Psychology, ed. by Lee, S. W. Thousand Oaks, CA, Sage Publications. Pp. 178-181, retrieved from http://asp6new.alexanderstreet.com.ezproxy.liberty.edu:2048/psyc.obj... 11/2/2013
Fillippatou, D., & Kaldi, S. (2010). International Journal of Special Education. The Effectiveness of Project –based Learning on Pupils with Learning Difficulties Regarding Academic Performance, Group Work and Motivation. Vol. 25, No1 2010.
Foss, B., (2013). The dyslexia empowerment plan. New York, NY. Ballantine books
Gall, M.D., Gall, J.P. & Borg, W.R. (2010). Applying educational research (sixth edition). Boston, MA. Pearson Educational Inc.
Hudson, R. F., High, L., Al Otaiba, S. (2007). Dyslexia and the brain; What does current Research tells us? LD Online. Retrieved from, http://www.ldonline.org/article/14097/ 12/2/2012.
Hurford, D., M., (1998). To read or not to read. New York, NY. A Lisa Drew Book/Scribner
Peterson, R.L. & Pennington, B.F. (2012). Developmental dyslexia. The Lancet.Vol 379 May 26, 2012.
Shaywitz. S. (2003). Overcoming dyslexia; a new and complete Science-based program New York, NY. Knopf, Borzoi Book.
Shaywitz. S., Morris, R., & Shaywitz, B. A., (2008). The Education of Dyslexic Children from Childhood to Young Adult. Annu.Rev. Psychol. 2008, 59-451-75
Smythe, I., (2011). Dyslexia. British Journal of Hospital Medicine., Jan. 2011, Vol, 72, No. 1
Tops, W., Callens, M., Lammertyn, J., Van Hees, V., & Brysbaert, M., (2011). Ghent, Belgium, Ghent University. 62; 186-203.
Tunmer, W., & Greaney, K., (2007). Defining Dyslexia. Journal of Learning Disabilities, 43(3) 229-243.
Wiltshire, P. (2003). Dyslexia. Austin, TX. Steck-Vaughn Publishers.