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Comm 111: Section 2
Representative Profile: Step 6
Theme: Dyslexia
Written for the BYU-I Scroll

Dyslexia for Life

(Editor's Note: This is a two-part article regarding the observations, problems and solutions to dyslexia. Part I will explain the history and struggles that dyslexic individuals face. Part II will follow with the solutions that have been affective for these individuals.)

The Observation

Chewing Cheez-it's and sipping coke, Alex Nelson, a junior at Brigham Young University- Idaho, sat at the kitchen table studying her psychology homework. Adjusting her weight every few minutes, her dilated pupils moved jaggedly as she read long paragraphs three to four times on her computer.

On a piece of paper Alex wrote words that she misinterpreted in the reading. Each time she misread a word she would breathe sharply in irritation, grab the paper to her left and write down words in two columns: mistaken words versus the real words, "shield" versus "shied," "unedified" versus "unified," "meat" versus "meant."

As she typed her report, her fingers pressed the buttons in fluid clicks. There was a rhythm to the typing, a few words would be typed followed by the "tap, tap, tap" of the delete button on her Mac.

The History

It has been said that when life gives you lemons you make lemonade, but if life gives you melons you might be dyslexic.

In the past several years, dyslexia has become the leading cause of reading, spelling and comprehension problems in children and adults. About 15-20% of Americans are dyslexics, however, about 1 in 5 individuals actually receive the help they need. Many cases go undiscovered leaving these individuals with a sense of failure and abandonment.

Region 10 Education Service Center defines dyslexia as “A specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.” Dyslexia has been attributed to autosomal loci (not sex-linked traits) found on the 1st, 2nd, 6th and 15th chromosomes. Scientists have studied pedigrees of German and Norwegian descent and concluded that dyslexia is more prominent in families that have multiple cases than in the general public. Dyslexia is attributed to a translocation of these chromosomes meaning that sections of the chromosome arms were switched on the same or another chromosome.

According to Jaana Nopola-Hemmi and associates, “The pericentromeric region of chromosome 15 was the first locus suggested to be linked to dyslexia. These results were later questioned and linkage to chromosome 1p34-p36 was suggested. A translocation t(1;2)(p22;q31) cosegregating with retarded speech development and dyslexia has been reported. A quantitative trait locus for dyslexia has been mapped to the HLA region at 6p21.3 by Cardonet *et al* and further confirmed by Gayán *et al*. Recently, Grigorenko *et al* reported linkage for distinct components of dyslexia to chromosomes 6 and 15; the phonological awareness phenotype was mapped to chromosome 6p21-p22 and the single word reading phenotype was assigned to chromosome 15q21.”

Red Taylor the supervisor of Disability Services at Brigham Young University-Idaho states, “Dyslexia is a neurological or developmental dysfunction in the brain; people are wired differently, not wrong, just different.”

Kathleen Stassen Berger, author of *The Developing Person Through Childhood and Adolescence*, has researched learning disabilities thoroughly; she explains in her research the difficulties and effects dyslexia has on young students. She says,

“No single test accurately diagnoses dyslexia... Dozens of types of dyslexia have been identified. Poor listening skills are often at the root of dyslexia. Early theories of dyslexia hypothesized that visual difficulties—e.g., reversals of letters (reading *was* instead of *saw*) and mirror writing (*b* instead of *d*)—were the origin, but more often dyslexia originates with speech and hearing problems.”

The Struggle

This semester Alex Nelson is studying Exercise Physiology and is one of those suffering from dyslexia. This year she is taking chemistry and kinesiology. “Those are hard classes in general,” she said. It’s the mathematics portion in chemistry that is difficult, because the numbers and symbols are easy for me to mix up. Kinesiology is difficult too because it takes longer for me to visualize the parts of the body. I have to break down the words piece by piece and work through it slowly to understand what the teacher is talking about. Many students are shouting out the answers before I fully understand the question.”

Ashley Cooper one of Alex’s roommates said, “Right after class, Alex gets her homework and sits at the kitchen table in the same spot everyday. She is often there until

it is time for bed.” There are times when studying that Alex asks how to spell a word. “It’s just to make sure she spelled it correctly,” Ashley said.

One of the main issues related to learning disabilities especially dyslexia is the ability to comprehend the material. “You have to have an understanding of what the context means before you can move on,” said Taylor.

Lydia Keller, a student tutor at the BYU-Idaho Reading Center explained her observations while working with students who have learning disabilities. “Their struggles consist of taking tests. If there is a lot of reading or if someone isn’t available to read their test to them it is more difficult. They have the same amount of work as someone without a learning disability and by having only 24 hours in a day and working twice as hard as someone else, it creates a lot of frustration,” said Keller.

Another main burden of individuals with dyslexia and other learning disabilities is to have the confidence to know they are not dumb. While these students are battling with their confidence and performance in school, the question to be posed is, what resources are available to get the help I need?

Part II

(Editor's Note: This is the beginning of Part II of Dyslexia for Life. The Previous section explained the neurological aspects of where dyslexia lies in individuals and their struggles. Part II will explain the Solutions that are available to help the affected individuals.)

The Solution

Michael E. Thomson, author of *The Psychology of Dyslexia* states, “Dyslexic children (or adults) can learn to read fluently and spell competently. The key is to present the written language system in a way so as to meet their way of processing information.”

Schools have created an Individual Education Plan (IEP) to help students learn, cope, and overcome their disability. Studies and evaluation tests after six months to a year have shown that most students that actively work each day improve in spelling, phonics, and comprehension.

Doug Ricks is the head of Assistive Technology at Brigham Young University-Idaho. The Assistive Technology Center provides students with computer systems: TextAloud, Kurzweil, and many other programs.

“Many students don’t come forward with their learning disability because they feel dumb. They’d rather just tough it out,” said Ricks. “But finally once students do, they are tested and they can receive the help they need.”

Students with a print disability have issues reading or comprehending the text in writing form. In order to receive proper attention, a student with a believed disability is required to visit with a specialized doctor knowledgeable in reading disabilities. After

being observed the doctor will certify that individual with a learning disability and give advice for the services they need.

After getting the referral from the doctor the student will meet with Red Taylor who is in charge of Disabilities Services. Taylor will seek out the best services that can be provided to the student. Following, Taylor will inform the teachers of the student and Doug Ricks so their needs can be met.

As a tutor in the Reading Center, Lydia Keller has been able to help students with their disabilities. “We teach time management, text book strategies, and computer programs such as Kurzweil. Kurzweil allows students to have auditory learning and forces them to follow along and they can get their work done faster. It takes a positive and a negative and puts the student on a neutral level.”

“TextAloud is a plug-in that connects to Firefox and Windows and read the HTML document out loud,” said Ricks. “The program will highlight the words that are read aloud. It makes a huge difference for learning and comprehension.”

“Kurzweil 3000 connects the dots and makes it easy to read,” he said. “The great thing about Kurzweil is that you can scan textbooks and other materials into the program. Then it uses optical character recognition to read the text out loud.”

“Kurzweil provides an MP3 audio format that will read a particular page range or the entire document.” Many of these programs come with audio voices, the old voices sound very robotic, but the newer systems will come with voices that sound more real. These voices are easier to listen to and allow the student to stay focused. The down fall with Kurzweil is that the program is very expensive being about \$1500,” Ricks said.

“Only a handful of students use it. There are other software systems that provide the text to speech programs that work very well for students.”

“With these programs it puts students with learning disabilities on a level playing field. I have seen students who can hardly read the text in front of them, score in the 30s on the ACTs. All they need is the technology,” he said.

These students are exceptional auditory learners and great at hands on activities. “I have never seen people who’ll work harder. I find it a privilege working at the Reading Center because these people never give up,” said Keller. “They are great examples of dedication, humility, and perseverance.”

Jane Hubert, a teacher at a Texas school, was very nervous that her dyslexia would become public. She was always self-conscious about her disability and often thought of herself as stupid. “After Hubert's dyslexia was diagnosed, she began studying the same two-year dyslexia curriculum that students are taught in the Greenville school district. She now teaches the phonics-based curriculum, called the Multisensory Teaching Approach.”

“It empowers you,” Hubert said. “All of a sudden, you're not at the mercy of words. You can control those words. “I tell the children and I tell myself, 'This is hard for me, but it doesn't mean I'm dumb,'" Hubert said. “I want to give them what I didn't have.”

Alex knows that her dyslexia won't go away, but she has kept a positive attitude. She has overcome many of the trials that she has faced. “My spelling has slightly improved and my reading comprehension has gotten a lot better,” she said. “As I keep

doing what I am expected to do, I know it can only get better.” Although she currently does not use the materials, Alex is grateful that the resources are available to her if she needs them.

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