

The Impact Of Dyslexia On Learning

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Generally, dyslexia is defined as a learning disability affecting children mainly. According to the National Institute of Neurological Disorders and Stroke (NINDS), dyslexia is a neurological condition where the affected persons have trouble reading, spelling, writing, pronouncing words, and sometimes speaking, where such difficulties are not attributable to intelligence deficits or eyesight problems. There are different forms of dyslexia classified according to the time of onset, sensory system affected, deficit observed, and non-reading types. These subtypes can be categorized broadly into two groups, namely, developmental and acquired dyslexia.

Developmental dyslexia is a particular learning disability commonly manifested as unexplained and unexpected trouble in reading among kids of average intelligence and normal insight and who do not have general learning challenges (Zoubrinetzky, Bielle, and Valdois, 2014). In simple words, developmental dyslexia is described as severe reading difficulty caused by a genetic, brain-based, and phonologic disability. It is usually observed in the early stages of a child's age at a time when they are expected to develop reading and phonological skills. The disorder is expected to continue progressing into adulthood.

On the other hand, acquired dyslexia results from trauma or injury to the part of the brain that controls reading and writing. Under this category are two subtypes known as deep and surface dyslexia. Deep dyslexia is characterized by semantic errors customarily controlled by the central region of the brain. Such errors are manifested as an inability to match the visual word to the word's meaning correctly. For instance, the word "thing" can be read out loud by dyslexics as "thing." Stroke, dementia and old age are commonly associated with this kind of dyslexia. It thus emerges that acquired dyslexia is common among adults. However, recent research has revealed that Williams Syndrome can cause acquired dyslexia among young children. Other classifications of the disorder, as presented by Goldstein and Obrzut (2001, p. 276), are "L-type dyslexia (excessively fast readers who make substantive reading errors), P-type dyslexia (displaying accurate but slow and laborious reading), and M-type dyslexia (readers who commit a combination of L-type and P-type dyslexia errors)."

History Of Dyslexia

A German Physician, Oswald Berkhan, first identified dyslexia in 1881. Before that, scholars had used a plethora of terms to describe the condition, including "word blindness" or "strephosymbolia" (History of Dyslexia, p.10). An ophthalmologist named Rudolf Berlin described and named the learning disability as 'dyslexia' in 1887 instead of "word blindness." However, in education circles, the term dyslexia only came to be officially accepted more recently through The Code of Practice (Department

for Education and Employment, 1994).

Societal enthusiasm for individuals with reading difficulties likely started in 1878 with Adolph Kussmaul, a German neurologist. He had an extraordinary interest in grown-ups with a wide array of reading problems who likewise had neurological hindrances. He saw that a few of his patients couldn't read legitimately and routinely utilized words in the wrong request. Further research was published in The Lancet by Dr Dejerne, whose research portrayed a patient who had endured mind damage in the wake of having been hit on the head with a crowbar. The patient had lost a few dialect capacities, including the ability to read. Further research confirmed that individuals who experienced issues in reading had likely suffered mild to severe brain damage.

However, in education circles, there was no marked improvement in the management of the disorder, given its impact on learning outcomes. In fact, intelligence tests designed by psychologists were used by medical professionals to diagnose dyslexia. It was only in the 1970s that educationists were allowed to diagnose the disorders. Even with teachers and educationists being involved, the special education needs (SEN) of dyslexics were not recognized, and the affected persons were considered unteachable. However, autopsy results on adult dyslexics showed that the right hemisphere of their brain, which powers creativity, was more advanced than normal adults. Scientists thus concluded that dyslexia was a normal variation of brain development and not a disorder. Henceforth, modern educationists perceive dyslexia as a different way of learning as opposed to a disorder.

The Impact Of Dyslexia On Learning

Virtually all subjects require some form of reading and writing at all levels. Glazzard (2010) explored the impact of dyslexia on pupils' self-esteem and how it affects learning outcomes in school. For many scholars in the field, a lot of attention has been directed towards developmental dyslexia leaving the subtype of acquired dyslexia poorly understood. Nonetheless, the current research in the field indicates that dyslexic adult learners experience emotional disturbances, low self-esteem, a deep in confidence and generally poor academic performance as a result of the disorder. Glazzard's study involving nine 14-15-year-olds in British mainstream schools diagnosed with dyslexia indicated they felt stupid, experienced feelings of disappointment and isolation and also felt like they burdened their peers, parents, and teachers.

In the recent past, colleges and universities have seen the enrolment of dyslexic learners double (United States Government Accountability Office, 2009). This has increased the need for these colleges to develop suitable policies and resources to support the special needs of these learners. For some of these colleges, the acquisition of needed resources has been problematic in the face of ever-increasing budget cuts in education. Even without budget cuts, college education for dyslexics is problematic, with many of these learners recording increased needs. Moreover, school therapists and counselors have indicated a greater need demand for their services from dyslexic learners (Gallagher, 2014). In retrospect, nearly 50% of postsecondary admissions involved special needs learners (United

States Government Accountability Office, 2011). It is not evident that learning institutions have responded accordingly in terms of the provision of SEN resources.

For the most part, higher cognitive skills required and expected of adult learners and college, such as interpreting and synthesizing information, may be greatly affected among dyslexics. A posting on the Stanford University website asserts that execution on more elevated assignments might be, by implication, influenced if, for instance, people can't access course material since they can't process messages instantly through sight (The Impact, 2018). In such a case, the dyslexic individual is in a similar position to a visually or hearing-impaired individual. A blind or poorly sighted individual will be unable to write at acceptable speeds, and such rates might be comparable to a physically disabled person. Some dyslexic individuals encounter a combination of these troubles in specific circumstances that may not be readily acknowledged by instructors and the education system. Consequently, adult dyslexics may misread instructions in class or even copy notes inaccurately leading to poor academic performance and frustrations where remedial measures are not put in place.

In posting such definitions, researchers reiterate that dyslexia has no association with intelligence. Early researchers in the field often linked the disorder to lower IQ, a misconception that remains widespread today. However, modern research has revealed otherwise, and Siegel (2006) cautions that dyslexia has nothing to do with IQ. In fact, she indicates that the definitional problem of the condition emanates from diagnostic issues. Siegel adds that, although there are electrophysiological and structural abnormalities of the brains of dyslexics, there is no specific blood test or brain imaging result that can provide a diagnosis. Instead, timed Reading comprehension tests are usually administered by physicians and effects are used to make a determination. Goldstein and Orbzut fault such methods by saying that they "emphasize strategy and cognitive development and are not based on a brain processing relationship which is dysfunctional in dyslexia" (2012, p. 276). Such misunderstandings have been rife ever since the disorder was discovered in the 19th century.

In line with the evidence provided above that shows that dyslexic learners face a myriad of psychological needs apart from the learning environment, the demoralization hypothesis would suggest that they are subject to poor academic performance. These learners, concerning their schoolmates without handicaps, have suggested that they encounter a plenitude of scholastic-related issues past their reading difficulties, such as "poorer test-taking skills, study skills, and note-taking skills" (Nelson 2017, p.45). Other commonly observed challenges include poor processing speed, poor short-term memory, short concentration span, difficulty understanding the new terminology, and slow response time. However, all is not lost for adult dyslexic learners as some exploration demonstrates that dyslexic learners report better learning environments as compared during their elementary and high school years (ibid).

Skills Affected

Socialization

Most adult dyslexics are acutely aware of their handicap when it comes to reading, writing, and taking notes in class. As such, they may feel inferior compared to others, and the fear of being made fun of or dragging their class behind may see them withdrawing from class interactions. In the modern education setting that recognizes that education best takes place in learner-centered approaches, it means that dyslexics are perpetually disadvantaged based on their isolation and low self-esteem, which results in reduced participation in class.

New Skill Acquisition

Towards the end of the 19th century, one of the leading theories, alongside the phonological and magnocellular ones, on the causal impacts of dyslexia the one centered on the cerebellum capacities. Nicolson and Fawcett (2001) as cited in Michail (2016) propose that the weakness on the cerebellar procedures in the brain influences the automatisisation system, which is fundamental to obtaining and aching new aptitudes. In their research, children with dyslexia were assessed alongside a control group in balance automaticity. The scholars discovered huge differences between dyslexics and non-dyslexics use and development of the cerebellum. The dyslexics registered significantly higher difficulties in balance automaticity contrasted with the control group.

Under the magnocellular theory developed by Stein and Walsh (1997), the temporal processing deficit might be extended to other systems, such as vestibular and motor, which are functions of the cerebellum. Ideally, the cerebellum, which is located at the back of the head attached to the bottom of the brain and the spine under the cerebral hemispheres, controls some cognitive functions and coordinates voluntary movements such as posture, balance, coordination, and speech, resulting in smooth and balanced muscular activity. Thus, dysfunction in this region of the brain could alter many functions of coordination in speech, vocals and writing. As such, Stein and Walsh (1997) assert that

Dyslexics are notoriously clumsy and uncoordinated, their writing is appalling, their balance is weak, and they show other 'soft' cerebellar signs, such as reach and gaze overshoot, and muscle hypotonia (p. 151 cited in Michail, 2016, p. 60).

Teacher Solutions

According to NINDS (2010), the primary focus of treatment should be on the specific learning problems of affected individuals. The usual course is to modify teaching methods and the educational environment to meet the particular needs of the individual with dyslexia. Fortunately, a majority of the revised strategies are also applicable to non-dyslexic learners. In fact, the method acknowledges that individual learners have different skills and abilities to absorb, internalize and synthesize information in class.

According to studies by Carl Tomlinson, one approach to cater to dyslexic learners is through the differentiated differentiation theory. Instructors who utilize differentiated differentiation tailor their instructing way to deal with coordinating their understudies' learning styles. Every one of these students has a similar learning objective. Be that as it may, the showing approach fluctuates, relying upon how understudies want to learn. Rather than utilizing a one-measure-fits-all approach, an educator utilizes an assortment of strategies to instruct. This can incorporate showing understudies in little gatherings or one-on-one sessions. Tomlinson, an instructor who has done probably the most creative work here, says there are four territories where educators can separate directions. As such, a teacher is guided by the class syllabus to figure out what the students need to learn and devise the best combination of resources to enable dyslexic students to learn without falling behind in class. She suggests developing content (establishing what dyslexic learners need), process (activities that can boost learners' understanding levels), projects (activities that allow dyslexics to demonstrate their skills and talents) and finally, the learning environments (the attitude and mood of the entire class).

Bloom Taxonomy

Dr Benjamin Bloom proposed a theoretical ranking of the levels of thinking that people use. At the simple and basic level, Bloom suggested, people operate at a very "concrete" level of knowledge. Moving beyond that, people can "comprehend" what the facts are about and to some extent, they can manipulate those ideas by comparing or contrasting or even retelling events in their own words.

The two highest levels of cognitive thought, according to Bloom, are synthesis and evaluation. In "synthesis," the individual can put ideas together, propose plans, form solutions, and create new information. In the "evaluation" stage, the thinker can make choices, select, evaluate and make judgments about information and situations.

Disabled learners and those with different impediments to their subjective advancement or relational abilities require deliberately created educational modules and fitting testing. Lessons ought to be begun at an exceptionally solid level, and beginning inquiries ought to be concrete and in light of actualities (for example, true or false questions or yes/no questions). Bore compose instructing is an exceptionally fundamental part that establishes strong frameworks of data on which future learning can be constructed. It is essential here to encourage adjust in the utilization of bore - it ought to never be the sole reason for any learning! It is a device to help when reiteration is vital for achieving dominance (Michail, 2016).

After achieving a reasonable level of dominance in a restricted arrangement of certainties, regardless of whether in phonics starting math or any subject, students ought to be moved "up" the level of trouble on Bloom's scientific classification wherever conceivable. Youngsters ought to be asked, as regularly as could reasonably be expected, to retell data in their own words. Enable them to make examinations on what is comparative, starting with one question and then onto the next. Teachers should Help them to see traits that are distinctive so they can differentiate the distinctions.

Demonstrate to the industry standards to appraise. Utilize numerous robust illustrations that strengthen their quality yet dependably attempt to enable them to extend their limits in the meantime. This approach allows dyslexic learners to appreciate achievements in moving up difficulty levels.

Coloured Overlays

Wilkins, a pioneer in the field of dyslexia, has proved that the use of colored overlays or tinted lenses has reduced the symptoms of glaring and eyestrain in individuals who have used them (Michail, 2016).). He developed the Colorimeter, an instrument that can test the person and help him choose, without the individual knowing, which color is more beneficial for him. Through the use of color overlays in various studies, dyslexics reported 5-89% improvement in reading and reduction of visual stress. However, some scholars such as Singleton and Henderson (2007) have criticized Wilkins' approach to anxiety and dyslexia, noting that sight is just one of the many aspects that cause stress among dyslexics. They thus concluded that these two occurrences are not mutually exclusive.

Class Environment

Under Vygotsky's socialization theory, it is well understood that learning takes in the social and cultural environment. Accordingly, teachers must actively create an enabling social environment that will allow dyslexics to overcome their socialization shortcomings as noted earlier in the paper. Vygotsky claimed:

Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (inter-psychological) and then inside the child (intra-psychological). This applies equally to voluntary attention, logical memory, and the formation of concepts. All the higher functions originate as actual relationships between individuals."

Thus, instructors should be at the forefront in guiding and facilitating social interaction in the classroom with a focus on the SEN of dyslexics.

Paulo Freire develops another approach that places a significant responsibility on the instructor. His theory promotes the idea of learning through critical co-investigation, where student and tutor are "jointly responsible from (sic) a process in which all grow" (Freire, 1996, p. 61). However, the theory takes a precautionary approach in awarding teachers authority by condemning the master-servant relationship that was used in the past. In Freire's approach, he encourages teachers to speak and even discuss lesson content with learners as opposed to talking to them. The latter would involve a teacher dictating notes while the former is more encouraged as it involves first both teacher and learners to discuss and synthesize information together.

Teachers should be creative enough to respond adequately to specific learners' needs. In their

training, instructors don't ordinarily procure the aptitudes important to give specific instruction to students with proficiency challenges. Regardless, it would be difficult to react to each particular need of individual students while instructing an entire class. Thus, instructors to be well acquainted with their learners and even understand some problems beyond dyslexia that may be affecting their progress in class, such as family matters or financial wellbeing.

Nonetheless, there are general techniques that teachers employ in cases of general problems among dyslexics. For instance, color sensitivity. Visual stress or Meares-Irlen disorder (MIS) is a relatively new concept in the study of dyslexia. The concept asserts that. People who encounter visual pressure issues, for the most part, grumble about sore and tired eyes, headaches, and discomfort after prolonged periods of reading and sensitivity to bright lights, leading to obscured and unbalanced content (Michail 2016). Research has demonstrated that using shaded overlays or focal points can be advantageous for people who experience any reactions caused by visual pressure (ibid).

Government Support Efforts

The American government has achieved a lot regarding support for the education of dyslexic people. Most important is the recognition of the condition as having a bearing on learning outcomes that requires a differentiated approach to learning compared to non-dyslexics. That recognition alone sets the ground for the appropriation of resources to schools and institutions catering to search students.

Another notable government effort in the management of education for dyslexics is apportioning research grants in studies on the condition. A look at some of the research articles in the field, including some of those referenced in this paper, it is evident that the government finances a significant number of them through various agencies. These agencies promote not only research but also public awareness of the disorder by providing parents and communities with critical information on how to assess such disorders.

Furthermore, dedicating resources to research and public awareness has been essential to managing myths and misconceptions about dyslexia. First and foremost, government reports have deconstructed the myth that dyslexia has much to do with intelligence by highlighting some famous people diagnosed with dyslexia. They include Albert Einstein who took about four to talk and eight to read. Others include Steven Spielberg, Richard Branson, Tom Cruise, Walt Disney, and Mohamed Ali.

Conclusion

In summation, the issue of dyslexia ought to be given broader attention at the government and institutional level. In line with integration, fellow students should be trained and sensitized on how to accommodate dyslexics in class through social interactions. This way, dyslexia will cease being perceived as a disability but rather a different way of being. The approach taken by several of the theories addressed in the paper reiterates the idea that dyslexia is not a disability.