



Investigate Phonology to Address Dyslexia

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Abstract. At first, researchers believed that dyslexia was a disorder that was passed down via families and was most common in children and teenagers. The majority of people, however, believed that dyslexia was not an illness but rather the result of a child's reluctance to put in the effort required to become proficient in reading. This belief stems from the fact that dyslexia was not as visible as other problems. Experts are devoted to assisting dyslexics in several methods, including both physical and psychological treatments. Now, dyslexia continues to exist and is a problem requiring attention and solutions.

Keywords: Dyslexia · disease · phonological · genetic

1 Introduction

Reading difficulties are the most typical symptom that people connect with dyslexia. A child's capacity to perceive and manipulate the sounds in a language is negatively impacted as a result of this condition. Children who have dyslexia have a difficult time decoding new words and breaking them down into portions that are more manageable and that they can subsequently sound out. Reading, writing, and spelling all become more difficult as a result of this. They may attempt to compensate by learning words by heart, but they will have difficulty identifying new words and may take longer to retrieve even old terms from memory. A child's dyslexia is not indicative of his or her intellect; rather, it represents the difference between a student's potential and actual performance. For the first few grades, at least, some children with dyslexia may stay up with their classmates with a little more work. However, difficulties arise when, in the third grade, students need to read fast and fluently to stay up with their coursework. Students with dyslexia may learn to read and succeed academically with the right support and tactics to compensate for their difficulty in decoding. On the other hand, dyslexia is not something that can be outgrown [1].

2 The Initial Stereotype of Dyslexia and the Subsequent Emergence of a More Accurate Understanding

From the 1950s to 1960s: Before the 1950s, developmental dyslexia was understood to be a genetic visual impairment that selectively impacted reading but did not damage

verbal or nonverbal thinking skills. This understanding persisted until the 1950s. This definition was used up until the 1960s when it was replaced. This experienced a substantial transition once it was discovered that phonological theories of dyslexia were responsible for it. Not only did it rule out the possibility of visual processing playing any role in the etiology, but it also raised questions about the usefulness of differentiating reading abilities from thinking abilities as diagnostic criteria. This was because it showed that visual processing could not possibly play any part in the etiology [2].

In the 1950s, it was found that dyslexia was a problem that ran in families, and during this period, a great deal of study was done to attempt to understand the mechanisms that were behind the fact that dyslexia ran in families. Over many decades, heritability, mechanisms of transmission, and the genetic roots of specific reading impairments have all been investigated by dozens of different research groups. Dyslexia is one of the few human disorders, if any, that continues to be as poorly understood and inconclusively defined as it is. Dyslexia is the cause of learning difficulties in individuals of all ages, although it is more common in children and young adults. Due to the nuances of this disorder, it has not received the same level of attention or been given the same level of priority as other mental impairments. It is necessary to analyze the definitions of dyslexia from the perspective of each professional who is discussing the symptoms of dyslexia with which they are most familiar. Most people have the wrong idea that dyslexia is a reading disorder where people see the letters backwards.

As can be seen, the problems that are related to dyslexia are more complicated and intrusive in the everyday lives of people who have dyslexia. There is a school of thought among psychologists that suggests dyslexia might be caused by a poor socioeconomic level or educational difficulties. Dyslexia is considered “cured” if the aforementioned issues are addressed and resolved. This is the only field of employment that considers dyslexia to be a disorder that can be treated. Having said that, not all psychologists are prepared to subscribe to this point of view. Reading, speaking, writing, and spelling are all areas of the curriculum that might be affected by dyslexia. In general, if children score two years behind the reading standards for their ages, this might indicate numerous different learning difficulties. Dyslexia is the least common of these learning impairments. In general, the issue of dyslexia is viewed by medical specialists from a physical, biological, and neurological point of view. The World Federation of Neurology has provided the medical definition that is used in the majority of published examples. It says, “A condition evidenced by difficulties learning to read despite traditional teaching, enough intellect, and socio-cultural opportunity,” which is just half of what the whole definition says. It is dependent on underlying cognitive deficiencies, which usually have their roots in constitutional issues. Dyslexia is defined in similar terms by vocational rehabilitation, which is provided by the Rehabilitation Services Administration [2].

However, the definition includes the component of how the subject’s handicap impacts their employment. The All Handicapped Children Act is characterized most objectively by the Education Department in its report, which reads as follows: A specific learning disability is defined as a disturbance in one or more of the fundamental psychological processes involved in the comprehension or utilization of language, whether spoken or written. This disorder may manifest itself in an imperfect ability to listen, think, speak, read, write, or perform mathematical calculations [2].

Reading is often regarded as one of the most important cognitive and communication abilities in the contemporary, literate culture that we live in. Reading is a culturally and socially rooted skill that is learned in cultural settings and then used in those circumstances. It is a talent that is highly prized by society and, in many parts of the world, holds the key to educational opportunities. Reading is now more important to an individual's health than ever before since our daily lives are more dependent on the information that we get from printed and technological sources. Reading competence helps one take a prominent position in society, and the inability to learn reading competency has a detrimental impact on the development of other key cognitive abilities. Reading proficiency helps one assume a prominent position in society. Learning to read, as well as literacy and education more generally, are seen as critically important in almost every nation on the planet. "entitlement to literacy is considered a basic human right and reflects the central role of reading and writing in all societies," according to a resolution passed by the United Nations, which affirms that education is a fundamental requirement for all people and a precondition for the accomplishment of development goals. As nations throughout the world work to lower their rates of illiteracy, one of the most pressing issues at hand is ensuring that everyone has access to adequate literacy training [2].

It is a sign that the portion of the tongue placed further back in the mouth helps the creation of the vowel. There is a distinction that may be made between man and man or man, though. In the English language, words like "pit," "pet," and "pat" are instances of short vowels. These vowels have stayed unchanged throughout the course of the past thousand years, whilst the long vowels have continued on their merry way. The term "major vowel shift" has been coined to describe this linguistic phenomenon. The short vowels, however, began to change in the cities of Chicago, Detroit, Cleveland, Buffalo, and Rochester well before the year 1950. This change occurred in the short vowels. The alteration at issue is commonly referred to as the northern city move [3].

2.1 Measures to Further Address Dyslexia

From the 1970s to 1980s: Reading education in the Upper Arlington Schools was conducted utilizing a method that was referred to as "whole language" throughout the decades of the 1970s and 1980s. It is a method that gained widespread acceptance in the 1980s and is still widely used as a foundation for reading teaching in many public schools currently. The concept that reading is acquired via a natural process underlies the whole of the language. The amount of direct teaching that children need is quite low. Instead, you should fill their environment with books so that kids might grow up to be readers. But studies spanning decades have shown that reading is not a talent that comes naturally to people. Humans, on the other hand, learn naturally when they are exposed to speech from others around them. Since of the way their brains are formed, individuals who have dyslexia have a difficult time learning to read because it is difficult for them to grasp the link between the sounds that letters make and the letters themselves [1].

Traditional tutoring may be counter-productive for a kid with dyslexia, especially if the youngster does not have a favorable experience with the tutoring. Dr. Cruger makes this point clear. According to Dr. Cruger, "if the youngster despises the experience of reading aid, then it is not useful." "And it does nothing to address the underlying cause of the issue, which is the decoding shortcoming." Instead, Dr. Cruger stresses that one

of the most essential methods to assist children who have dyslexia is to make them more comfortable reading. This is one of the most important strategies to help children who have dyslexia. This may be accomplished in part by concentrating less on correcting their faults and recognizing even the little successes and achievements that they have achieved. Children who have been diagnosed with dyslexia can get modifications in the classroom. Dr. Shaywitz explains why dyslexia causes a person to lose time, and that accommodations allow her to get that time back. Exemption from the need to study foreign languages, one of the most effective ways to help a child who has dyslexia — or any child who is having difficulty — is to encourage the activities that she enjoys and is good at, whether it be music, joining a sports team, or anything else that helps build her confidence. This is true for any child who is having difficulty. Dyslexia is not an indicator of intellect, and it may be good to discuss successful persons who have also been diagnosed with dyslexia, such as Whoopi Goldberg and Steven Spielberg. This can help reinforce the point that dyslexia is not a marker of ability. Helping children emotionally is also beneficial for addressing their dyslexia. As a consequence of the problems in completing activities that seem to come effortlessly to other people, dyslexia may lead to feelings of frustration, humiliation, avoidance, and a reduction in one's self-esteem. By removing some of the mystery around your child's learning condition, you may better equip him with the strategies, as well as the resiliency, required to handle it, both in academic and social settings. Initially, discuss the unique difficulties that come up as a consequence of having dyslexia. Even though there are still errors, parents should acknowledge their children's efforts and congratulate their hard work. Besides, assisting children in recognizing their capabilities contributes to addressing dyslexia. Therefore, it is essential not to resent children who struggle with reading; rather, instructors and parents should encourage children to read more and cultivate their passion for reading [4].

2.2 Dyslexia Problems Exist and Impact People Currently

From the 1990s to the 2000s: In recent years, cognitive psychologists have had a great deal of success in their study of the factors that contribute to the reading difficulties that youngsters experience. Experimental psychologists have explored variations in cognitive processes that are internal to the kid, which could explain the reading failure. This is done rather than searching for aspects of the child's environment that may contribute to poor levels of literacy. This method supplements the one that was used to demonstrate that there is a significant and predictive association between phonological abilities and learning to read in unselected groups of children. Additionally, it indicates that dyslexic children have difficulty with phonological processing. This article discusses three types of evidence that all point in the same direction: data from studies of spoken language impairments in dyslexic readers; evidence from the analysis of dyslexic reading and spelling skills; and finally, evidence of phonological deficits that vary in severity and extent throughout with course of a person's life who has dyslexia. Nearly a century has passed since the first documented instance of developmental dyslexia was brought to light. At the time, it was believed that the infant was born with a condition known as congenital "word blindness" [5].

Although there is still considerable interest in the role that visual factors play in dyslexia, the most widely accepted view that exists today is that dyslexia is a verbal deficit. To be more specific, dyslexic readers have difficulties with phonological processing. According to Butterworth, Morton, Snowling, and Warrington (1994), the development of a kid's language takes several years, and throughout this period, there are changes in several different domains of functioning in the child. The phonological system is the subsystem of language that is concerned with how ways in which the sound patterns of the language are unutilized communicate. In this review, we will be focusing on recent discoveries that have occurred within the phonological system. Children seem to be able to map the speech that they hear onto the utterances that they generate throughout the early stages of speech development, and there is evidence that the mappings are accurate [5].

A cognitive disease known as dyslexia impairs a child's capacity to identify and make use of the individual sounds that comprise individual words and/or numbers. There is no correlation between dyslexia and either the intelligence quotient or eyesight. It has something to do with how the brain processes and interprets language. Phonological dyslexia, which is often referred to as auditory dyslexia, is characterized by difficulties in phonological and/or phonemic awareness in children. The abilities to read and spell are known as phonemic and phonological awareness, respectively. Children that have phonological awareness can identify and manipulate the sounds of spoken language... A person needs to be able to segment a word into the individual sounds that compose it as well as combine individual sounds into words to have phonemic awareness. According to understood.org, it also entails the capacity to add, delete, or replace new sounds with words. Children who have phonological dyslexia have difficulty reading in this area. They may not be able to separate words into their component syllables and sounds at all, or they could have trouble doing so [6].

3 Conclusion

In the past, those who had dyslexia were stigmatized and it was thought that the condition was inherited; however, genetic research has shown this assumption to be incorrect. As a consequence of this, research is now focusing on how phonics may be used to treat dyslexia. This is the case regardless of whether the condition is caused by the fact that particular words and sentences are too difficult to read or by the fact that youngsters have a natural aversion to reading. By investigating dyslexia, early detection and treatment of the disorder may be improved. Early diagnosis and therapy may be accomplished by mentally retraining the youngsters and augmenting this with an increase in their reading interest. This allows dyslexics to read more like normal individuals. Therefore, the purpose of this essay is to draw society's attention to the fact that dyslexia is not always caused by children's unwillingness to read, but is more often a significant disorder [7].

References

1. Katherine Martinelli, "Understanding Dyslexia - Child Mind Institute," *Child Mind Institute*, Apr. 15, 2022. <https://childmind.org/article/understanding-dyslexia/> (accessed Sep. 04, 2022).
2. J. Stein, "Brain Sciences | Free Full-Text | What is Developmental Dyslexia?," *MDPI*, Feb. 04, 2018. <https://www.mdpi.com/2076-3425/8/2/26> (accessed Sep. 04, 2022).
3. R. Siegel, "American Accent Undergoing Great Vowel Shift: NPR," *NPR.org*, Feb. 17, 2006. <https://www.npr.org/templates/story/story.php?storyId=5220090> (accessed Sep. 04, 2022).
4. H. Emily, "Rethinking How Students with Dyslexia Are Taught To Read: NPR Ed: NPR," *NPR.org*, Mar. 11, 2018. <https://www.npr.org/sections/ed/2018/03/11/591504959/rethinking-how-students-with-dyslexia-are-taught-to-read> (accessed Sep. 04, 2022).
5. M. J. Snowling, "Phonological processing and developmental dyslexia," *Journal of Research in Reading*, vol. 18, no. 2, pp. 132–138, Sep. 1995, <https://doi.org/10.1111/j.1467-9817.1995.tb00079.x>.
6. Goswami, U Phonological representations, reading development and dyslexia: towards a cross-linguistic theoretical framework
7. L. learninglabadmin, "The Signs, Causes, and Treatment of Phonological Dyslexia," *Learning Lab*, Nov. 18, 2020. <https://learninglabfl.com/understanding-phonological-dyslexia/> (accessed Sep. 04, 2022).

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