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The Significance, Types, And Symptoms of Dyslexia -A Theoretical Approach from Terminology to Diagnosis and Treatment-

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Abstract
This study aimed to define the significance and nature of dyslexia, a learning disorder that affects reading and writing skills. It can take many forms, including phonological dyslexia, which is a difficulty associating spoken sounds with written symbols, making it difficult to decode words; surface dyslexia, which is a difficulty recognizing words in visual form, affecting the ability to read quickly; and visual dyslexia, which is a difficulty processing visual information, which can lead to problems recognizing or remembering words. The manifestations of dyslexia vary from one individual to another, but often include difficulty decoding words, reading fluently, and spelling. Problems with reading aloud, where the person may have difficulty understanding what they read and avoid reading and writing. There is no definitive cure for dyslexia, but early intervention and Personalized therapies can help manage symptoms and improve reading skills. Educational interventions can also help manage Symptoms and improve reading skills. The use of personalized educational methods, such as phonics training, can help improve reading skills, and behavioral and cognitive therapy can help address negative feelings associated with dyslexia and improve self-confidence. Psychological Support: It is important to provide psychological support to the child and their family, as dyslexia can affect emotional and social health. Modifying the Learning Environment: The learning environment can also be adapted to meet the child's needs, such as providing extra time for exams or dividing tasks into smaller steps. The study concluded with proposals and recommendations that encourage concerted efforts and attention to this segment of society and finding optimal ways to care for these cases. Early detection of this condition leads to better outcomes for these students, as appropriate attention is provided by preparing specialized teachers to deal with them and specialists trained to design successful treatment programs for those with learning difficulties.
Keywords: Dyslexia, Dyslexia Symptoms, Dyslexia Treatment. Learning difficulties.

Introduction:
When discussing dyslexia, we must first provide a historical overview of dyslexia from the beginning of the nineteenth century to the present day, when the view that language ability is centered in a specific point in the left hemisphere of the human brain became widespread.
The first person to describe dyslexia scientifically and in detail appropriate to his time was the German physician Adolf Kussmaul, who lived from 1822 to 1902. He is credited with formulating the concept of word blindness. This was followed by other, different studies. Academic research in the field of dyslexia did not begin until 1896, when British physician

Pringle Morgan published an article on congenital color blindness in the British Medical Journal. Pringle Morgan described the case of a 14-year-old boy named Percy, who, despite his average intelligence and good training, suffered from severe difficulties with reading and spelling. Pringle Morgan referred to Percy's condition as congenital color blindness. Liong also believes that the beginning of serious research and a significant focus on the field of reading and its difficulties occurred between 1880 and 1991. Physicians confirmed that the defect was due to a defect in visual processing, but several studies soon appeared, and various research directions began on the subject of dyslexia (Gilgel, 1995, p. 2). After that, studies began to follow one after another, and many specialists in various fields, such as doctors, psychologists, and educators, became interested in this topic. Another group of doctors followed Morgan's footsteps and influence to explain the disorder, such as Glasgow, Nettle ship, Fisher, Stevenson, and Thomas. Before delving into the heart of our scientific paper, we have decided to define the concept of dyslexia and the origin of the name.

1- The Concept of Dyslexia:

Research into the topic of dyslexia initially raises the issue of the concept and terminology, considering the subject as one of the aspects or manifestations of learning difficulties worthy of study and research. Theoretical perspectives in the specialized literature in this field remain the subject of serious scholarly debate and discussion, especially regarding the concept, terminology, and essence.

1-1-The Origin of the Name (Dyslexia):

It is a word from the ancient Greek language consisting of two parts: "dis," meaning "sloppy," "incomplete," or "difficulty," and "lexia," meaning "words or language." Therefore, it denotes a deficiency, weakness, or clumsiness in the ability to communicate linguistically. From here, it can be defined as a type of communication disability characterized by a deficiency in the ability to understand and comprehend the written or spoken word received by the nervous system (Radi Al-Waqfi, 2012, p.385).

The concept of dyslexia is a relatively vague term, with many different names referring to it, making it virtually unrelated. We find the terms "dyslexia," "specific reading difficulty," "learning difficulty reading," and "reading disorder." Despite their multiple uses, these terms all refer to a student's inability to read. The Special Education Dictionary defines dyslexia as a deficiency in the ability to read, or a partial inability to do so, often associated with brain dysfunction or mild brain damage. Those afflicted with this condition are unable to clearly understand what they read (Sayed al-Shakhs et al.,1992, p.1). The World Health Organization (WHO) definition of dyslexia refers to a persistent difficulty in learning to read and acquiring reading skills in otherwise intelligent normally schooled children who do not suffer from any pre-existing physical or psychological problems (Sulaiman al-Sayed, 2000, pp. 1-2).

At Indiana University, the Child Development Assessment Medical Center defined dyslexia as a condition in which a child of average intelligence has difficulty pronouncing words and sentences correctly. The causes of this condition are organic, neurological, or genetic factors, occurring during the developmental stage of the cerebral cortex (Ahmed Abdel Karim, 2008, p.53).The World Federation of Neuroscience defined dyslexia as: "A disorder characterized by difficulty learning to read despite formal education, normal intelligence, and sociocultural opportunities. It is often due to fundamental cognitive difficulties (Assem et al., 2018, p.144)."

From these definitions, we note that dyslexia ranges from difficulty to inability, due to the presence of barriers that prevent the child from achieving the goal of reading, which is the correct and complete pronunciation of the material being read.

2- Types of dyslexia:

2-1- Phonetic defects in letter sounds: This makes the child unable to read words and, consequently, suffers from an inability to spell, due to an inability to use phonetic skills.

2-2- Defects in the ability to perceive words as a whole: For example, pronouncing sounds as if they are encountering them for the first time, and writing them by spelling words based on letter sounds, which results in spelling errors (Nabhat,2008, p.41). The first type of dyslexia relates to phonetic defects in letter sounds. We say the inability to use phonetic skills, as a result of phonetic defects in the various letter sounds. The child is unable to read words, and thus suffers from an inability to spell. The second type indicates that there are defects in the child's ability to perceive the entire word, which inevitably leads to spelling errors. When writing a word, the child pronounces the sounds as if they are encountering them for the first time, so they write the word using spelling based on letter sounds, which leads to spelling errors.

2-3- The difficulty may lie in both of the above methods together: therefore, these children continue to suffer from this deficit (Nabhat, 2008, p.41). Some have classified them using a better procedural method, which is as follows:

Phonological dyslexia: In this type, we find the basic distinction of difficulty reading words without meaning (les logatome), especially if they are long (grammatical errors). (Pascale Colé, 2013, p. 174) This includes students with phonological deficits, in which a primary defect appears in the integration of letter sounds, as the strategy of converting a letter to a sound has not yet become automatic for the student to be able to combine letters with their appropriate sound. These students often suffer from problems with short-term memory(Gillet,1996,p.145).Children suffer from phonological deficits, such as an inability to analyze the successive phonemes of a word, difficulty integrating letter sounds, and an inability to read and spell words. This is because the letter-to-sound conversion strategy has not yet become automatic for the child to be able to combine the letter with its appropriate sound.

Surface dyslexia: This type is characterized by difficulties recognizing irregular words, although regular words and words without meaning are retained. It includes students who suffer from primary deficits in the ability to perceive words as wholes. They have difficulty pronouncing familiar and unfamiliar words as if they were encountering them for the first time. It is sometimes accompanied by cognitive disorders, including:

- Lack of specialized knowledge about spelling words, despite having previously recognized them. They have poor spelling, writing as they hear them.
- They mistake every written sequence of letters for a word that resembles an existing word in the language.
- These children make errors between homophones, both in writing and in defining them.

It appears that these difficulties result from the presence of two types of cognitive deficits:

- A phonological dysfunction similar to that found in cases of phonological dyslexia.
- A visual-attentional deficit similar to that found in surface dyslexia (Annie Damon, 2006, p.11).

- Profound dyslexia:

This type of disorder is characterized by a phonological deficit, in addition to semantic errors when reading isolated words, and an inability to read new words and pseudo-words, but reads concrete words and abstract words well. Students with profound dyslexia also experience difficulties with naming, in addition to making semantic errors. This type of dyslexia leads to the emergence of accompanying disorders such as linguistic disorders and difficulties in recognizing words from images. These difficulties hinder the student's proper re-education (Bouflah Karima, 2014, p. 12).

This is a serious and difficult reading disorder, similar to adult dyslexia. We find:

- Significant and significant difficulties in phonemic segmentation.
- Difficulties in Denimination.
- A significant production of semantic errors.

This disorder is the rarest and most complex type. The most common errors in this type are semantic praxia, where the affected person produces a word instead of another word that is synonymous, opposite, or related to it, such as reading "white" as "black." We also find morphological errors, such as reading "beauty" as "beautiful." There are also errors in substituting functional words for other functional words (Shalabi, 2017, pp. 60-61).

- Mixed dyslexia:

These students suffer from phonological difficulties of the first type and difficulties in overall word perception of the second type. Here, the student encounters significant difficulty reading because the assemblage and address components are impaired (Pascale Colé, 2013, p.177).

This type is usually included in the list of reading blindness resulting from a brain injury. After this presentation about the concept of dyslexia and its types, we should touch on Dyslexia Symptoms.

3- Indicators of Dyslexia:

Thomson and Marsland (1966) mention some indicators that appear in children with dyslexia, including:

These children's reading achievement is significantly lower than expected for their mental age and years of schooling, and is often lower than their achievement in arithmetic.

These children show no evidence of any hearing or vision-related deficits, brain damage, or any underlying deviation (Ahmed Abdel Karim, 2008, p. 14). The first indicator is one of the most important indicators by which a child can identify a dyslexic. Consequently, their reading achievement is lower and weaker than expected for the child's age. The second indicator indicates that there is no evidence that the child is impaired in either hearing or vision, i.e., it is not related to their dyslexia.

These children show significant difficulty remembering whole word patterns, do not learn easily through the visual method of reading, and tend to exhibit some degree of confusion in reading. It relates to small words that are similar in general form.

They are weak readers with regard to the aspect of reading aloud and its foundation. They are weak in terms of spelling, although they can sometimes recite or retrieve a memorized list of spelling words for varying lengths of time. (Ahmed Abdel

Karim,2008,p.14) Al-Saeedi also adds some indicators specific to reading difficulties (dyslexia) as follows: The most important of these are: Many of these students are intelligent and normal physically and emotionally, and it can be said that they desire to learn to read. Some of these students read poorly the words within the content, but give intelligent answers when given questions based on this content. It appears that the student does not misread the words, but reads them as they see them, making guesses based on their understanding of the content or parts of the words they are familiar with. (Al-Saeedi, 2009, pp.43-44) These indicators appear in some students. Some of them may be intelligent and normal;they suffer from reading difficulties and want to learn to read. We say that these students' reading is poor and poor, yet when asked questions, they give intelligent answers. Miles points out some indicators of dyslexia, which often appear in students with reading difficulties in the following forms, perhaps the most important of which are: Many of these students continue to confuse letters even at the age of eight and beyond. Some of these students have difficulty learning things in sequence, such as the letters of the alphabet or the months of the year. (Rateb et al.,2009,p.103)

The student deletes some words from the sentence they are reading or deletes part of the word, such as "I traveled by plane" (read as "he traveled by plane").

The student adds some words to the sentence they are reading or adds syllables or letters to the sentence, such as "I traveled by plane" (read as "I traveled by plane to America").

Some of the words are replaced with other words. It may be close in meaning, such as reading the word "aliyah" instead of "al-murtafa" (high).

Repeats some words without justification, such as reading "the mother washed" (ghassat al-umm) (the mother washed the clothes) and then repeats it (the mother washed the clothes).

Reverses and substitutes letters, such as reading "zar" (button) instead of "rang" (ran).

Has difficulty distinguishing between letters that are similar in spelling but different in pronunciation, such as "ع) "ع) and "غ) "غ) (Yahya, 2006, p. 240).

Has difficulty tracking their destination while reading and feels tense when moving from the end of a line to the beginning of the next one while reading.

Has difficulty distinguishing between vowels, such as reading "فيل" (elephant) instead of "فُول" (ful).

Reads quickly and unclearly.

Read sentences slowly, word by word. (Al-Qabali,2003,p.5)

4- **Diagnosing Dyslexia**:

The diagnosis process is considered one of the most important, difficult, and precise. Diagnosis is a set of methods and steps that specialists rely on to detect an ailment in an individual. Diagnosis varies depending on the illness or disability the person suffers from. Diagnosis of dyslexia differs from all other diagnoses, or includes only a limited number of them. It is a necessary and important procedure for detecting cases of dyslexia and providing appropriate treatment. Therefore, Mohamed Mounir Morsi believes... Ismail Abu Al-Azaim said: “The success rate of the treatment program depends on the accurate diagnosis.” (Ahmed

Abdel Karim, 2008, pp. 61-62) The more organized, comprehensive and accurate the diagnosis is, the more capable it is to develop an appropriate program that ensures and decides the correct and sound treatment for dyslexia based on the purposeful diagnosis. Therefore, diagnosis is of great importance, and this is confirmed by Vogler and his colleagues that "early detection of dyslexia in children is an important first step to reduce the harm that failure can affect." Academic Reading (Jaljal,19-95,p.36).Diagnoses used by each physician vary, as each follows their own approach and specific steps they consider most effective in reaching the desired diagnosis. Harris and Sipay believe that diagnosing dyslexia involves the following steps:

- Conducting a test to determine the child's reading level.
- Identifying the student's reading strengths and weaknesses.
- Identifying the factors and causes that hinder the child's learning at this stage.
- Reducing these factors, if possible, and controlling and correcting them before or during treatment.
- Selecting successful and effective methods for teaching the necessary skills and strategies. *Teaching the required skills until it is confirmed that the child is proficient in using them and that they are appropriate for him. (Ahmed Abdel Karim, 2008, p.59)

5- **Treatment of Dyslexia:** There are more than one method for treating reading difficulties, the most prominent of which are:

5-1- Multimodal or Multisensory Method: VAKT This method relies on the use of more than one sense in addition to movement, and has been called the kinesthetic method. It is abbreviated as (VAKT).Each of these letters refers to a specific sense: the letter V represents the visual sense, the letter A represents the additive sense, the letter K represents movement, the letter T represents the tactile sense, and the letter V represents the tactile sense. This method assumes that individuals vary in their reliance on the senses, their importance, and their relative efficiency within a single individual, which imposes a sensory or cognitive preference. For any of them in receiving information or stimuli, and through this method, a kind of integration can be created between these media or senses to contribute more effectively to active reception, which is the method that addresses the deficit resulting from the use of some senses over others in teaching reading. This method relies on the multiplicity of senses, such as hearing, sight, and kinesthetics. This method supports and improves the student's learning of the subject matter (Khattab, 2006, p.160).

5-2- The Fernald Method: This method relies on the multiplicity of senses in teaching reading, but differs from the multisensory method in two aspects:

- This method is based on the student's linguistic experience in examining words and texts, giving the student freedom in choosing words, thus becoming more positive and eager to learn to read. (Muhammad) (Amer, 2008, p.160)

5-3 - The Orton-Gillingham Method: This method is based on multiple senses and the organization or classification of linguistic structures related to reading, interpretation, encoding, and spelling instruction. It focuses on:

- The process of linking the written visual letter symbol with the letter name.
- Linking the visual letter symbol with the letter sound.

- Linking the student's speech organs with the names and sounds of letters when they hear them themselves or others. (Khattab,2006,p.161) This method is also based on the principle of learning the letter, then the word, and then the sentence through the process of linking. The visual symbol is first linked with the letter name, and then the visual symbol is linked with the letter sound, then the student's speech organs' sensations are linked with the names and sounds of the letters, just as they hear themselves when reading. It links visual, auditory, and sensorimotor models.(Qahtan,2008, pp. 229-230).

-5-4- The Hegg Kirk Method: This method is suitable for students with mental retardation who are capable of learning. It relies on a system of phonetic reading in an organized manner within the framework of programmed learning principles, which controls the educational process and provides the child with feedback to correct their errors and continually guide their path. It is based on starting with consonants, then vowels, and teaching children their sounds. In other words, this method relies on the use of the phonetic method in an organized manner using programmed learning. Each training session is divided into four sections, with a simple change made:

• In the first section: Change the first vowel, such as:qāl nal.

• In the second section: Change the last letter,such as:faz far.

• In the third and fourth sections: Change the first and last letters, such as:str katab(Qahtan,2008, p.231).

5-5- The Reading Recovery:

Method This method relies on the following:

- Direct individual instruction is provided to students whose academic level is lower than that of their classmates.
- Children who are lower in rank than their classmates are selected for reading therapy. This method aims to improve the reading level of students with dyslexia, helping them quickly reach the average of their classmates. Students continue to receive intensive educational therapy sessions, one instructional session per day, for a limited period until they reach the reading level of their classmates.

6- Direct Instruction Programs: Studies confirm the effectiveness of direct instruction for students with severe dyslexia. Direct instruction includes six levels suitable for the early grades of basic education, from first to sixth grade.Each level includes lessons designed based on a hierarchical sequence, in accordance with the basic principles of behavioral psychology. Through this, children are taught according to planned steps, monitored by the teacher using a variety of reinforces (Malham, 2002, p.302). From the above, we see that the teacher has a role in developing appropriate treatment plans and methods, and diversifying the various educational methods—such as audio, visual, and tactile—appropriate for the reading skill to be taught. This is to deliver information in a better and faster manner,relying on repetition,individualized treatment, and consideration of individual differences.

7-Conclusion:

In this scientific paper, we have attempted to uncover and delve deeper into dyslexia, which is a deficit in the ability to read, in several aspects. We have also addressed the symptoms, causes, manifestations, characteristics, diagnostic steps, and treatment methods. We can say that despite the severity and ambiguity of this difficulty, the optimal solution is to combine

efforts and care for this segment of society and find optimal ways to address these cases. Learning difficulties are a common topic these days and fall within the category of special education, as these students suffer from a problem that requires special care. Early detection of this condition leads to better outcomes for these students, as appropriate attention is provided by the training of specialized teachers to deal with them and specialists trained to design successful treatment programs for those with learning difficulties.

Through this research, we recommend the following:

- Establishing specialized centers to care for these children, and conducting medical, psychological, speech, and educational examinations.
- Encouraging and expanding research on the subject by diversifying intervention methods and understanding the phenomenon from all aspects.
- Conducting seminars and training and awareness sessions for all those active in this field, so that we understand the characteristics of those with dyslexia, the problems that hinder their learning, and methods for overcoming them.
- Motivating practitioners and academics to develop educational and therapeutic programs specifically for this group, enabling them to continue their studies normally.
- Providing children's books to encourage and motivate students to read.

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