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Students with Reading Disorders: Their Characteristics and Affected Skill Areas

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Abstract

Some children appear to grow normally until they face the academic demands of school. These learners cannot make their way continue compensating for the added content-learning demands. Their performance problems are sometimes rooted in reading disorders. Reading disorder is a specific learning disability described by disorders with correct and /or fluent word recognition, and poor spelling and decoding abilities. This study aims to highlight the characteristic features of reading disorder and the skill area affected by students suffering from reading so that they can be used as a basis for identifying this disorder among learners. The study concludes that the main characteristics of reading disorder could be found in the following areas 'reading, writing and the general aspect of learner's life'. Besides, the skill area affected by students with a reading disorder is realized by a deficit in the main components of being a good reader, that is: (reading decoding, word recognition, reading fluency, and reading comprehension). A deficit in one of these components could result in a reading disability by learners.

Keywords: Specific learning disability, Reading Disorder, Dyslexia.

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الطلبة الذين يعانون من اضطراب القراءة: خصائصهم ومواقع المهارات المصابة لديهم

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الملخص: يبدو أن بعض الأطفال ينمون بشكل طبيعي حتى يواجهوا المتطلبات الأكاديمية للمدرسة. لا يستطيع هؤلاء المتعلمون شق طريقهم لمواصلة تعويض محتوى و مطالب التعلم المتزايدة. قد تكون مشاكل أدائهم ناتجة عن اضطرابات القراءة. اضطراب القراءة هو إعاقة تعليمية معينة تتميز بقدرة الطالب على التعرف على الكلمات بشكل صحيح وضعفه في القدرات الإملائية وإيجاد المعاني. تهدف هذه الدراسة إلى إبراز السمات المميزة لاضطراب القراءة و مواقع المهارات المصابة لدى الطلبة بغية استخدامها في تشخيص هذا الاضطراب بين المتعلمين. تؤكد النتائج التي وصلت إليها الدراسة بأن الخصائص الرئيسية لاضطراب القراءة يمكن الوصول إليها في المجالات الآتية "القراءة والكتابة والجوانب العامة لحياة المتعلم". كما ان مواقع المهارات المصابة لدى الطلبة الذين يعانون من اضطراب القراءة يمكن تسببها الى نقص او عجز في احدى المميزات الاساسية للقارئ الجيد وهو : القراءة وتشفير المعاني ، التعرف على الكلمات ، طلاقة القراءة ، وفهم القراءة. حيث أن وجود اي عجز في إحدى هذه المكونات تؤدي إلى ظاهرة "إعاقة القراءة" لدى المتعلمين.

الكلمات الدالة: صعوبات التعلم المحددة ، اضطراب القراءة ، عجز القراءة.

I. Introduction

Reading is a window for learning in life. Having an opportunity to read is a key for being a good reader. The American Speech-Language-Hearing Association (ASHA) has defined reading as "the process by which an individual constructs meaning by transforming printed symbols in the form of letters or visual characters into recognizable words". The main components of reading are (reading decoding, word recognition, reading fluency, and reading comprehension) (IDA,2019 ;Supporting Students with Reading Disorder, 2011; Butler & Silliman ,2002) which are defined as follows:

- 1. Reading decoding:** is converting alphabetic letters (orthographic patterns) to phonological patterns of a spoken word.
- 2. Word recognition:** is identifying words while reading. It is an automatic recognition of a word as a unit without following strategies to decode the word.
- 3. Reading fluency:** is recognizing and reading words correctly, effortlessly, and quickly, generally in context. Reading fluency requires both rapid

decoding and sight word identification. It involves reading automaticity, which is the ability to read a list of words in a required amount of time.

- 4. Reading comprehension:** is understanding written text. Comprehension requires having vocabulary knowledge with cues to unpack syntactic rules and give sense to the variant discourse structures. It also entails "the ability to use prior knowledge and make inferences and predictions; the ability to monitor one's comprehension".

Reading is "an unnatural act that requires coordination of visual, motor, and cognitive functions" (Gough & Hillinger, 1980, p. 30). To drive meaning from writing, and to read proficiently extract visual information from surrounding, active stored sound (phonology) and meaning (semantics) representation to where and when with a plan to move eyes in the right time at the right place is required (Traxler, 2012). Reading is a complex process with various stages, and several processes need to be accomplished than speaking. Walsh (1997, pp. 147-148 cited from Traxler, 2012, p. 388) dwells on learning to read as follows:

Taxes our perceptual abilities to the limit for more than learning to talk. It requires finer visual, auditory and manual skills than almost anything else most of us learn. A sequence of small, minimally redundant visual symbols must be discriminated and translated in the phonemic sequence of sounds that comprise each word.

Reading develops with distinct instruction in the vast majority of learners. An individual with a reading disorder shows complications in reading due to disability of some processes involved in reading. Reading disorder creates an academic challenge due to the mismatch between the child's abilities and the school environment's expectations. Then, unfortunately, the child is often labelled as a lazy or dysfunctional component. 'Dyslexia' is an alternative term used to describe students with reading disabilities. William Berlin, in 1887, was the first to introduce the term dyslexia. He used it to label adult learners who had reading problems because of cerebral disease, and the condition was conceptualized in the ordinary class of aphasias. Then, W. Pringle Morgan used the term 'Congenital Word Blindness', in 1896, with his first case study of a developmental reading disorder (Adlofa and Hogan). Morgan described a 14-year-old boy as follows:

He seems to have no power of preserving and storing up the visual impression produced by words--hence the words, though seen, have no significance for him. His visual memory for words is defective or absent, equivalent to saying that he is what Kussmaul has termed 'word blind' (Morgan, 1896, p. 1378).

The term 'congenital word blindness' was used until the 1960s, when the first scientific research arose. Dyslexia was presented as a term to cover developmental reading difficulties in which their reading skill was parallel with their general cognitive ability that is not the product of low-intelligence (Snowling & Stackhouse, 2006).

The International Dyslexia Association (IDA) incorporation with the National Center for Learning Disabilities (NCLD) and the National Institute of Child Health and Human Development (NICHD) presented a consensus definition of dyslexia as follows:

Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and /or fluent word recognition and poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and

reduced reading experience that can impede the growth of vocabulary and background knowledge (IDA:2002).

This definition recognizes dyslexia as a specific learning disability with a neurological and genetic basis. According to the definition, the primary criteria for identifying it include considerable evidence of low accuracy with/ or word reading fluency. It specifies that a person has dyslexia who has (a) problems decoding single words in isolation and (b) difficulties with phonological processing. Dyslexia usually results from an insufficiency in the phonological field of language that is unpredictable compared to other cognitive abilities and sufficient instruction in the classroom. Individuals with dyslexia may have other academic problems. Skilled reading is the culmination or precursor of several different skills; consequently, the reading disorder can have far-reaching or minor consequences like having problems in reading comprehension and struggling to expand vocabularies that put dyslexic person delayed in growing their background knowledge. What is not addressed in the definition is identification, i.e. IQ test, because dyslexia is not regarded as a mental deficit or sensory disorder; therefore, the criteria for identifying it is low achievement. Despite having difficulty in phonological processing and word decoding, some reading disorders may manifest with comprehension. Reading comprehension is the result of efficient reading and language comprehension. Reading comprehension requires phonological decoding and linguistic knowledge, including (vocabulary, semantics processing, syntax, and discourse). Developmental language disorder (DLD) is the term used with reading comprehension. Unlike dyslexia, which is characterized as poor phonological skill and poor decoding, DLD is another type of reading disorder that manifests itself in poor reading comprehension. DLD and dyslexia frequently co-occur. Both dyslexia and DLD are characterized as a deficit that is 'unexpected' given the absence of perceptual and intellectual deficits or any other medical explanation. They both require environmental stimulation. Adequate environmental stimulation in the case of dyslexia is appropriate instruction in reading, while in the case of DLD, adequate stimulation is human language instruction as it is an unexpected problem in overall language development. (Adlof & Hogan, 2018). Bishop and Snowling (2004:862) argue for a partial distinction between dyslexia and DLD, stating that "it is important to distinguish children with relatively pure phonologically based reading problems from those with more global oral language impairment".

In their study Bishop and Snowling hypothesize that phonological deficit underlies both DLD and dyslexia, but the difference between these two disorders is on broader language skills; on phonological language skills, e.g. morphology, vocabulary and syntax). Accordingly, children with dyslexia have phonological deficits, while DLD deficits in phonological and non-phonological language skills. It can be concluded that these scholars argue that DLD sufferers should have dyslexia, but not all dyslexic sufferers would have DLD because phonological deficits underlie both dyslexia and DLD. Many studies have confirmed that both dyslexia and DLD are two separate disorders. Snowling et al. (2019) classified children with the reading disorder into three groups. Dyslexia, DLD, comorbid (dyslexia and DLD). These researchers have found that the rate of comorbidity of dyslexia and DLD is very high. They stated that nearly 48% of sufferers identified as having DLD are also diagnosed with dyslexia, and 58% of those diagnosed with dyslexia have DLD. They further add that all these three groups have 'reading comprehension difficulties' but with different ranges. With the group of dyslexia reading comprehension, the difficulty is mild, while it is more severe with the other two groups. Finally, they concluded that "children with dyslexia or DLD are at-risk for reading comprehension difficulties but for different reasons" (p.1). In the case

of dyslexia, weak decoding is the cause of reading comprehension, while in the case of DLD, weak oral language skill is regarded as the factor for having a reading comprehension problem.

II. Reading Disorder in the Skill Area Affected

The process of reading requires a number of interrelated and complex skills like word recognition and spelling, fluency and automaticity, and language comprehension. A deficit in any of these skills leads to a reading deficit (Taymans, 2010; IDA, 2019 ; Supporting Students with Reading Disorder, 2011). Following is the summary of the types of reading disability due to a specific reading skill disorder:

1. Word Recognition and Word Decoding (Spelling)

Word recognition can be defined as the ability to read a single word, and spelling is the ability to spell words through our knowledge, for instance, letter-sound pairing (IDA, 2019). Numerous studies have demonstrated that the most pervasive kind of reading disorder is the difficulty in word recognition and spelling (Fletcher et al., 2007)

Words are made of sounds called phonemes, and phonemes are the smallest units in language. The English language comprises about 41 phonemes, and each phoneme forms syllables and words in languages. Most words in language consist of a combination of phonemes that consist of a blend of phonemes—a few words with only one phoneme, like 'a' and 'oh'. Graphemes denote phonemes in the spellings of words. Graphemes may consist of one letter, like 'B, T, K, M, N', or more, like 'CH, SH, TH, -CK, EA, IGH', denoting one phoneme.

Word recognition requires skills. Phonemic awareness, which is the capacity of language users to listen to and recognize a single sound, is required for word recognition. Phonemic awareness refers to focusing on and manipulating phonemes in spoken words. (The National Reading Panel, 2000)

In learning to read, people must break up a word into a single sound. If this ability does not naturally develop, then it causes the problem. The ability to decode a word is the skill to read words through letter-sound knowledge, spelling patterns, and breaking down words into smaller units like syllables (IDA, 2019). According to the American Speech-Language-Hearing Association (ASHA), sound, syllable, and word-level difficulties can be described as:

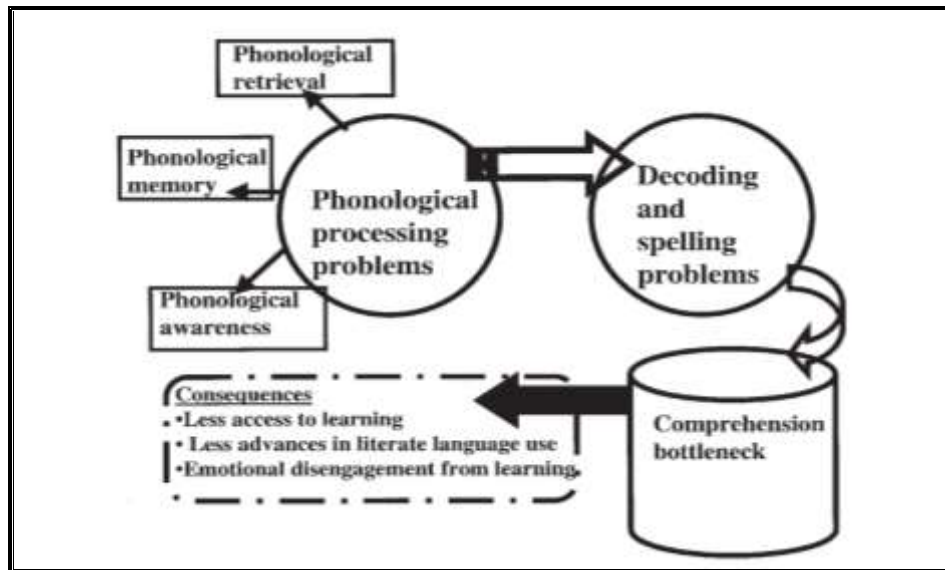
1. Problems with phonological and morphological construction of words
2. Struggling in creating constant associations with the orthographic symbols of words in print
3. Deficits in reading decoding and written spelling abilities.

In the early years of learning, children focus on phonic and phonological awareness. For decoding words, people attribute the rules of how words are created, how they are pronounced, and how to break down words into syllables and affixes. These rules are not easy; for example, the combination of letter (c) and (h) has different sounds as: /ʃ/ as in chef, /tʃ/ as in church, and /k/ as in schema (Taymans, 2010). In the reading process, numerous researchers have reported the critical role of phonemic awareness, which is the apparent awareness necessary to spell identification the phonemes in words, with rapid phonemic decoding skills (Adams, 1990; Blachman, 1997; Kamhi & Catts, 2004).

Phonemic awareness is the basis for decoding words, and it is the underlying cause of dyslexia. Both the neuroscience and psychoeducational literature have the unitary opinion that a phonological deficit is a significant factor of reading failure (e.g., Lyon, 1999; Scanlon & Vellutino, 1996, 1997; Shaywitz et al., 1996; Stanovich, 2000;

Torgesen et al., 2001; Torgesen & Wagner, 1998; Torgesen, Wagner, & Rashotte, 1994. (Cited from Butler & Silliman, 2002).

Figure (5): "Unitary perspective: Unidirectional causality and related consequences" (Ibid, p11).



Reading skillfully needs practise. The more one can practice, the easier it is to remember these sounds. Students with reading disability do not internalize the relation between sounds and print; as a consequence, word recognition will be delayed, and the learner will struggle to learn. When the learner struggles to learn for a long time, reading disability will increase more as they cannot access print, and it will lead to disorder in other skills like fluency and comprehension (Taymans, 2010).

2. Fluency and Automaticity (Naming Speed)

Reading fluency is the ability to read the words and understand their meaning quickly. Fluency is the second developmental stage in the reading process. It is regarded as a bridge between word identification and reading comprehension (Zimmerman & Rasinski, 2012). It comprises three components: 'decoding words accurately, decoding words automatically (rapidly), and oral reading of the connected text with appropriate prosody (appropriate expression)'. Fluency enables the reader to use cognitive resources to understand what s/he has read (Schwartz: 2017). Students spend less time decoding letters and words as reading skills develop and more time reading the whole word and phrases as a single unit using appropriate punctuation and intonation.

The good reader usually read words fluently, accurately, and rapidly with 'automaticity' in decoding words. While reading, the reader's attention is on the meaning of the sentences or text than the mechanics of decoding the words (Shaywitz et al., 2008). Fluency happens at both word level and sentence level, and it is constructed automatically 'word recognition and understanding 'how sentences are composed' (Fletcher et al., 2007 cited from Taymans , 2010)

Students with incomplete fluency are so focused on decoding that they cannot comprehend or understand the meaning of words and sentences. Limited automaticity in decoding and recognizing words in middle and senior grades often lead to difficulties with comprehension (Addressing the Needs of Students with Learning Disabilities, 2015)

Slow reading can be considered as a sign of a reading difficulty, especially in adult readers. "Naming speed" (also called "rapid naming") is an assessment task test for measuring an individual ability by rapidly naming letters, numbers, colours and objects. These objects are presented to the students in rows on a specific card. The student then is asked to name each presented item as quickly as possible. Rapid Naming is a significant indicator of a reading disability (IDA, 2019).

For the relationship between the skills of reading Wolf et al. in their research (2000), concluded that "there appear to be strong relationships between naming speed and word and text fluency, and between phonological awareness and word attack (real and non-word)". Naming speed is a powerful and sometimes the strongest predictor of later reading well into grade eight for students with severe reading problems.

3. Language Comprehension

Good reading requires two complementary skills: reading accuracy (decoding individual words) and reading comprehension (understanding coherent text). Decoding in alphabetic languages such as English requires mapping orthography (letters of printed words) to phonology (sounds represented by letters). Decoding does not guarantee reading success because the ultimate goal is meaning-making from printed text. Reading comprehension greatly depends on non-speech language skills such as semantic and context processing (Paul & Gosse, 2012). Both tasks (decoding printed words with constructing meaning) require cognitive resources controlled by verbal memory. When readers face difficulty in decoding, few cognitive resources are accessible for comprehending and understanding reading tasks. "Consequently, for the non-fluent reader, difficulty with word recognition slows down the process and takes up valuable resources that are necessary for comprehension. Reading becomes a slow, labour-intensive process that only fitfully results in understanding " (NICHD, 2000, p. 3).

In the comprehension process, once the reader gets to the point where meaning needs to be assigned to the orthographic codes, readers must access lexical knowledge stored in mental lexicons. The concepts in the mental lexicon denote one's vocabulary; the content of the mental lexicon comprises data about the phonetic or visual form of the word and information about the meaning of the word and how the words are related. It also contains syntactic and semantic information, indicating parts of speech like nouns, verbs, adjectives, and possible syntactic and semantic roles.

Lexical knowledge is used to process more extended discourse units, such as sentences, conversations, lectures, stories, and expository texts. In addition, comprehension of these larger discourse units depends on structural knowledge. Listeners and readers use a variety of structural cues to understand speech and text, and these clues include 'word order, grammatical morphemes, and function words such as relative pronouns, conjunctions, and modal'. They also use syntactic and morphological cues for finding the meaning of unfamiliar words. Propositional knowledge also can play an essential role in understanding. A proposition is a unit that consists of a predicate and arguments (usually nouns). Listeners and readers use their knowledge of predicates and their arguments for constructing propositions. For example, 'give' is a predicate requiring three arguments: an agent or doer for the verb give, an object forgiving, and the third argument is called a recipient to receive the giving thing. Situation Knowledge or individual knowledge with inference generation of the world also plays an essential role in the comprehension process. World knowledge and making inferences are needed to add information across propositions and construct coherent images of meaning in the larger discourse units (Butler & Silliman, 2002).

Taymans (2010) has recognized three types of reading disorder by stating that adults with the reading disorder can struggle with comprehension for many reasons (Swanson, 2009). Some individuals present comprehension disorder due to inaccurate and dysfluent words recognition. They have problems in understanding because they cannot decode words quickly enough, leaving them with inadequate cognitive resources to grasp the content. If the text is delivered in an auditory format, they can understand it as they are relieved from the decoding challenge. Some others present comprehension disorder due to having deficits in oral language or vocabulary though they can decode words adequately. Another type of reading comprehension disorder, which is regarded as the most challenging group of learners, has a deficit in both decoding and comprehending text.

III. Characteristics of reading disorder

Researchers have studied different signs that may contribute to identifying students with reading disorder. There is no single sign that shows a person has a reading disorder. There is considerable diversity among individuals with reading disabilities. Reading disorder is generally characterized by difficulties with the alphabet, word recognition, decoding, spelling, and comprehension. Reading disorder appears alongside disorders in other areas. Following is a detailed description for the main characteristics of reading disorder in reading, writing and the general aspect of learner's life:

A. Reading

Following is a detailed description for the main characteristics of reading disorder in reading area:

1. Difficulty in learning to read with slow reading development (IDA, 2019; BDA, 2021), and reading below the expected level for age (Vinutha et al., 2021).
2. Difficulty with hearing and manipulating sounds in words and blending letters 'phonemic awareness' (IDA, 2019; BDA, 2021)
3. Doubtful and labored reading with repeated mistakes and pauses, precisely when reading aloud as a consequence they avoid reading aloud in class (BDA, 2021; Supporting students with a reading disorder,2011;Vinutha et al., 2021)
4. Difficulty in differentiating sounds in words, and wrong pronunciation of words, like 'big' for 'got'. (phonological processing) (IDA, 2019; BDA, 2021; Vinutha et.al, 2021)
5. Difficulty in learning the sounds of letters (phonics) and transferring the order of letters while reading or spelling (IDA,2019), Supporting Students with the Reading Disorder), problems in memorizing names and shapes of letters, or naming letters rapidly (IDA,2019; Vinutha et al., 2021). Missing out words in reading or adding some extra words (IDA, 2019; BDA, 2021)). Difficulty in learning the sequence of printing alphabet and not being able to memorize non-phonetic words (supporting students with the reading disorder).
6. Misreading or omitting common short words that cannot be translated into a mental picture, slipping with longer words and failing to recognize familiar words(IDA, 2019; BDA, 2021).
7. Poor comprehension during oral and silent reading and difficulty in picking out the essential points from a passage, grasp of vocabulary, losing the point of a story being read or written, for the reason that words are not accurately read (IDA, 2019;BDA, 2021;Supporting students with a reading disorder,2011).
8. Incapable to read words with one syllable, like 'mat' or 'top'(Vinutha U. et al., 2021).

B. Writing

Following is a detailed description for the main characteristics of reading disorder in writing:

1. Poor writing skills compared to speaking skills.

2. Messy writing results in many deletions and repeated attempts to write words such as 'wippe, wype, wiep, wipe'.
3. Confusion caused by similar letters, especially b/d, p/g, p/q, n/u, m/w.
4. Poor handwriting with many "inverted" and wrong formed letters.
5. Spelling a word differently in one piece of writing. Producing anagram form of words like 'tired' instead of 'tried', 'bread' instead of 'beard'.
6. Producing poorly written work and not staying near the margin which is not appropriate to the age-ability.
7. Using unusual sequences of letters or words.
8. Writing words backwards most of the time, such as writing 'pit' when the word 'tip' was intended.
10. Problems in grammar issues, such as acquiring prefixes and suffixes. (BDA, 2021).

C. Common symptoms

Following is a detailed description for the common characteristics of reading disorder:

1. Delay in learning speech and problems with pronunciation (BDA, 2021; Vinutha . et al., 2021;IDA, 2019).
2. Difficulty learning the alphabet, nursery rhymes, or songs (BDA, 2021; IDA, 2019).
- 3 . Difficulty in naming colours, objects, and letters rapidly 'automaticity' (IDA, 2019), (Supporting Students with Reading Disorder, 2011; Vinutha . et al., 2021).
4. Poor memory for lists, directions, stories or events in sequence and finding a word in the dictionary, naming the days of the week and months of the year (IDA, 2019 ;Vinutha et al., 2021).
5. Need to hear concepts multiple times to learn them (IDA, 2019).
6. Difficulty in paying attention 'poor concentration', being distracted by visual or auditory stimuli (IDA, 2019 ; BDA, 2021 ; Supporting Students with Reading Disorder, 2011).
7. School achievement being below the expected level (IDA,2019)
8. Receiving reports of "not doing well in school".The teacher says, "If only she could have worked harder" or "He's lazy."(IDA, 2019; Vinutha et al., 2021)
9. Relative may have similar problems (IDA, 2019)
10. Difficulty in comprehending inferences, jokes or sarcasm (Supporting Students with Reading Disorder, 2011)
11. Difficulty following instructions. Hard to carry out two or more instructions at one time (BDA, 2021)
12. Forgetting words, friends and teachers, colours etc. (BDA, 2021).
13. Poor personal organization (BDA, 2021)
14. Mixing up between left / right, up / down, east / west (IDA, 2019 ; BDA, 2021)
15. Having problems remembering what day of the week it is, seasons of the year, months of the year, their birth date (BDA, 2021 ; IDA, 2019).
16. Difficulty with concepts like today, tomorrow and yesterday (BDA, 2021 ; IDA, 2019)

IV. Conclusions

The current paper has investigates and analyzes the general characteristics of a reading disorder which are to be regarded as a broad basis for teachers to diagnose students with this language disability. The conclusions the research has arrived at can be jotted down as follows:

1. The main symptoms of reading disorder are manifested in the individual's reading, writing, and general aspect of life.

2. The skill area affected of the individual is caused by having a deficit in the main components of being a good reader: reading: reading decoding, word recognition, reading fluency, and reading comprehension.
3. There is no single sign to be taken as a clue for identifying a person with reading disorder; and there is diversity among individuals in this respect.
4. Not only do individuals suffer from reading disability have production problems, but also have perception (hearing) problems, as they are incapable of manipulating sounds in words and blending letters.
5. When reading aloud, individuals with this disability exhibit doubtful and labored reading with repeated mistakes and pauses
6. In oral and silent reading, affected individuals usually have poor comprehension in picking out essential points from a passage, and grasping prominent vocabularies out of it.
7. Affected individuals have poor writing skill as compared to their speaking skill; and their messy writings are characterized by many deletions and wrong attempts.
8. Learners with reading disability are also characterized by poor cognition and concentration, as they need to hear concepts several times to learn them.
9. Individuals with reading disorder have difficulty following instructions, especially when they are asked to manage two instructions at the same time.

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