

# Dyslexia and its Relationship to Reading Comprehension and Oral Comprehension among Primary School Students

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## Abstract

This study aims to find out the relationship between dyslexia and reading comprehension and oral comprehension, both of which work in an interactive way in the reading process, where the sample was chosen in an intentional manner from the fifth primary students in Al-Wadi city, based on a diagnostic group whose number was estimated at 100 students, and the "Raven" test was applied For intelligence, the word reading test, the reading comprehension test, and the oral comprehension test on all respondents to detect possible differences in the results of these tests between the group of ordinary and dyslexic readers. The data were processed statistically using the "T" test to indicate the differences, and calculating the "Pearson" correlation coefficient between the scores of the tests that were applied to the sample, based on the spss statistical program.

**Keywords:** dyslexia; reading comprehension; oral comprehension primary school students;

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## 1. Introduction:

The focus on special education in general, and learning difficulties in particular, is a relatively new topic in the Arab world, where it has not received sufficient research attention. Learning difficulties tend to worsen during the elementary stage, which is one of the most critical phases in a student's educational journey. It is during this stage that students acquire basic reading skills, which serve as the foundation for gaining experiences and skills necessary for understanding all other forms of knowledge.

Hence, the importance of studies in this field lies in addressing the issue of dyslexia, which is a cause of many other academic difficulties. Reading is considered a foundational skill upon which all future learning depends, as it underpins the comprehension of all learning inputs, whether receptive, such as understanding spoken language and reading, or productive, such as speaking and writing.

This study aims to explore reading comprehension and oral comprehension and their relationship to dyslexia. The processes of recognition and comprehension are integrated, as the student focuses on word recognition and oral comprehension during the early stages of learning,

and later shifts focus to reading comprehension and understanding the meanings of texts in subsequent stages.

## 2. Problem Statement:

Reading is one of the most important skills that the educational system aims to teach in elementary school. It is the first and primary subject that a learner begins their educational journey with, and it serves as the foundation for acquiring knowledge, developing oneself, and solving problems. A student cannot progress in any subject without mastering reading skills. Many thinkers consider reading a cognitive process that involves interpreting symbols received by the reader and converting them into sounds through recognition, comprehension, and association with personal experience and meaning.

Research and studies confirm that reading requires two main processes: the first is decoding written symbols into meanings (recognition), and the second is comprehension, which is the ability to derive meaning. Any disruption in these processes may lead to dyslexia, characterized by a deficiency in reading skills to the extent that a child cannot achieve the level of proficiency expected for their age and educational stage (Hamza, 2008, p. 44). Additionally, a disturbance in comprehension affects how the reader interprets and adjusts the text in line with their prior knowledge. A student's inability to keep up with their peers in acquiring academic skills can result in a failure to achieve an academic level that aligns with their cognitive abilities and good intelligence.

Despite the importance of reading in elementary education, studies show that a large number of students suffer from dyslexia, with approximately 61% of students in general schools affected. Dyslexia represents the most prevalent form of learning difficulty, accounting for 80% of cases.

These students face challenges in various aspects of school education, which lowers their academic performance and may lead to discontinuing their schooling. Studies have demonstrated the interconnectedness of essential and supportive reading processes, such as memory, attention, and intelligence, in addition to the mechanisms of reading activity and the development of reading skills like word recognition and reading comprehension. However, these studies have not clarified the relationship between this disorder and comprehension, whether oral or reading-based. Both types of comprehension involve receiving ideas from others, whether they are speakers or writers. Listening equips children with words, vocabulary, and sentence structures they use, serving as the basis for reading comprehension. Current theoretical models suggest that individuals possess an "internal" vocabulary reservoir where words are stored, enabling them to understand both spoken and written language. In this context, recognizing written words involves associating their written representations with corresponding units in the internal vocabulary.

Based on the above, the current study raises the problem of the relationship between dyslexia and both reading comprehension and oral comprehension. It seeks to answer the following questions:

- Is there a statistically significant difference between students with dyslexia and typical students in reading comprehension?

- Is there a statistically significant difference between students with dyslexia and typical students in oral comprehension?
- Is there a statistically significant correlation between the total reading score and reading comprehension scores among both typical readers and students with dyslexia?
- Is there a statistically significant correlation between the total reading score and oral comprehension scores among both typical readers and students with dyslexia?
- Is there a statistically significant correlation between reading comprehension scores and oral comprehension scores among both typical readers and students with dyslexia?

### 3. Study Hypotheses:

Based on the study's problem and the questions raised, the following hypotheses were formulated:

- There is a statistically significant difference between students with dyslexia and typical students in reading comprehension.
- There is a statistically significant difference between students with dyslexia and typical students in oral comprehension.
- There is a statistically significant correlation between the total reading score and reading comprehension scores among both typical readers and students with dyslexia.
- There is a statistically significant correlation between the total reading score and oral comprehension scores among both typical readers and students with dyslexia.
- There is a statistically significant correlation between reading comprehension scores and oral comprehension scores among both typical readers and students with dyslexia.

### 4. Study Importance:

Given the continuous increase in the number of students facing reading difficulties in elementary schools, along with the significant lack of specialized centers or professionals to address these issues, this study aims to explore dyslexia and its relationship with several variables that may influence or be influenced by it. Additionally, the study seeks to identify the main characteristics of children with dyslexia and to understand how this difficulty affects their comprehension of written texts and spoken language.

### Operational Definitions of Study Variables:

#### • Dyslexia:

Dyslexia is defined as a difficulty in decoding written symbols, affecting a group of children in a way that clearly distinguishes them from their peers of the same age, without any sensory or cognitive impairment or behavioral disorder. In this study, dyslexia is identified through the application of a reading test consisting of commonly used words, uncommon words, and pseudo-words.

- **Reading Comprehension:**

In the current study, reading comprehension is defined as the student's ability to recognize the words included in a specific written text, understand the content of the text, and extract a particular meaning or main idea from it. Reading comprehension is measured by the student's ability to read sentences and point to the picture that corresponds to those sentences. It is expressed by the score the student obtains in the reading comprehension test.

- **Oral Comprehension:**

Oral comprehension refers to the listener's ability to understand spoken language and respond appropriately to what they have heard. In this study, it specifically refers to the student's ability to comprehend spoken sentences presented by the researcher and point to the corresponding image from a set of pictures. It is measured by the score the student receives in the oral comprehension test.

## **First :Theoretical Framework**

### **1. Definition of Dyslexia:**

- The Child Growth Assessment Center, part of the Indiana University Medical Center, defines dyslexia as a condition of deficiency in the ability to read accurately, to the extent expected of a child's peers who are of the same age and educational stage. It occurs due to neurological or genetic factors during developmental stages, resulting from a deficiency in the development of the central nervous system. (Hamza, 2008, p. 53).
- Dyslexia is a specific weakness in acquiring reading skills that cannot be attributed to low mental age, visual acuity disorders, or inadequate education. It encompasses difficulties with reading skills, comprehension, word recognition, oral reading, and performance in tasks that generally require reading.
- The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines "dyslexia" as an alternative term used to describe a type of reading difficulty that focuses on problems with decoding words and spelling. It is also associated with other difficulties, such as reading comprehension and mathematical reasoning. (DSM-5, 2014).

### **2. Symptoms of Dyslexia:**

The characteristics of dyslexia vary from person to person, but there are common indicators or symptoms that suggest the presence of the disorder. Below are some key symptoms, drawn from various sources, that are often observed in children with reading difficulties:

- Reading performance is below expectations and lower than their performance in mathematics.
- They do not exhibit any impairment in hearing or vision.
- Difficulty remembering complete word patterns.

- Difficulty recognizing words that are similar in appearance.
- Weakness in spelling and oral reading.
- They are intelligent, physically and emotionally normal, and have a desire to learn to read.
- They do not read incorrectly, but rather read words as they perceive them.
- They guess parts of the word or content to understand the meaning.
- Difficulty distinguishing between right and left. (Hajj Sabri, 2005).

### 3. Definition of Reading Comprehension:

- Reading comprehension is defined as a cognitive mental process that involves the reader's intentional thinking about the written text, aiming to construct a mental image and acquire information, which is typically connected to their prior knowledge. This process is based on understanding the meaning of words, sentences, and paragraphs, as well as distinguishing words and perceiving linguistic connections.
- It is also defined as an active process that involves the reader's interpretation and adjustment of the text in line with their prior knowledge. (Al-Buhairi & Mahfoudhi, 2012).

### 4. Factors Affecting Reading Comprehension:

Reading comprehension is influenced by a number of factors or interactive components, as highlighted in various references. Some of the key factors include the purpose of reading, the reader's interests, prior experience, value system, attitudes, attention to the text, and the complexity of the concepts being read. Additionally, the individual's ability to perceive meanings and translate ideas from one form to another, based on their existing knowledge, plays a role.

- **The Reader:** The reader's mental, cognitive, emotional, and motivational characteristics influence their choice of reading material and their level of understanding.
- **The Text and Reading Topic:** The nature of the reading material or text, in both its form and content, affects the reader's interest. Aspects such as clarity, organization, print style, colors, formatting, and elements that attract and engage the reader play a role in determining how much the reader is drawn to the text.
- **The Context:** The characteristics of the reading context, along with environmental conditions, psychological factors, and social influences, all impact the student's reading comprehension. (Al-Zayat, 1998).

### 5. Definition of Oral Comprehension:

- **Oral comprehension** is defined as the ability to perceive the meanings of words or ideas, and it is considered one of the factors in the matrix of elements in the theoretical model of cognitive structure.

- **Oral comprehension** is the listener's accurate perception of the meaning intended by the speaker. (Dahal, 2005).

## 6. Oral Comprehension Skills:

- Understanding the purpose and goal of listening, meaning the child should know who they are listening to and why they are listening.
- Paying attention to the speaker.
- Sitting quietly in a position that facilitates good listening, away from distractions that might hinder proper understanding.
- Thinking about what is being heard and avoiding rushing to judgment. (Obeid, 2014).

## 7. The Relationship Between Reading Comprehension and Oral Comprehension:

Comprehension is closely linked to the ease with which a student can use concepts and meanings acquired through listening. Reading comprehension is the fundamental skill that enables students to understand and absorb other educational materials. Once a student overcomes difficulties with reading comprehension, they can overcome challenges in understanding any other subject.

The ability to listen and comprehend spoken language is essential for reading. Both listening and reading involve receiving ideas from others, whether they are speakers or writers. Listening provides children with vocabulary, words, and sentence structures, which serve as a foundation for reading. A child's success in reading and their comprehension of texts depend on their oral and auditory experience with spoken words. The ability to listen attentively and summarize a heard story is a good indicator of a child's readiness for reading, as listening is the first language skill. Many children develop listening as a prerequisite for later language arts skills. (Sayyah, 2006).

## Second: Practical Framework

### 1. Study Methodology:

The selection of the methodology depends on the nature of the problem being studied, which leads to variations in the methods used. In this study, the descriptive method, in both its correlational and comparative approaches, is the most suitable. This methodology is appropriate for investigating dyslexia and its relationship with certain variables that lead to a decline in academic performance among elementary school students. The descriptive method focuses on describing the phenomenon under study by collecting facts and data, classifying them, analyzing the information, and interpreting the results.

### 2. Study Sample:

The sample is one of the most important steps in field research and should be representative of the original population. In this study, the sample consists of fourth- and fifth-grade elementary students, selected purposefully as they are the most appropriate for the study. The total number of participants was 100 students, chosen based on exclusion criteria, including:

- Clear vision impairment.
- Hearing impairment (using a hearing aid).
- Hyperactivity.
- Clear language disorder (e.g., stuttering).
- Significant difficulty in understanding and following instructions.
- Significant academic weakness across all subjects.

Table 01: shows the distribution of the sample members.

Typical readers in the fourth and fifth grades of elementary school.	70
Struggling readers in the fourth and fifth grades of elementary school.	30
<b>Total</b>	<b>100</b>

### 3. Study Tools:

- **Test Description:** This test is relatively suitable for all cultures and consists of 10 drawings or matrices, each with a missing part. Below each drawing are six parts, one of which completes the drawing. The test takers must identify the missing part from the provided options.
- **Application Procedure and Scoring Method:** The child is presented with the test cards, one card at a time, and is asked to identify the part that completes the card from the six options, without being constrained by time. If the student gives an incorrect answer (choosing the wrong part), they are not asked to retry or correct their answer; only the first response is recorded. The scoring is as follows:
  - Each correct answer receives a score of (1), and if the student does not answer correctly, a score of (0) is given.
  - The total score is the sum of all correct answers, which represents the student's overall score on the test. (Al-Damigh, 2011).

### 4. Psychometric Properties of Study Tools:

#### 4.1. Validity of the Tools:

##### 4.1.1. Reading Test:

The validity of the reading test was calculated using the internal consistency method by determining the correlation between the subtests and the total score of the reading test.

**Table 02: shows the correlation between the total score of the reading test and its components.**

Total score	Common words	Uncommon words	Pseudowords
	0.80	0.98	0.90

#### **4.1.2. Reading Comprehension Test:**

This test is a modified version of the reading comprehension component from the subtests of sentence comprehension.

#### **4.1.3. Oral Comprehension Test:**

This test is part of the oral and written language assessments, developed by the Cognitive Psychology Laboratory at the University of Grenoble.

### **4.2. Reliability of the Tools:**

The reliability of the tests was calculated using the "Alpha" coefficient, and the values were as follows:

#### **4.2.1. Reading Test:**

The overall Alpha coefficient for the reading test was (0.80), which indicates good reliability.

#### **4.2.2. Reading Comprehension Test:**

The Alpha coefficient for the reading comprehension test was (0.58), which is considered a good value indicating the test's reliability.

#### **4.2.3. Oral Comprehension Test:**

The Alpha coefficient for the oral comprehension test was (0.87).

### **5. Statistical Analysis Methods**

To achieve the objectives of the study and analyze the collected data, the current study used the following statistical methods to test its hypotheses:

- **T-Test:** This was used to determine the significance of differences between the means of two independent samples.
- **Pearson Correlation Coefficient:** This was used to calculate the correlation between the scores of the tests applied to the sample.

All analyses were conducted using the SPSS statistical software, version 22.

### **6. Presentation and Discussion of Study Results:**

#### **6.1. Presentation of Study Results:**

##### **6.1.1. Presentation of the Results of the First Hypothesis:**



The following presents the results of the differences in reading comprehension ability between the group of typical readers and the group of struggling readers.

**Table 03: shows the differences in reading comprehension between the two groups.**

Group	Mean	Standard Deviation	T-Value	Significance Level
Typical Readers	9.50	1.50	7.25	0.000
Struggling Readers	6.75	3.00		

It can be observed from the table that there is a statistically significant difference at a significance level of (0.000) between the group of typical readers and the group of struggling readers in terms of reading comprehension.

#### 6.1.2. Presentation of the Results of the Second Hypothesis:

The following table presents the results of the differences in oral comprehension ability between the group of typical readers and the group of struggling readers.

**Table 04: shows the differences in oral comprehension between the two groups.**

Group	Mean	Standard Deviation	T-Value	Significance Level
Typical Readers	10.50	1.00	5.33	0.002
Struggling Readers	6.75	3.32		

It is evident from the table that there is a statistically significant difference at the level of (0.02) between the group of typical readers and the group of struggling readers in oral comprehension.

#### 6.1.2. Presentation of the Results of the Third Hypothesis:

To test the third hypothesis, the Pearson correlation coefficient was used. The following table presents the results of the correlation between reading ability and reading comprehension.

**Table 05 : shows the correlation between the total reading score and reading comprehension in the study sample.**

Variable	Total Reading Score	Significance Level
Reading Comprehension	0.70	0.00

The statistical table above indicates a statistically significant relationship at a significance level of (0.00) between reading comprehension scores and the total reading score. This demonstrates the correlation between the ability to decode written symbols, read them, and comprehend the text.

Typical students have the ability to recognize symbols, quickly distinguish between letters, and pronounce words correctly, which prevents them from facing difficulties in understanding the text. On the other hand, students with dyslexia struggle significantly in recognizing both common and uncommon letters and words, which subsequently hinders their comprehension of the meaning.

### 6.1.3. Presentation of the Results of the Fourth Hypothesis:

Table 06: shows the correlation between the total reading score and oral comprehension in the study sample.

Variable	Total Reading Score	Significance Level
Oral Comprehension	0.50	0.02

### 6.1.4. Presentation of the Results of the Fifth Hypothesis:

Table 07: shows the correlation between reading comprehension and oral comprehension in the study sample.

Variable	Total Reading Score	Significance Level
Reading Comprehension	0.60	0.03

From the table, we observe that the value of "r" is significant at the level of (0.03), indicating a statistically significant correlation between reading comprehension scores and oral comprehension scores for both the typical readers group and the struggling readers group.

## 6.2. Discussion of Study Results:

### 6.2.1. Discussion of the First Hypothesis Results:

After calculating the "T" value and its statistical significance between struggling and typical readers, it was found that there are statistically significant differences between the two groups. Thus, the first hypothesis, which stated "There is a statistically significant difference between students with dyslexia and typical students in reading comprehension," is confirmed.

The results indicate that typical students have a higher level of comprehension of the reading material compared to struggling readers. The difference in reading comprehension between the two groups is evident. Reading comprehension requires the visual processing of words, linking their phonetic and spelling representations, and combining these elements to form an understanding of the sentence or text. This process involves connecting and integrating units of meaning. Struggling readers, on the other hand, face difficulties in processing words and matching them with sounds, which prevents them from forming these connections and understanding the sentence.

### 6.2.2. Discussion of the Second Hypothesis Results:

It was observed that the "T" value and its statistical significance between struggling and typical readers indicated the presence of a statistically significant difference between the two groups.

Therefore, the second hypothesis, which stated, "There is a statistically significant difference between students with dyslexia and typical students in oral comprehension," was confirmed.

This difference between typical and struggling readers in oral comprehension ability can be attributed to the fact that children in the early years of elementary school have developed oral comprehension skills over several years before entering school, whereas their reading comprehension abilities have not yet begun to develop. This means that their oral comprehension skills are more advanced than their reading comprehension by several years, giving them a greater ability to process spoken messages than written ones.

As a result, the effort a student exerts to decode written symbols and interpret their meanings is greater than the effort required to decode spoken symbols, especially when they listen to clearly read sentences, which enhances their comprehension. In contrast, struggling readers face difficulties in decoding spoken symbols, which are followed by challenges in comprehension.

#### **6.2.3. Discussion of the Third Hypothesis Results:**

After calculating the "r" value and its statistical significance between struggling and typical readers, it was found that there is a statistically significant relationship between reading ability and reading comprehension. Therefore, the third hypothesis, which stated, "There is a statistically significant correlation between the total reading score and reading comprehension scores for both typical readers and struggling readers," was confirmed.

The relationship between reading ability and reading comprehension can be explained by the fact that reading comprehension is a crucial component of the reading process, influencing and being influenced by various levels of reading. The more accurate the reading, the more precise the reading comprehension. Correct identification of words and sentences, along with the activation of reading skills, leads to a higher level of comprehension and inference. As Sayyah (2001) emphasized, reading requires a wide range of skills that a reader uses when engaging with a text, such as recognizing written symbols, understanding the meanings of words and sentences, comprehending different linguistic structures, and utilizing general knowledge. For a student to understand and retain the information and ideas in a text, they must be able to activate these skills during the reading process. On the other hand, those who lack these skills will struggle to grasp the content of what they read.

#### **6.2.4. Discussion of the Fourth Hypothesis Results:**

It was observed that the "r" value and its statistical significance between struggling and typical readers indicated a statistically significant relationship between reading ability and oral comprehension. Thus, the fourth hypothesis, which stated, "There is a statistically significant correlation between the total reading score and oral comprehension scores for both typical readers and struggling readers," was confirmed.

The relationship between reading ability and oral comprehension can be attributed to the fact that children with dyslexia often struggle with developing their oral comprehension skills. Their inability to read hinders their capacity to understand vocabulary meanings, distinguish between words, and comprehend sentences.

As Dahal (2001) confirmed in her study, the lack of control over one of the essential components of reading oral comprehension among children with reading difficulties is due to a delay or failure in acquiring a reading acquisition strategy. A disturbance in the first stage (decoding letters) leads to problems in subsequent stages. Children who face reading difficulties cannot recognize letters, preventing them from blending them to form words and, eventually, sentences. This limitation prevents them from using oral comprehension strategies and from being aware of cognitive processes.

### **6.2.5. Discussion of the Fifth Hypothesis Results:**

The results show that the "r" value and its statistical significance between struggling and typical readers indicate a statistically significant relationship between reading comprehension and oral comprehension. Thus, the fifth hypothesis, which stated, "There is a statistically significant correlation between reading comprehension scores and oral comprehension scores for both typical readers and struggling readers," was confirmed.

Comprehension is linked to the ease with which students use concepts and meanings acquired through listening. Reading comprehension is a fundamental skill through which students begin to understand and absorb other educational materials. Once a student overcomes difficulties in reading comprehension, they can overcome challenges in understanding other subjects.

This finding aligns with the study by Tiffany, Suzanne, and Alonzo (2014), which showed that oral comprehension affects reading comprehension in elementary school. The study highlighted two key components of reading comprehension: word recognition (decoding) and oral comprehension. It also emphasized the increasing number of children who fail to develop sufficient reading comprehension skills, primarily due to a lack of oral comprehension skills. Finally, the study discussed the influence of a student's primary language on oral comprehension during the evaluation and treatment of reading difficulties.

### **Conclusion:**

The primary goal of this study was to explore the potential existence of statistically significant differences between typical students and students with dyslexia in terms of their reading comprehension and oral comprehension abilities. Additionally, the study aimed to examine the relationship between a student's reading ability and their comprehension scores, as well as to enhance the researcher's understanding of the stages involved in diagnosing dyslexia, thereby opening the door for further diagnostic studies to identify the factors and causes associated with dyslexia.

The results of this study confirmed that there are statistically significant differences between typical students and students with dyslexia in both reading comprehension and oral comprehension. It is evident that reading influences comprehension in both its forms—reading and oral. Improving reading skills in students leads to an enhancement in their comprehension abilities.

The results also demonstrated a correlation between reading comprehension and oral comprehension. From these findings, it is clear that dyslexia negatively affect various abilities, hindering a learner's academic progress. This calls for collaborative efforts from all sides to

alleviate the difficulties associated with dyslexia, allowing the student to better adapt to their school environment.

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