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Phonological Awareness in a Child with Dyslexia

الوعي الصوتي لدى الطفل عسير القراءة

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Abstract:

The study focused on "phonological awareness in a child with dyslexia ." Utilizing a descriptive methodology, the following findings were reached: the level of phonological awareness is low in child with dyslexia , and there are no statistically significant differences in the level of phonological awareness between boys and girls. Based on these results, the following recommendations were made: incorporating phonological awareness into curricula to help prevent learning difficulties, paying attention to both boys and girls to enhance phonological awareness and reading fluency, and implementing therapeutic programs to improve phonological awareness in a child with dyslexia .
Keywords: phonological awareness, child, reading, dyslexia.

ملخص :

استهدفت الدراسة موضوع " الوعي الصوتي لدى الطفل عسير القراءة " ولإجراء هذه الدراسة تم استخدام المنهج الوصفي حيث تم التوصل إلى النتائج التالية: مستوى الوعي الصوتي منخفض لدى الطفل عسير القراءة ، وكذا وجود فروق غير دالة احصائيا في مستوى الوعي الصوتي لدى الطفل عسير القراءة تبعا للجنس ، ومن خلال هذه النتائج تم اقتراح ما يلي : ضرورة مراعاة الوعي الصوتي في المناهج الدراسية يساعد في تجنب صعوبات التعلم ، الاهتمام بفئة الذكور والاناث وتنمية الوعي الصوتي والطلاقة في الفهم القرائي ، العمل على إدخال البرامج العلاجية لتحسين مستوى الوعي الصوتي لدى عسير القراءة .
كلمات مفتاحية : الوعي الصوتي ، الطفل ، القراءة ، عسر القراءة

1- Introduction :

Childhood is one of the most critical stages in a person's life due to the rapid and successive physical, mental, and psychological developments it entails. The significance of this period lies in its foundational role in shaping the child's future. During this time, the child's personality is formed, identity defined, and cognitive abilities developed, crystallizing their values and beliefs. This stage prepares them for school, a phase distinct from previous ones as it introduces a new environment outside the home. Here, the child learns letters and numbers and prepares for the crucial process of reading.

Reading is one of the outputs of language, intended to illustrate the relationship between spoken language and written symbols. It involves recognizing written words and comprehending their meanings to grasp their content (Abd el Hadi et al., 2000). Deleplanque and Mazaux

describe reading as a complex psychophysiological activity aimed at imparting meaning to a series of linear signals perceived visually to understand an idea or sequence of ideas (Deleplanque & Mazaux, 1990). However, numerous challenges impede a child's ability to acquire reading skills, such as difficulties in decoding written symbols and converting them into phonetic units. This inability to comprehend the meaning of these units forming the word results in dyslexia.

Dyslexia, as defined by Borel Maisonny, is a specific difficulty in recognizing, understanding, and reproducing written symbols. It arises from a profound disorder in learning to read between the ages of 5 and 8, impacting writing, comprehension of Quranic texts, and subsequent academic acquisition (Jinan , 2011) . This condition can be attributed to several factors such as attention and perception, with the most significant being a deficit in phonological awareness, where the child is unable to perceive the loci of sound production, resulting in what is termed phonological dyslexia.

Numerous studies have demonstrated and confirmed that phonological awareness is one of the most predictive, if not the strongest, indicators of the ability to acquire reading skills. Khalil's study (2016) on "Phonological Awareness in Individuals with Learning Difficulties" highlights significant statistical differences in phonological awareness between a sample of individuals with learning difficulties and their typical peers.

The study by Al Sareai and Al Otaibi (2020) on "The Relationship between Phonological Awareness Skills and Reading Performance among Primary School Students" indicates a significant correlation between phonological awareness and reading performance among first and second grade students, with this relationship absent among third grade students.

The study by Jaddidi (2020) on "Teachers' Attitudes towards the Role of Phonological Awareness Skills in Reading Instruction" indicates that elementary school teachers in the primary stage have positive attitudes towards the role of phonological awareness skills in teaching reading to first stage students. This demonstrates their awareness that phonological awareness activities are crucial for first stage students to acquire reading skills.

Hamidouch's study (2003) on "Phonological Awareness Study within Reading Learning Activities" examined a sample of 20 cases with a good level of reading proficiency using a test measuring awareness of phonological units. The results indicated that the development of phonological awareness significantly impacts reading outcomes.

Building on this premise, this study targeted phonological awareness in children with dyslexia, posing the following questions:

- What is the level of phonological awareness in children with dyslexia?
- Are there gender differences in phonological awareness levels among children with dyslexia?

The importance and objectives of the study :

The importance of this study theoretically lies in expanding research horizons in the field of phonological awareness in children with dyslexia. Additionally, it aims to study phonological awareness as a necessity for overcoming reading difficulties before they manifest and as a preventive measure for those that have already appeared. This opens the door for complementary studies to develop therapeutic plans aimed at providing effective treatment for dyslexia.

The specific objectives of the study can be summarized as follows:

- Assessing the level of phonological awareness in children with dyslexia.
- Investigating gender differences in phonological awareness levels among children with dyslexia.

Concepts of study :

1- Phonological awareness: It is individuals' capacity to discern various speech components and to be cognizant of individuals in different dimensions, dealing with phonological units. The latter is not innate or spontaneous but manifests with literacy acquisition and grows interactively with it (Issoufaly, M, 1999).

Phonological awareness is a potent self-learning mechanism linked to alphabetical writings. A child initially learns the alphabet principle and subsequently acquires a sufficient number of correspondences between letters and sounds to commence decoding. This matching of sound to letter gradually becomes mechanized over time (Zorman, 1999).

Phonological awareness is defined as the knowledge of the linguistic sound units as represented by the alphabet and understanding the systematic relationships between letters and phonemes. It involves segmenting the symbols that form words and the ability to manipulate them through matching the pronunciation of a word with its spelling. This is achieved by exposing the learner to language through listening, speaking, and connecting with reading and writing (Jalal al Din Suleiman, 2012).

Operationally, it is defined as the score obtained by children with dyslexia in the phonological awareness test, according to researcher Layes Ismail (2015).

2- **Dyslexia**: It is a partial or complete inability to read or understand what an individual reads, whether silently or aloud (Jaafira , 2008)

Dyslexia is a condition that lies between mechanical impairment and emotional factors. It is a complex interaction that begins at birth and persists until the disorder emerges (Estienne, 1998)

Dyslexia is the discrepancy between reading level and intellectual abilities measured by IQ, with the necessity of excluding all possible causes leading to this difference. It represents a

fundamental criterion for diagnosis, including neurological conditions, socioeconomic deprivation, and cultural factors in the surrounding environment (Anne van Hout,2001)

Operationally, it is defined as the score obtained by children with dyslexia in the reading test, according to researcher Layes Ismail (2015)

2- Methods :

1. **The Adopted Methodology:**

This study relied on a descriptive approach as the most suitable method for achieving its objectives.

2. **Study Sample:**

The study was conducted on a sample of 48 elementary school students from the province of Oum El Bouaghi, selected purposively ,The selection criteria included:

- Exclusion of students repeating the academic year.
- Exclusion of cases of intellectual delay.
- Exclusion of cases suffering from speech disorders (stuttering).

3. **Study Instruments:**

The following instruments were used:

- **Reading Test (Word Reading) by Lais :**

This test was developed by researcher Ismail Lais in 2015 and has been widely used in various research studies (Bachelor's, Master's, and Doctoral levels). It serves as a diagnostic test to measure students' reading ability by instructing them to read a set of words at three levels: common words, uncommon words, and pseudowords.

Common Words: This test consists of 40 words divided into two sections: 20 simple words and 20 compound words.

Uncommon Words: This test also consists of 40 words divided into two sections: 20 simple words and 20 compound words, and is more challenging for students compared to the common words test.

Pseudowords: This test consists of 20 words composed of letter combinations resembling real words but without any meaning. It is more difficult for students compared to both the common and uncommon words tests.

The instructions are as follows: "I will present a series of words in front of you, and you need to read them in the given order."

Scoring is done by:

- Giving the student a score of (1) for each correct answer and (0) for each incorrect answer.
- Summing the correct answers to determine the student's total score.

The test's psychometric properties were calculated by its author through a study titled "Phonology and Its Relationship with Word Reading Skills and Reading Comprehension in a Sample of Students with Reading Difficulties."

The results obtained are as follows:

For validity: The test author calculated validity using extreme group comparison, obtaining a t-value of 34.72, which is significant at 0.000. This indicates statistically significant differences between the mean scores of the high and low groups, demonstrating the test's high ability to distinguish children with reading difficulties, thereby confirming its high validity and that it measures what it is intended to measure.

For reliability: The test author calculated reliability using Cronbach's alpha coefficient, which resulted in a value of 0.87 (Layes et al , 2015)

Phonological Awareness Test:

The phonological awareness test by researcher Layes (2015) is part of the Early Detection Battery for Learning Disabilities and is used alongside other tests for phonological skills and memory to assess reading skills.

The test is administered as follows:

The student is first asked to remove one sound from a word, whether it is at the beginning, middle, or end, and then read the remaining word without the removed sound. The word is presented clearly once without repetition. The test instruction is: "Now I will say some words to you one by one, and I ask you to delete a specific sound from the word. Then, tell me what remains of the word after deleting the sound.

I'll give you an example: If I say "**kuras**" and ask you to remove the sound **"k"** tell me what remains. If the child answers correctly, we proceed with the test; otherwise, we provide another example. Correct answers are given a score of 1, and incorrect answers a score of0. As for the psychometric properties of the test, since it was developed in an Algerian context, we relied on the validity and reliability established by the test's author (Layes et al , 2015)

3- Results and Discussion :

4. 1. Presentation and Discussion of the First Question's Results:

This question asks: What is the level of phonological awareness in children with dyslexia?

To answer this question, the arithmetic mean, theoretical mean, and standard deviation were calculated. The results are as follows:

5. Table (1): Level of Phonological Awareness in Children with Dyslexia.

Variable	Arithmetic mean	Theoretical mean	Standard deviation
Phonological awareness	4.25	05	2.33

We observe from the table that the arithmetic mean is lower than the theoretical mean, indicating a low level of phonological awareness in children with dyslexia.

This finding aligns with the study by Al Jaeed (2018), which found that phonological awareness is lower in individuals with dyslexia compared to their typically developing peers. Similarly, Zazai's study (2023) on the relationship between clinical interventions for phonological deficit and reading accuracy in dyslexic individuals also concluded that phonological deficit contributes to decreased reading accuracy in dyslexic individuals. Additionally, a study by Layes et al. (2020) on "Phonology and its relationship with word reading skills and reading comprehension in a sample of students with reading difficulties" found that children with dyslexia struggle with applying phonological pairing rules and decoding words, evident from their poor performance in phonological tasks during phonological awareness tests.

Additionally, Shaabani's study (2016) concluded that students who struggle with phonological awareness also face difficulties in learning to read.

The researcher explains this result by highlighting the relationship between phonological awareness and reading skills, as phonological awareness, being a linguistic cognitive ability, develops rapidly with children's learning of language letters. Teaching letters involves teaching phonemes that represent them, establishing a mutual relationship between phonological awareness and learning to read.

Most theories recognize that successful reading development is marked by successful phonological awareness development. Reading difficulties are also linked to phonological awareness deficits, and the evidence linking phonological representation impairment to reading difficulties is a strong indication that some propose defining dyslexia as a phonological deficit (Abu Al Diyar, 2012).

3.2. Presentation and Discussion of the Second Question's Results:

This question asks: Are there differences in phonological awareness levels among children with dyslexia due to gender?

To answer this question, an independent samples t-test was used for the two groups and the results were as follows :

Table (2): Differences in Phonological Awareness Levels According to the Gender of Children with Dyslexia.

Variables		Arithmetic mean	Standard deviation	Degrees of freedom	T-value	Significance level
Phonological awareness	males	4	2.25	46	-1.10	Non-functional (0.27)
	females	4.8	2.48			

The table indicates statistically non-significant differences in phonological awareness levels among children with reading difficulties based on gender, reflected by the similar averages between males and females. This finding aligns with Khalil's study (2016), which found no gender differences in phonological awareness among individuals struggling with reading difficulties. Similarly, the study by Hawila and Al Diyar (2015) concluded that there were no disparities between male and female readers with difficulties in phonological awareness skills.

The researcher interprets this result as both genders suffering from a phonological processing disorder, which manifests as difficulty in recognizing and generating phonemic units in words. This is attributed to the similar biological development of both sexes, indicating that the brain and sensory systems of males and females develop similarly in terms of phonemic awareness, resulting in comparable levels of phonological awareness. Additionally, the educational and upbringing styles these children are exposed to may be alike, leading to no significant differences in the level of phonological awareness in dyslexic children based on gender.

4- Conclusion :

According to the findings of the statistical analysis of the data collected from the sample individuals, the study reached the following conclusions:

- The level of phonemic awareness is low in children with dyslexia.

- There are no statistically significant differences in the level of phonemic awareness in children with dyslexia based on gender.

Based on these results, the following recommendations were proposed:

- The necessity of incorporating phonological awareness in curricula to help prevent learning difficulties.

- Focusing on both males and females to enhance phonological awareness and reading fluency.

- Implementing remedial programs to improve the phonological awareness level in children with dyslexia.

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