

Abstract Word Comprehension in Children with Developmental Language Disorder and Children with Typical Language Development

فهم الألفاظ الأكثر تجريداً لدى الأطفال ذوي اضطراب لغوي نمائي ونماء لغوي نموذجي

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Abstract:	Article info
This study investigated the comprehension of abstract words in children with Developmental Language Disorder (DLD) compared to typical language development peers. A group of 16 children were presented with images and asked to identify them. Results indicated no significant differences in comprehension between the two groups ($p = 0.41$), suggesting that children with DLD may not have deficits in understanding abstract concepts. However, error rates were slightly higher for the DLD group, indicating potential difficulties in processing specific abstract words. These findings contribute to understanding the nature of language difficulties in DLD and highlight the importance of considering vocabulary hierarchy in assessments and interventions.	Received:16/10/2024 Accepted :16/12/2024
	Keyword: ✓ Developmental language disorder ✓ More abstract word comprehension ✓ Superordinate-level categories
ملخص:	معلومات المقال
بحثت هذه الدراسة في فهم الألفاظ الأكثر تجريداً لدى الأطفال ذوي اضطراب لغوي نمائي مقارنة بنظرائهم ذوي نماء لغوي نموذجي. تم تقديم صور لمجموعة من 16 طفلاً، وطلب منهم تحديدها. أشارت النتائج إلى عدم وجود فروق ذات دلالة في الفهم بين المجموعتين ($p = 0.41$)، مما يشير إلى أن الأطفال ذوي اضطراب لغوي نمائي قد لا يواجهون عجزاً في فهم التصورات المجردة. ومع ذلك، كانت معدلات الخطأ أعلى قليلاً لدى الأطفال ذوي اضطراب لغوي نمائي، مما يشير إلى صعوبات محتملة في معالجة ألفاظ مجردة محددة. تساهم هذه النتائج في فهم طبيعة صعوبات اللغة في اضطراب اللغة النمائي، وتسلط الضوء على أهمية مراعاة التسلسل الهرمي للكلمات في التقييمات، والتدخلات.	تاريخ الإرسال: 2024/10/16 تاريخ القبول: 2024/12/16
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❖ **Introduction :** Developmental Language Disorder (DLD), also known as Specific Language Impairment (SLI), is a neurodevelopmental condition that primarily affects language acquisition. Children with DLD exhibit significant difficulties in acquiring and using language, despite having normal intelligence and typical development in other areas. This condition impacts approximately 7% of children worldwide, making it a prevalent developmental disorder (American Psychiatric Association, 2022; Leonard, 2014; Verhoeven & van Balkom, 2003; World Health Organization, 2022).

Key characteristics of DLD include delayed language development, challenges in understanding and producing complex language structures, and limited vocabulary growth. While some children with DLD may experience improvements over time, many continue to struggle with language throughout their lives. These persistent language difficulties can have a profound impact on various aspects of their lives, including academic achievement, social interactions, and overall quality of life (American Psychiatric Association, 2022; Leonard, 2014; Verhoeven & van Balkom, 2003; World Health Organization, 2022).

Research has shown that children with DLD are at an increased risk of developing other related disorders. These include developmental learning disorders such as dyslexia and dysgraphia, as well as speech disorders like phonological programming deficits and stuttering. These co-occurring conditions further complicate the language challenges faced by individuals with DLD, highlighting the complex nature of this disorder (Aimard, 1996; Campolini, Van Hövell, & Vansteelandt, 1997; Chevrie-Muller, 2007; Launay, 1975; Le Normand, 2000; Leonard, 2014; Van Hout, 2000; Verhoeven & van Balkom, 2003).

The impact of DLD extends beyond early childhood. As children with this condition progress through their education, they may continue to experience difficulties in comprehending and producing language, which can hinder their academic performance and social interactions. Understanding the underlying mechanisms of DLD and developing effective interventions is crucial for improving the lives of individuals with this disorder (Aimard, 1996; Campolini, Van Hövell, & Vansteelandt, 1997; Chevrie-Muller, 2007; Launay, 1975; Le Normand, 2000; Leonard, 2014; Van Hout, 2000; Verhoeven & van Balkom, 2003).

Vocabulary development in children with typical language development (TLD) follows a well-established pattern, marked by initial word production around 12 months and rapid growth thereafter. However, significant individual differences exist in the rate and extent of this development. Word comprehension generally precedes production, with a notable gap between the two. Research suggests a significant delay between understanding and producing words, highlighting the

distinct cognitive and neural processes involved. While production relies on motor and articulatory skills, comprehension engages a broader range of cognitive and symbolic systems (Bassano, 2000; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Bates, Dale, & Thal, 1996; Bates et al., 1994; Benedict, 1979; Fenson et al., 1994).

Children with DLD exhibit delays in early lexical development, with later onset of first words and slower vocabulary growth compared to typically developing peers. They may also have smaller and less diverse lexicons. However, the types of words acquired, and their patterns of use are like those of younger typically developing children. Children with DLD often exhibit significant delays in word production. Even when they make progress, they may continue to struggle with more complex language tasks, such as understanding abstract words. These persistent difficulties underscore the unique challenges faced by children with DLD in acquiring and using language effectively (Leonard, 2014; Verhoeven & van Balkom, 2003).

Restricted vocabulary impedes comprehension and production in children with DLD, affecting communication and academic skills (Verhoeven & van Balkom, 2003). Studies by McGregor and Windsor (1996) show that even when provided with semantic cues, children with DLD exhibit lower accuracy in word retrieval than typically developing peers, suggesting that their lexical networks lack the depth necessary for robust comprehension. Dollaghan's (1987) research on fast mapping—children's ability to form word-referent associations after limited exposure—revealed that although children with DLD can sometimes match their peers in initial comprehension, they often struggle with production, indicating incomplete or weak representations of words.

Further research on error patterns by McGregor (1997) found a high frequency of semantically related errors in children with DLD, implying gaps in their semantic networks that make precise comprehension difficult. Leonard, Miller, and Gerber (1999) observed that slower response times in DLD children's word retrieval likely hinder real-time comprehension in conversational contexts. Together, these findings suggest that lexical deficits in DLD are characterized by both sparse and weakly interconnected semantic networks. This not only affects children's ability to quickly and accurately retrieve words but also impacts their ability to fully grasp meanings, especially for abstract concepts that rely on more complex inferencing and contextual understanding.

Word comprehension and word production are two distinct aspects of language development, each relying on different cognitive processes and neural systems. Comprehension reflects a child's understanding of language, while production represents their ability to actively use language. Comprehension appears to be more closely linked to broader cognitive functions, such as symbolic and motor

processes, than production. It involves complex mental activity that engages both hemispheres of the brain, relying heavily on contextual and pragmatic cues to interpret meaning. In contrast, word production is primarily an analytical linguistic task that predominantly involves the left hemisphere. This suggests that while comprehension draws upon a wider range of cognitive abilities, production is more specifically tied to language-related processes (Bassano, 2000; Bates, Dale, & Thal, 1996; Fenson et al., 1994).

Rosch et al. (1976) describe categories as being hierarchically organized into three levels of abstraction: superordinate (higher), basic, and subordinate (lower), with each level reflecting a different degree of abstraction. Basic-level categories are typically the first categories children acquire due to their optimal balance between specificity and generalization. Terms like “cat” or “tree” provide enough concrete detail for children to form clear associations, while still being broad enough to encompass multiple instances of a category. After mastering basic-level categories, children progress to superordinate-level words, which are more abstract and general. Examples include “animal” or “plant,” which encompass a wider range of subcategories. Finally, children learn subordinate-level terms, which are highly specific and detailed. Terms like “Siamese cat” or “pine tree” require a more refined understanding of distinctions within a category. This hierarchical organization of categories reflects the developmental progression of children's cognitive and linguistic abilities, as they gradually move from concrete to more abstract concepts (Horton & Markman, 1980; Mervis & Crisafi, 1982; Murphy & Smith, 1982; Murphy & Wisniewski, 1989; Rosch et al., 1976; Thibaut, 1999; VandenBos, 2015).

These hierarchical levels of categories correspond to different levels of abstraction, ranging from the least abstract (subordinate) to the most abstract (superordinate). As children progress through these levels, they develop the ability to manage varying degrees of specificity and generality. The distinction between less abstract and more abstract terms reflects how words are organized conceptually. More abstract terms encompass broader categories, while less abstract terms denote more concrete and specific instances. This continuum of abstraction is essential for linguistic development, as it allows children to flexibly apply language to diverse contexts. Linguistically, abstraction is a key characteristic of word meaning (semantics). More abstract terms are less tied to specific physical experiences or sensory inputs, while more embodied meanings are grounded in direct perceptual or motor experiences (Bloch, 1999; Nyckees, 1998; VandenBos, 2015).

Furthermore, the progression from basic level to superordinate and subordinate categories reflects a growing sophistication in a child's cognitive and linguistic abilities. As children advance in their language development, they move beyond simply labeling objects in their environment to understanding broader, more

abstract relationships between categories and more fine-grained distinctions within those categories. This hierarchical acquisition is not only central to vocabulary growth but also to broader cognitive functions such as categorization, problem-solving, and reasoning. By mastering this hierarchical structure, children develop the ability to think critically, analyze information, and make inferences, laying the foundation for more complex cognitive processes. This makes it a fundamental aspect of both linguistic and cognitive development.

The significance of this study lies in its contribution to understanding and addressing the specific language challenges faced by children with DLD. By examining comprehension difficulties at the superordinate category level—words that represent broad, abstract groups such as “animals” or “furniture”—this research sheds light on a critical aspect of vocabulary development that can influence a child’s ability to organize, retrieve, and generalize language effectively. Mastering superordinate categories is essential, as these words allow children to understand broader relationships and groupings, which are fundamental to both language acquisition and the development of higher-level cognitive skills, such as problem-solving and critical thinking.

This study’s findings could be instrumental in shaping therapeutic and educational interventions that go beyond simple vocabulary expansion to focus on the child’s ability to comprehend and utilize broader, abstract terms. Such interventions would aim to enhance the child’s capacity to organize words meaningfully, facilitating more effective communication and supporting their academic progress. Additionally, the ability to understand and use superordinate-level vocabulary is crucial for social interaction, as it enables children to engage in conversations that involve sharing general ideas, making comparisons, and discussing concepts that go beyond immediate, concrete experiences. Children with a more developed grasp of these abstract terms are better equipped to participate in group discussions, follow broader conversations, and connect with peers on shared interests or topics, enhancing both social inclusion and emotional well-being. Since superordinate category knowledge underpins language use across various settings—helping children to connect ideas, engage in classroom discussions, and comprehend general instructions—interventions that target these areas could significantly improve both language and learning outcomes.

Additionally, by investigating specific patterns in word-finding and comprehension related to superordinate categories, this study may aid in refining diagnostic practices. It could enable practitioners to better identify and differentiate language deficits that are particularly characteristic of DLD. This would allow for more personalized approaches in speech therapy, equipping professionals with focused techniques to help children develop category-based vocabulary skills, which are essential for both oral and written language tasks. Ultimately, this research aims to bridge the gap between theoretical insights on

language acquisition and practical strategies for supporting children with DLD, offering a path toward more effective language support that can foster both linguistic growth, academic success, and enriched social interaction.

The primary purpose of this study was to investigate whether children with DLD exhibit deficits in comprehending more abstract words compared to their TLD peers. The secondary purpose was to determine whether children with DLD encountered more difficulty in comprehending more abstract words compared to their TLD peers. The research questions were: (1) Are there significant differences in more abstract word comprehension (MAWC) between children with DLD and children with TLD? and (2) Do children with DLD exhibit higher error rates in comprehending more abstract words compared to children with TLD? The hypotheses were: (1) Children with DLD will have significantly lower performances on MAWC compared to children with TLD, and (2) Children with DLD will have significantly higher error rates on MAWC compared to children with TLD.

❖ *Method:*

- **Participants:** Sixteen school-age children participated in this study, eight with DLD and eight TLD children. All participants were Algerian, enrolled in primary school, and spoke Algerian Arabic. None had any known physical, social-emotional, or neurological disabilities. Table 1 provides a detailed description of the participants.

Table 1. Demographic Characteristics of Participants: DLD and TLD

Variable	DLD	TLD
Number	8	8
Median Age (Years;Months)	8;6	8;6
MAD (Months)	0.54	0.79
IQR (Months)	1.08	1.14
Gender (Male/Female)	5/3	5/3
Institution Type	Public/Private	Public

The DLD group consisted of five males and three females with a median age of 8 years, 6 months ($n = 8$, $Mdn = 8;6$ years;months, $MAD = 0.54$ month, $IQR = 1.08$). Participants were recruited from various sources, including Thenia Public Hospital (Boumerdès Province), two polyclinics in Ben Aknoun (Algiers Province) and Beni Amran (Boumerdès Province), and two private practices in Bordj Menâïel (Boumerdès Province) and

Rouiba (Algiers Province). All children in this group were diagnosed with DLD by speech-language pathologists and were receiving intervention services.

To be included in the study, participants with DLD had to meet the following criteria:

- Chronological age between 7 and 10 years
- Significant language impairment
- Normal intelligence
- Normal hearing
- Normal speech movements
- Normal social-emotional development
- No history of lesions, injuries, or brain disorders
- No autism spectrum disorder

The TLD group consisted of eight children (same gender and age-matched to the DLD group, $n = 8$, $Mdn = 8;6$ years;months, $MAD = 0.79$ month, $IQR = 1.14$ month) selected from two public primary schools in Bordj Menaïel. Participants were screened by their teachers for any academic, behavioral, or communication problems.

To be included in the study, TLD children had to meet the following criteria:

- Same gender as the children with DLD
- Chronological age within 6 months of the children with DLD
- No history of academic, behavioral, or communication problems requiring special services, as reported by teachers
- Randomly selected from the pool of eligible peers to match the DLD participants

▪ **Design:** A comparative research design was employed to investigate differences in MAWC between children with DLD and TLD children. Participants were assigned to one of two groups based on their diagnostic status: the DLD group or the TLD group.

This study employed a between-subjects descriptive research design to compare the MAWC performance of two independent groups: children with DLD and TLD children. Group membership served as the classification/independent variable, while MAWC performance was the criterion/dependent variable. This design was chosen to assess potential differences in language abilities between the two groups.

To compare MAWC scores between the DLD and TLD groups, a Mann-Whitney U test was conducted. This non-parametric test was chosen due to the non-normal distribution of the data. Statistical analyses were performed using JASP (version 0.19.1).

▪ **Materials:** A set of 24 color photographs depicting superordinate-level categories was used for the task, adapted from (أوشايت، 2008). Table 2 presents the categories used in this study. The pictures were carefully selected to be familiar to the children while avoiding overly obvious identification of correct exemplars. The images were chosen based on their frequency of use in everyday Algerian Arabic and their cultural relevance. The task was designed to assess both picture identification and hierarchical level identification, inspired by Rondal's (1997) evaluation framework.

Table 2. The Four Categories Used as Stimuli

Superordinate Level	Basic Level
Animals	Cat, dog, sheep, cow, rabbit, pigeon
Plants	Grass, rose, pine tree, fig tree, olive tree, palm tree
Furniture	Chair, table, TV, oven, refrigerator, wardrobe
Transportation	Car, motorcycle, train, ship, airplane

▪ **Procedure:** The study was conducted in a quiet, well-lit room, where each child was assessed individually by the researcher in a face-to-face setting. A set of images, each depicting four exemplars and two distractors from four superordinate categories (plants, animals, furniture, and transportation), was presented to the participant.

Participants were instructed to silently observe the images and then point to all exemplars within a given category, excluding distractors. The researcher provided

simple, clear instructions in the form of imperative sentences (e.g., “Show me the animals”).

The researcher recorded the child's responses using a coding system. A score of 1 was assigned for each correct identification of all four exemplars within a category, and a score of 0 was assigned for incorrect responses. Incorrect responses included identifying fewer than four exemplars, pointing to distractors, or refusing to point.

Following the administration of the MAWC task, the researcher calculated the total score based on the number of correctly identified categories.

❖ **Results:**

- **Comprehension of more abstract words:** To investigate differences in the comprehension of more abstract words between children with DLD and TLD children, a between-subjects descriptive research design was employed. Sixteen participants were divided into two groups: DLD ($n = 8$) and TLD ($n = 8$). The comprehension of more abstract words was assessed using the MAWC task.

Table 3 presents the MAWC scores for both groups. The findings indicated no significant difference between the MAWC scores of children with DLD and TLD. A Mann-Whitney U test revealed that the two groups did not differ significantly in their comprehension of more abstract words, $U = 29.5$, $p = 0.41$, $r_B = -0.08$. Both groups had a median score of 3 on the MAWC task, suggesting that they understood a similar number of more abstract words.

These results suggest that the children with DLD in this study, despite their language impairments, did not exhibit significant deficits in their comprehension of more abstract vocabulary compared to their typically developing peers.

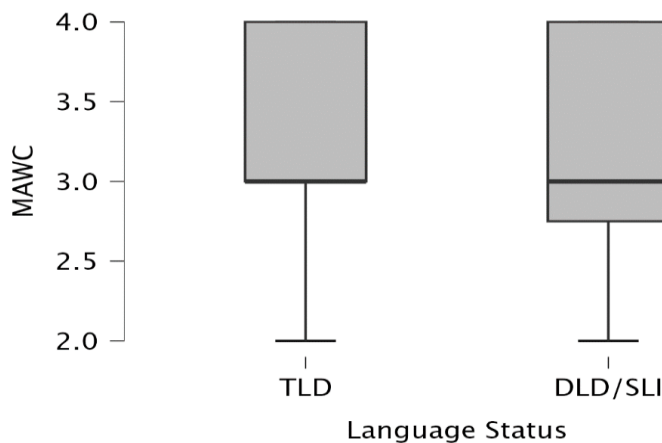
Table 3. Scores of the MAWC Task

Participants	MAWC	
	DLD	TLD
1	3	3
2	2	4
3	3	3
4	3	2
5	4	4
6	4	4
7	2	3
8	4	3

The effect size reported in the Mann-Whitney U test is $r_B = -0.078$, indicating a small effect size. While the statistical test did not reveal a significant difference between the two groups, the small effect size suggests that any observed difference is likely to be minimal.

Figure 1 provides a visual representation of the MAWC scores for both groups. The boxplot illustrates the median, interquartile range (IQR), and the range of scores for each group. While the median scores for both groups are similar, the DLD group exhibits a slightly wider spread of scores and a larger IQR. This suggests that, although the overall comprehension levels are comparable, there is slightly more variability in the performance of children with DLD on this task.

Figure 1. Boxplot Depicting the Difference Between Children with DLD and TLD



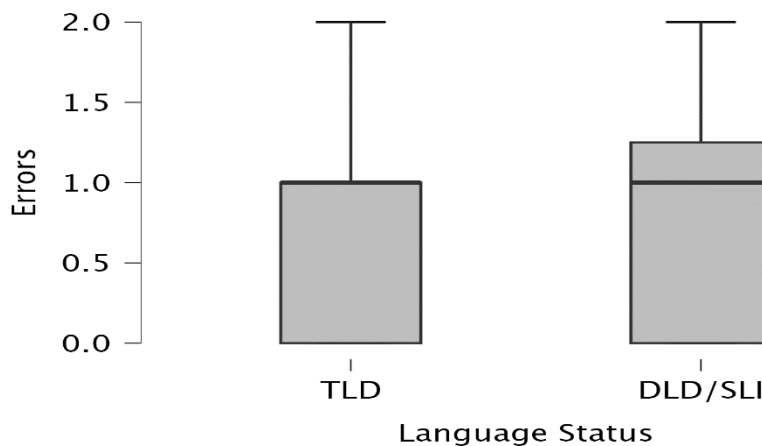
- **Difficulty in comprehending more abstract words:** A secondary goal of this study was to determine whether children with DLD experienced greater difficulty in comprehending more abstract words compared to their typically developing peers. The error rates for both groups are presented in Table 4. Children with DLD had an error rate of 21.88%, while children with TLD had an error rate of 18.75%. A Mann-Whitney U test revealed no significant difference between the two groups, $U = 34.5$, $p = 0.63$, $r_B = 0.08$. This suggests that both groups exhibited similar levels of accuracy in comprehending more abstract words.

Table 4. Scores of the Error Rates

Participants	Errors	
	DLD	TLD
1	1	1
2	2	0
3	1	1
4	1	2
5	0	0
6	0	0
7	2	1
8	0	1

Figure 2 provides a visual representation of the error rates for both groups. The boxplot suggests that, on average, individuals with DLD tend to make slightly more errors than those with TLD. Additionally, there is greater variability in error rates among individuals with DLD, indicating that some individuals with DLD may make significantly more errors than others.

Figure 2. Boxplot Depicting Error Rates Between Children with DLD and TLD



Due to the small sample size in each group ($n = 8$), the statistical power of the study is limited, making it difficult to draw definitive conclusions about the significance of the findings on MAWC. Therefore, the comprehension scores presented here should be considered exploratory and require further investigation with a larger sample size to confirm these preliminary results.

❖ **Discussion:** The results of this study did not support the initial hypothesis that children with DLD would exhibit deficits in comprehending more abstract words. Contrary to expectations, children with DLD demonstrated comparable levels of comprehension to their typically developing peers. This finding aligns with previous research suggesting that comprehension typically precedes production in language development (Bassano, 2000; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Bates, Dale, & Thal, 1996; Benedict, 1979). The relative preservation of comprehension skills in children with DLD, particularly in the domain of more abstract vocabulary, may be because comprehension is often less affected by the underlying language impairments than production. While children with DLD may struggle with the expressive aspects of language, such as producing complex sentences or finding the right words, their ability to understand language, especially at a more abstract level, may remain relatively intact. This suggests that comprehension may rely on different cognitive processes than production, and that these processes may be less impaired in children with DLD (Aimard, 1996; Campolini, Van Hövell, & Vansteelandt, 1997; Chevrie-Muller, 2007; de Weck, 1996; Launay, 1975; Le Normand, 2000; Van Hout, 2000). The successful performance of the DLD group on the MAWC task suggests that these children have developed a robust mental lexicon, including more abstract concepts. This indicates that they have successfully transitioned to the second stage of

vocabulary development, as evidenced by their ability to comprehend superordinate-level categories such as animals, plants, furniture, and transportation. The observed difficulties in these children's language production may be attributed to challenges in retrieving and expressing these more abstract concepts, rather than a deficit in their underlying semantic knowledge. This suggests that their difficulties may lie more in the production aspects of language, such as phonological encoding or syntactic planning, rather than in their conceptual understanding (Chevrie-Muller, 2007). One possible explanation for the discrepancy between comprehension and production in children with DLD is the asynchronous development of language components. While their comprehension of abstract concepts may have progressed to a higher level, such as superordinate-level categories, their production of these concepts may still be developing at a more basic level. This developmental lag could be a residual effect of the underlying language impairment, suggesting that the production system may be more vulnerable to impairment than the comprehension system (أوشايت، 2008). While the current study did not find significant differences in overall comprehension scores between children with DLD and typically developing peers, it is important to note that children with DLD exhibited slightly higher error rates on the more abstract word comprehension task. This suggests that, although they may not have significant deficits in comprehending abstract concepts, they may encounter more difficulties with specific words or require more time to process their meaning.

The current study's focus on more abstract words highlights the importance of considering the hierarchical nature of vocabulary development. By understanding the hierarchical organization of vocabulary into superordinate, basic, and subordinate levels, speech-language pathologists can assess language impairments with greater precision and tailor interventions to address specific areas of need.

It is crucial to acknowledge the limitations of the present study. The small sample size in each group limits the generalizability of the findings and reduces the statistical power to detect significant differences. Therefore, the results should be interpreted with caution and further investigation is needed to confirm these findings in a larger sample. Additionally, the study focused solely on more abstract words and did not examine middle and lower-level abstract words, such as basic and subordinate-level categories or concepts. Future research could explore whether children with DLD exhibit similar or different patterns of vocabulary acquisition, comprehension, production, or use in these areas, as well as the relationship between vocabulary development and other language skills.

Despite these limitations, the findings of this study contribute to the ongoing discussion regarding the nature of language difficulties in children with DLD. The results suggest that while children with DLD may face challenges in certain

aspects of language acquisition, their comprehension of more abstract words may not be significantly impaired. Further research is needed to elucidate the specific areas of language that are most affected in children with DLD and to develop effective interventions to support their language development.

❖ **Conclusion:** In conclusion, this study provides evidence that children with DLD do not exhibit significant deficits in comprehending more abstract words, contrary to the initial hypothesis. Their comparable performance to typically developing peers suggests that comprehension, particularly at the superordinate level, is relatively preserved in these children. This finding reinforces the notion that comprehension tends to precede production in language development, with challenges in production potentially stemming from retrieval difficulties rather than deficits in semantic knowledge. However, subtle differences in error rates and processing time suggest that children with DLD may still experience some difficulties in comprehending more abstract words. While these differences were not statistically significant in this study, they warrant further investigation to explore the specific nature of these difficulties.

While the study's small sample size and focus on abstract words limit the generalizability of the results, these findings offer valuable insights into the nature of language impairment in DLD. Further research is needed to explore different vocabulary levels (basic, subordinate, and superordinate), as well as the relationship between vocabulary development and other language skills, such as grammar and pragmatics, in a larger cohort of children with DLD. By gaining a deeper understanding of the specific language strengths and weaknesses of children with DLD, we can develop more targeted and effective interventions to support their language development and improve their overall communication abilities.

❖ Bibliography:

1. Aimard, P. (1996). *Les débuts du langage chez l'enfant*. Paris, France : Dunod.
2. American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR (5th ed., text revision)*. Washington, United States: American Psychiatric Association Publishing.
3. Bassano, D. (2000). *La constitution du lexique : Le développement lexical précoce*. In *L'acquisition du langage : Le langage en émergence, de la naissance à 3 ans (Vol. 1)*. Paris, France : Presses Universitaires de France.
4. Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V. (1979). *Cognition and communication from nine to thirteen months: Correlational findings*. In *The emergence of symbols*. New York, United States: Academic Press.
5. Bates, E., Dale, P. S., & Thal, D. (1996). *Individual differences and their implications for theories of language development*. In *The handbook of child language*. Oxford, England: Blackwell Publishing Ltd.
6. Bates, E., Marchman, V., Thal, D., Fenson, L., Dale, P., Reznick, J. S., Reilly, J., & Hartung, J. (1994). *Developmental and stylistic variation in the composition of early vocabulary*. *Journal of Child Language*, 21(1), 85-123.
7. Benedict, H. (1979). *Early lexical development: Comprehension and production*. *Journal of Child Language*, 6(2), 182-200.
8. Bloch, H. (1999). *Grand dictionnaire de la psychologie (2e éd.)*. Paris, France : Larousse.

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9. Campolini, C., Van Hövell, V., & Vansteelandt, A. (1997). Dictionnaire de logopédie : Le développement normal du langage et sa pathologie. Louvain-la-Neuve, Belgique : Peeters.
10. Chevrier-Muller, C. (2007). Troubles spécifiques du développement du langage (TSDL) – « Dysphasies de développement ». In *Le langage de l'enfant : Aspects normaux et pathologiques* (3e éd.). Paris, France : Elsevier-Masson.
11. de Weck, G. (1996). Troubles du développement du langage : De la structure au discours. In *Troubles du développement du langage : Perspectives pragmatiques et discursives*. Lausanne, Suisse : Delachaux et Niestlé.
12. Dollaghan, C. A. (1987). Fast mapping in normal and language-impaired children. *Journal of Speech and Hearing Disorders*, 52(3), 218–222.
13. Fenson, L., Dale, P. S., Reznick, J. S., Bates, E., Thal, D. J., Pethick, S. J., Tomasello, M., Mervis, C. B., & Stiles, J. (1994). Variability in early communicative development. *Monographs of the Society for Research in Child Development*, 59(5), 1–185.
14. Horton, M. S., & Markman, E. M. (1980). Developmental differences in the acquisition of basic and superordinate categories. *Child Development*, 51(3), 708–719.
15. Launay, C. (1975). *Les troubles habituels d'acquisition du langage*. In *Les Troubles du langage, de la parole et de la voix chez l'enfant* (2e éd.). Paris, France : Masson.
16. Le Normand, M. T. (2000). Retards de langage et dysphasies. In *Troubles du langage : Bases théoriques, diagnostic et rééducation*. Sprimont, Belgique : Editions Mardaga.
17. Leonard, L. B. (2014). *Children with specific language impairment* (2nd ed.). Cambridge, United States: The MIT Press.
18. Leonard, L. B., Miller, C., & Gerber, E. (1999). Grammatical morphology and the lexicon in children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, 42(3), 678–689.
19. McGregor, K. K. (1997). The nature of word-finding errors of preschoolers with and without word-finding deficits. *Journal of Speech, Language, and Hearing Research*, 40(6), 1232–1234.
20. McGregor, K. K., & Windsor, J. (1996). Effects of priming on the naming accuracy of preschoolers with word-finding deficits. *Journal of Speech, Language, and Hearing Research*, 39(5), 1049–1058.
21. Mervis, C. B., & Crisafi, M. A. (1982). Order of acquisition of subordinate-, basic-, and superordinate-level categories. *Child Development*, 53(1), 258–266.
22. Murphy, G. L., & Smith, E. E. (1982). Basic-level superiority in picture categorization. *Journal of Verbal Learning and Verbal Behavior*, 21(1), 1–67.
23. Murphy, G. L., & Wisniewski, E. J. (1989). Categorizing objects in isolation and in scenes: What a superordinate is good for. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 15(4), 572–586.
24. Nycke, V. (1998). *La sémantique*. Paris, France : Belin.
25. Rondal, J. A. (1997). *L'évaluation du langage*. Sprimont, Belgique : Editions Mardaga.
26. Rosch, E., Mervis, C. B., Gray, W. D., Johnson, D. M., & Boyes-Braem, P. (1976). Basic objects in natural categories. *Cognitive Psychology*, 8(3), 382–439.
27. Thibaut, J. P. (1999). Développement conceptuel. In *Manuel de psychologie de l'enfant*. Sprimont, Belgique : Editions Mardaga.
28. VandenBos, G. R. (2015). *APA dictionary of psychology* (2nd ed.). Washington, United States: American Psychological Association.
29. Van Hout, A. (2000). *Les pathologies de l'oral*. In *L'acquisition du langage : Le langage en émergence, de la naissance à 3 ans* (Vol. 1). Paris, France : Presses Universitaires de France.
30. Verhoeven, L., & van Balkom, H. (2003). Developmental language disorders: Classification, assessment, and intervention. In *Classification of developmental language disorders: Theoretical issues and clinical implications*. New York, United States: Lawrence Erlbaum Associates.
31. World Health Organization. (2022). *International classification of diseases eleventh revision (ICD-11)*. Geneva, Switzerland: World Health Organization.

32. أوشايت، و. (2008). دراسة تجريبية للكلمات الأكثر تحدياً لدى أطفال بين سبع سنوات وعشر أصيبوا باضطراب يسير خاص بتطور اللغة المنطوقة (رسالة ماجستير). قسم الأروطوفونيا، كلية العلوم الاجتماعية، جامعة الجزائر، الجزائر.