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Reading Difficulties Faced by Dyslexic Learners of English: an Exploratory Study at Govt. Special Education Center, Ahmad Pur Sial Jhang



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Abstract: This research focuses on discerning the reading barriers faced by dyslexic English learners at Ahmad Pur Sial, Special Education Center in Jhang, employing a qualitative methodology. The study selects students in the first and second grades of the Govt. Special Education Centre in A.P. Sial, Jhang. Data collection methods include on-site observation and semi-structured interviews conducted with two female teachers and the principal. The outcomes of the research unveil diverse reading challenges facing dyslexic learners, encompassing phonological dyslexia, visual dyslexia, dysphonic dyslexia, rapid naming deficit, and double deficit. The study underscores significant implications for the effective pedagogy of special children within educational institutions.

Key Words: Dyslexia, semi-structured, deficit, Phonological dyslexia, Visual dyslexia

Introduction

Dyslexia is characterized by language-related challenges, impeding the identification of individual sounds within words, and hindering the expression or comprehension of these sounds. Intelligence is unrelated to dyslexia, as those affected grapple with unique language processing difficulties, struggling to translate words into thoughts during reading or listening and vice versa in writing or speaking.

As a learning disability, dyslexia hampers the recognition of speech sounds and the understanding of their correlation with letters and words, posing challenges in reading (decoding). Despite its impact on the brain's language processing regions, dyslexic individuals typically exhibit normal intelligence and vision. While tutoring or specialized education programs can facilitate success for dyslexic children in

school, there exists no definitive cure, underscoring the importance of early diagnosis and intervention (Allor, J. H., 2002).

A dyslexic child grapples with difficulties in acquiring and memorizing new words, blending sounds to form words, catching up with peers, deciphering unfamiliar words, reluctance to read, avoidance of reading aloud, and challenges in comprehending written content. The ongoing research underscores the imperative of understanding how dyslexia influences language processing, particularly in the context of English language learning. The neural substrate responsible for processing orthographic and phonological facets of language primarily contributes to the word recognition challenges inherent in dyslexia (Alloway, T. P., & Alloway, R. G., 2010). Contemporary research challenges previous assumptions linking dyslexia to intellectual, visual, and auditory deficits, positing it as a

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language-processing anomaly stemming from cognitive irregularities, distinct from broader reading-related cognitive difficulties (Hurford DM, <u>1998</u>; Das, 2009).

Early identification and assessment, followed by

tailored educational programs, are crucial for the

academic success of dyslexic students (Association of International Dyslexia, 2009; Powers et al., 2013). Individualized support is deemed essential for dyslexics to navigate their learning challenges at their own pace 2013). Effective teaching approaches, encompassing word recognition, spelling, and reading fluency, are integral to intervention strategies for dyslexic individuals (Ahmed, 2018; Lucy, 2009). Such interventions, extending beyond language-based exercises, may include accommodations such as spoken tests and meditation to bolster self-esteem Uchida, Adrianne V, 2019). 2018; Acknowledging the social and emotional challenges faced by dyslexic students, educators must be equipped to address anxiety, social isolation, and low self-esteem (Long et al., 2007). Implementing inclusive practices, such as avoiding public reading aloud and providing extra time during exams, aids in fostering a supportive learning environment (Susan et al., 2007). In conclusion, despite advancements in understanding how children learn to read, particularly with dyslexia, the translation of research findings into effective instructional practices remains limited (Adams, 1990; NRP, 2000; Lindsay, G., 2007). The present study focuses on dyslexic learners of English at the Govt. Special Education Center, A.P. Sial, Jhang, contributes valuable insights for English instructors, parents, and dyslexic students. However, it is imperative to note the study's contextual limitations and the necessity for ongoing research to inform comprehensive strategies for addressing reading difficulties in dyslexic learners.

Objectives Of The Study

The objectives of the study are:

- To identify the Dyslexic students' learning difficulties in the selected sample of learners.
- b) To identify the teachers' perceptions and practices regarding dyslexic students.

Research Questions

- What difficulties do dyslexic students face while learning at the school level?
- 2) What are the teachers' perceptions about teaching dyslexic students?

Research Design

This research employs a qualitative approach, utilizing semi-structured interviews and direct observation methods. The chosen qualitative paradigm facilitates data collection directly from participants, recognizing the uniqueness of each individual's cognitive processes. The distinct perspectives and interpretations that individuals offer regarding similar or analogous circumstances are integral to this study. Notably, the varied experiences of individuals are of paramount importance, providing valuable insights into both their self-perceptions and their perceptions of the surrounding environment.

Population

This study focuses on the demographic cohort of students enrolled in grades I and 2 at the Govt. Special Education Center, A.P. Sial, Jhang. The participant pool comprises a total of 7 individuals, consisting of 4 students from grade 2 and 3 from grade I. Data, irrespective of gender, was acquired through observational methods from these students, all of whom have been identified as dyslexic based on school records or medical history. Additionally, semi-structured interviews were conducted with two female teachers and the principal associated with the aforementioned educational institution.

1.5 Procedure

To investigate the first research question, which pertains to the challenges faced by dyslexic students in the learning environment, data were systematically gathered through an observation checklist derived from Christo, Davis, & Brock (2009). This checklist was adapted to align with the specific objectives of the present study. Collaboratively determined schedules of observations were established with the cooperation of the school administration and English teachers. Over a span of seven days, the researcher conducted one-hour reading tasks, drawing materials from the English course books for grades one and two, with each task lasting 30 minutes. The observational data were meticulously recorded using tally marks on the

designated checklist, and subsequently transformed into frequencies and percentages.

To address the second research question, pertaining to the perceptions of teachers regarding the instruction of dyslexic students, semi-structured interviews were conducted with two female teachers and the principal of the Govt. Special Education Center, A.P. Sial, Jhang. An interview guide specifically tailored for this purpose guided the interviews, with the consent of the participating teachers secured, and recordings made for reference (refer to Appendix A).

A preliminary pilot study was executed to assess the appropriateness of the proposed questions and their quantity for effective data collection before transitioning to the main data collection phase. The pilot study findings indicated a need for additional questions and prompts, prompting adjustments to both the checklist and the interview guide. Furthermore, an evaluation of internal consistency using Cronbach's alpha was undertaken to ensure the reliability of items in the checklist. (See Table below)

Table I

Variables	No. of descriptors	Cronbach alpha
Phonological dyslexia	2	0.90
Surface dyslexia	2	0.88
Visual dyslexia	2	0.90
Dyseidetic	2	0.89
Dysphonic Dyseidetic	I	0.91
Phonological processing deficit	I	0.90
Rapid naming deficit	I	0.89
Double deficit	1	0.89
Checklist	12	0.90

Table shows that the alpha coefficient of factors 2,4,7, and 8 was good. The value of the alpha coefficient of factor 1,3,5,6 was excellent. The alpha coefficient of the whole checklist was 0.90, which was excellent and did not need improvement.

Data Collection

The acquisition of data was undertaken directly by the researcher, who collaborated with the school administration and English teachers to establish a jointly agreed-upon timetable for observations. In addition to observational methods, the researcher conducted semi-structured interviews with two educators from the institution to supplement the data collection process.

Data Analysis

The qualitative data obtained through interviews underwent synthesis and transformation into textual representations. These texts were subjected to coding, employing reductive methodologies for content analysis. The inductive content analysis, facilitated through open coding and meticulous examination of interview texts, involved the following sequential steps: firstly, the categorization of sentences and phrases sharing analogous codes; secondly, the derivation of overarching themes by interconnecting categories; and finally, the interpretation of these themes to address the research inquiries.

Analysis Of Quantitative Data

Table 2

Type of Dyslexia	Descriptors	Min.	Max	Mean	SD	Problem %
Phonological dyslexia	I. Can read known real words	4	5	4.86	0.38	48.6
	2. Cannot decode nonsense words.	10	10	10.00	0.00	100

Type of Dyslexia	Descriptors	Min.	Max	Mean	SD	Problem %
Surface dyslexia	Can decode nonsense words and read phonetically	1	2	1.86	0.38	18.6
	4. Cannot decode irregular words correctly	8	10	8.71	0.95	87.1
Visual dyslexia	5. Can read known real words	4	5	4.71	0.49	47.1
	6. Cannot decode nonsense	7	10	8.57	1.51	85.7
Dyseidetic	7. Can decode nonsense words and head phonetically	0	2	1.29	0.95	12.9
	8. Cannot read irregular words correctly	8	9	8.14	0.38	81.4
Dysphonetic Dyseidetic	9. Difficulties in both areas	8	10	8.86	1.07	88.6
Phonological processing deficit	 Do poorly on phonological processing tasks such as segmenting and blending. 	0	2	1.14	1.07	11.4
Rapid naming deficit	11. Do poorly on naming tasks requiring rapid retrieval of name codes for overlearned material	7	7	7.00	0.00	70
Double deficit	 Have deficits in both (most impaired readers) 	3	3	3.00	0.00	30

Table 2 delineates the prevalence percentages of distinct manifestations of dyslexia symptoms observed among students. The study encompassed participants from the Government Special Education Center, Ahmad Pur Sial Jhang, with seven individuals included in the analysis – four from grade 2 and three from grade 1, all diagnosed with dyslexia.

Phonological dyslexia, characterized by severe reading difficulties, is divided into two components. The initial facet, "can read known real words," accounts for 48.6%, while the latter facet, "cannot decode nonsense words," attains a full 100%. Thus, the findings suggest an incapacity among students to decode nonsensical words. Surface dyslexia, entailing challenges in reading words with unconventional printto-sound correspondences, comprises components: the third part, capable of decoding nonsensical words and reading phonetically, registers at 18.6%, whereas the fourth part, unable to accurately decode irregular words, stands at 87.1%. Evidently, a majority of students exhibit difficulty in decoding irregular words accurately.

Visual dyslexia, manifesting as impediments in word recognition at a glance, results in a problem percentage of 47.1% for reading known real words and 85.7% inability to decode nonsense. Consequently, students encounter challenges in decoding nonsensical words. The dyslexic component capable of decoding nonsense words is 12.9%, while the component unable to read irregular words correctly is notably higher at 81.4%. These outcomes indicate a struggle in recognizing whole words among students. The percentage problem for Dysphonetic Dyseidetic, experiencing difficulties in both areas, is 88.6%, signifying challenges in connecting sounds to symbols.

Moreover, the percentage of phonological processing deficit, encompassing challenges in recognizing all levels of linguistic structure (Part 10), is 11.4%, and the percentage of rapid naming deficit (Part 11), involving difficulties in swiftly naming items such as numbers, letters, and colours, is 70%. Finally, the occurrence of a double deficit (Part 12), characterized by deficits in both the most impaired accounts, is noted at 30%.

Figure I
Graphical Presentation of Different Types of Dyslexia

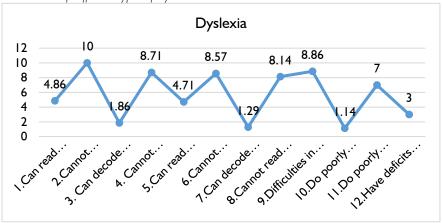
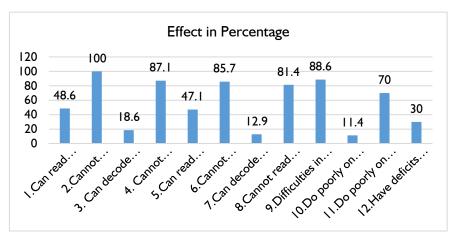


Figure 2



Analysis Of Interviews

During this investigation, a semi-structured interview format was meticulously crafted. Interviews of a qualitative nature were undertaken with a male principal and two female educators affiliated with the Govt. Special Education Center, Ahmad Pur Sial Jhang. The primary objective of these interviews was to elicit qualitative insights addressing the second research question, namely, the teachers' perspectives on instructing dyslexic students. To facilitate this, a comprehensive interview guide was developed. Prior consent was obtained from the participating teachers, and the interviews were meticulously recorded using both a laptop and a separate audio recording device,

specifically a Dictaphone. Subsequently, each participant's audio recordings were transcribed. The inaugural interview involved the principal of the Govt. Special Education Center, Ahmad Pur Sial Jhang, and the resultant findings were organized and presented in accordance with emergent themes identified throughout the data acquisition process.

Reading Difficulty

Dyslexic individuals exhibit challenges in comprehending textual content akin to their non-dyslexic peers. The spectrum of students grappling with reading difficulties is extensive, encompassing those formally diagnosed with reading-related

disabilities and a broader cohort requiring specialized reading assistance without a formal diagnosis. Vigilance on the part of parents and educators is paramount in monitoring the academic progress of students, irrespective of diagnostic categorization, and prompt action should be taken upon suspicion of challenges. It is imperative to recognize that a formal diagnosis does not singularly constitute the sole indicator of significant reading-related impediments. Certain pupils are more predisposed to encountering reading difficulties, necessitating heightened awareness of discernible characteristics to facilitate early identification and intervention.

The likelihood of encountering reading challenges is heightened among students whose confronted reading difficulties, were diagnosed with auditory or specific language disabilities, or failed to acquire essential literacy skills during their formative years (Snow, Burns, & Griffin, 1998). A principal elucidated that dyslexic individuals, while characterized as deficient readers and gradual learners, possess normal intelligence. Nonetheless, their neural activation exhibits a distinctive pattern compared to individuals without reading difficulties, notably with a discernible dysfunction in the rear brain systems of the left hemisphere during reading processes.

Specific Teaching Skills

Educators necessitate a profound comprehension of both theoretical foundations and practical applications in the realm of reading. Adept teachers, possessing specialized skills, play a pivotal role in discerning the nature and origin of students' challenges, elevating their competencies, and capitalizing on individual strengths. Effectual resolution of reading difficulties requires a specific set of skills among educators. The acquisition of reading proficiency mandates a robust educational framework, a task acknowledged for its intricacy, with language and reading experts likening it to the complexity of teaching rocket science (Moats, 1998). Given the multifaceted nature of reading, educators may encounter challenges in identifying issues among students and selecting appropriate methodologies for intervention.

In response to the query, a principal emphasized the imperative skills for educators, including proficiency in phonetic techniques, comprehension of the rationale and application of decoding nonsensical words,

familiarity with classroom accommodations for dyslexia, adeptness in strategies for enhancing vocabulary and reading fluency, and proficiency in addressing challenges such as letter reversals, specifically b/d.

Trained Teachers

The majority of educators overseeing inclusive classrooms reportedly possess formal training in inclusive education, rendering them well-versed in addressing the educational needs of dyslexic learners. These teachers have undergone specialized training to cater to the diverse skill sets exhibited by children within the inclusive educational framework. Additionally, in-service training sessions on inclusive education have been conducted, equipping teachers with updated knowledge and skills. The provision of official instructional materials aligns with teachers' specific requirements, ensuring their currency in educational practices. In response to inquiries, the principal affirmed the recruitment of teachers with preexisting training while also emphasizing ongoing training initiatives tailored to evolving educational needs.

Special Textbooks By Government

Government-initiated efforts include the development of specialized textbooks tailored for dyslexic students, facilitating a simplified and accessible approach to lesson comprehension for both teachers and learners. Administrative expectations mandate the timely completion of the curriculum by teachers as an indicator of effective instructional delivery. However, this endeavour poses challenges for educators, particularly in catering to the unique needs of special children. Regrettably, this circumstance results in the inadvertent neglect of dyslexic learners, who inherently demand more individualized attention than can be feasibly provided within the conventional classroom setting. Consequently, teachers find themselves compelled to extend instructional hours beyond the regular school schedule. Responding to inquiries, it was indicated that the government dispatches designated books designed for the benefit of special children in these circumstances.

Specific Teaching Methods

Educators employ uncomplicated strategies to assist

dyslexic students grappling with reading challenges. Specific instructional methods include the use of visual aids such as graphic timetables and the practice of reading materials aloud. Additional supportive measures encompass distributing colourful strips or bookmarks to enhance concentration during reading and affording students multiple opportunities to engage with the same material. The provided responses underscore the implementation of straightforward and comprehensible teaching and assessment techniques tailored to the unique needs of special children.

A subsequent interview was conducted with a female teacher labelled as "A" by the Govt. Special Education Center, Ahmad Pur Sial Jhang, directed towards addressing the second research question pertaining to the teachers' perspectives on instructing dyslexic students. The outcomes of this investigation were systematically organized into themes based on the elicited responses.

Pronunciation Difficulty

Dyslexic children encounter challenges in organizing words and letters cohesively into sentences, thereby impacting their proficiency not only in inaccurate reading and spelling but also in pronunciation, articulation, teaching, and word memorization. This struggle necessitates the ability to recognize letters sequentially, particularly when committing words to memory for assessments. Despite the potential provision of oral assessments, where the student is tasked with recalling terms represented by a series of letters or phrases in lieu of written assessments, the requirement to remember the term in its corresponding arrangement persists. For instance, a dyslexic student may initially pronounce the word "name" as "amen," demonstrating a tendency to articulate words in a letter-by-letter fashion. As underscored by a teacher, dyslexic children commonly exhibit this practice of pronouncing words on a letterby-letter basis.

Omit Words

It is a common occurrence for both adults and children to omit words while reading aloud. Notably, inconspicuous words such as "the," "in," "on," "a," and "of" are frequently omitted, given their brevity and high frequency. While these words are functionally integral,

their omission may not hinder overall comprehension, making it a challenge for young children to grasp their significance. Shorter words exhibit a higher propensity for omission compared to longer counterparts, and the likelihood of omitting predictable words surpasses that of unpredictable ones. In response to this observation, it was noted that students predominantly omit words, particularly avoiding challenging ones during oral reading.

Informal Language

A prevailing inclination among learners, notably prominent in dyslexic students, is a preference for informal language over formal vocabulary, aligning more closely with expressions employed in their daily interactions. Dyslexic children, experiencing challenges in understanding and reading English words, commonly tend to skip such words. An articulated sentiment in this context asserts that, for dyslexic children, informal language proves more conducive than formal language.

In addressing the second research question, a subsequent interview transpired with a female teacher identified as "B" from the Govt. Special Education Center, Ahmad Pur Sial Jhang. This interview sought to glean further insights into the teachers' perceptions of dyslexic students through a distinct set of inquiries. The resultant study findings were methodically categorized into thematic topics based on the provided responses.

Assess Vocabulary

In the initial stages of development, children commence the expansion of their linguistic abilities. Exposure to spoken language prompts infants to discern and recognize words. As children progress in age, they acquire communication proficiency through interactions within their familial environment. Furthermore, parental engagement includes the practice of reading aloud to preschoolers and toddlers. By the onset of formal education, children typically amass a vocabulary ranging from six to ten thousand words. The acquisition of this lexicon predominantly transpires through various spoken expressions before the commencement of formal literacy instruction at home and school. In response to this context, Teacher B asserted that providing classroom activities and assignments for home tasks

contributes significantly to the enhancement of students' vocabulary.

Difficulty In Reading Written Words

Dyslexia induces alterations in the cognitive processing of written information, presenting challenges in comprehension, spelling, and word decoding. The manifestation of dyslexia varies among individuals, commonly impeding rapid and accurate reading and potentially causing difficulties in understanding textual content. This impediment may manifest as early as preschool, wherein a child may struggle with sound recognition in words and face challenges associating letters with their corresponding sounds. Observable indicators may include a reluctance to engage in reading activities, a phenomenon evident to teachers and caregivers. In response to this context, Teacher B remarked that students affected by dyslexia exhibit a proclivity for slower learning despite possessing normal intelligence, grappling not only with the pronunciation of words but even basic letter recognition.

Overcome Reading Problems

While dyslexia remains incurable, various strategies can significantly alleviate the daily challenges associated with the condition. Given the individualized nature of dyslexic experiences, success in overcoming learning disabilities is achievable for most individuals. The amelioration of dyslexic difficulties is notably facilitated through increased reading activities. Implementing reading assignments at home, engaging in communal reading-aloud sessions in the classroom, and fostering encouragement are effective measures. Conducting a comprehensive assessment of each student's specific needs empowers educators to formulate a customized curriculum tailored to address dyslexic challenges. Employing teaching resources and learning aids that engage multiple senses, including touch, vision, and hearing, proves beneficial for dyslexic students. Psychological counselling can play a pivotal role in offering support and guidance, potentially mitigating any adverse impacts on self-esteem. The provision of additional time during tests represents one form of assistance, exemplifying the varied support mechanisms available. For adults grappling with dyslexia, ongoing evaluation support aids in the development of adaptable coping mechanisms and the identification of areas where additional assistance may be beneficial. In alignment with these principles, Teacher B emphasized the efficacy of reading more, reading aloud, encouraging, and fostering healthy competition as optimal approaches for overcoming dyslexic challenges and achieving improvement.

Discussion

Dyslexia, a term in existence for over a century, has undergone conceptual transformations, transitioning from a homological condition to a cognitive problem and neurological deficit, thereby lacking clear conceptual boundaries (Gelfand & Bookhemeir, 2003; Orton, 1925). The specificity of dyslexia has been a subject of contention, leading to its evolution as an umbrella term encompassing various Specific Learning Difficulties, impacting not only reading, writing, spelling, and mathematics skills but also related cognitive aspects (Ott, 1997).

The lack of a universally accepted diagnostic entity has resulted in challenges, manifesting in varied prevalence rates due to discrepancies in identification criteria and assessment methodologies (Sugito & Miyoko, 1999; Hynd et al., 1991). Developing nations face unique challenges, including the absence of national standards, universal education, and compulsory schooling, hindering equal opportunities for foundational skill development in preschools and nurseries (UNESCO, 2005).

Cultural factors have been identified as influential in abilities associated with Specific Learning Difficulties (Uchida, 2019). Western and third-world educational approaches diverge, impacting the readiness of children entering school. Cultural influences complicate the diagnosis of Specific Learning Difficulties, particularly in developing nations (Zhu & Kageura, 2019).

Identifying dyslexia poses challenges due to diverse learning styles among children, necessitating a nuanced approach that acknowledges varied strengths and weaknesses. Prerequisite skills, including reading and writing proficiency, attention, concentration, sequencing, and other cognitive abilities, must be considered in psychometric assessments. The current educational approach often emphasizes rote learning, limiting creative thinking and the practical application of knowledge in different contexts (UNESCO, 2005).

Conclusion

The study identified various challenges, including Phonological dyslexia, Surface dyslexia, Visual dyslexia, Dyseidetic, Dysphonic Dyseidetic, Rapid naming deficit, and Double deficit, among others. The collected data revealed that 48% of students encountered difficulties associated with phonological dyslexia, 18.6% faced surface dyslexia, and 12.9% were affected by dyskinetic dyslexia. Additionally, 11.4% and 30% of students experienced phonological processing deficits and double deficits, respectively. The interviewees provided valuable insights into treating different dyslexic issues, offering significant implications for both educators and parents. The study proposes several recommendations:

- I. Designing exams capable of identifying dyslexia, potentially circumventing proficiency-based assessments.
- 2. Conducting a comparable study for the rural population, given that this investigation focused solely on urban youth.
- 3. Expanding the scope of research to include students from both private and public schools, as this study exclusively involved government-run school students.
- 4. Future studies should prioritize developing intervention strategies for school-aged children based on their individual strengths and limitations, ensuring timely implementation to prevent exacerbation of the issues.
- 5. Advocating for family therapy to educate parents about dyslexic children and the imperative of prompt problem resolution.

References

- Allor, J. H. (2002). The relationships of phonemic awareness and rapid naming to reading development. Learning Disability Quarterly, 25, 47-57. https://doi.org/10.2307/1511190
- Alloway, T. P., & Alloway, R. G. (2010). Investigating the predictive roles of working memory and IQ in academic attainment. *Journal of Experimental Child Psychology*, 106(1), 20–29. https://doi.org/10.1016/j.jecp.2009.11.003
- Hurford, D. M. (1998). To Read or Not to Read: Answers to All Your Questions About Dyslexia. New York: A Lisa Drew Book / Scribner.
- Hynd, G. W., Marshall, R., & Gonzalez, J. (1991). Learning disabilities and presumed central nervous system dysfunction. *Learning Disability Quarterly*, 14(4), 283–296. https://doi.org/10.2307/1510664
- Uchida, A. V. (2019). Flipping a Global Topics Classroom. In D. Roy & J. Blake (Eds.), Pan SIG Journal 2018 (pp. 283–289). JALT, Tokyo.
- Zhu, X., & Kageura, K. (2019). Research on Japanese Typefaces and Typeface Customisation System Designed for Readers with Developmental Dyslexia. International Association of Societies of Design Research. Retrieved from https://iasdr2019.org/research-papers?keywords=Zhu+Kageura&category
- Sugito, M. (1999) "Kotoba no Supiidokan Towa Nanika?" [On Lexical Speed.] Gengo 28(9), 30– 34. Todo, E. (n.d.) "Dyslexia Japan" Edge,

- Retrieved from https://www.npoedge.jp/about/englishpage/
- Lindsay, G. (2007). Educational psychology and the effectiveness of inclusive education/mainstreaming. *British Journal of Educational Psychology*, 77(1), 1–24. https://doi.org/10.1348/000709906×156881
- Leis, A. (2018). Content-Based Language Teaching and the Flipped Classroom: A Case Study in the Japanese EFL Environment. In J. Mehring & A. Leis (Eds.), *Innovations in Flipping the Language Classroom* (pp. 221–230). Springer, Singapore. http://dx.doi.org/10.1007/978-981-10-6968-0 15
- Ahmad, S., Ali, M. M., & Salehuddin, K. (2018). ESL Teachers' Experience in Teaching Pupils with Dyslexia in Mainstream Classrooms. Creative Education, 09(14), 2171–2182. https://doi.org/10.4236/ce.2018.914158
- Keenan, L., O'Sullivan, A., & Downes, M. (2020). Teachers' experiences and understanding of executive functions in Irish primary school classrooms: Findings from a mixed-methods questionnaire. Irish Educational Studies, 0(0), 1–14.
 - https://doi.org/10.1080/03323315.2020.17949 27
- Marinus, E., Mostard, M., Segers, A., Schubert, T. M., Madelaine, A., & Wheldall, K. (2016). A Special Font for People with Dyslexia: Does it Work and, if so, Why? *Dyslexia*, 22(3), 233–244. https://doi.org/10.1002/dys.1527

Appendix A

Checklist for reading task observation

Types of observation	Indicators	Yes (Tally	No (Tally
		Marks)	Marks)
Phonological dyslexia	I. Can read known real words		
	Cannot decode nonsense words.		
Surface dyslexia	3. Can decode nonsense words and read phonetically		
	4. Cannot decode irregular words correctly		
Visual dyslexia	5. Can read known real words		
	6. Cannot decode nonsense		
Dyseidetic	7. Can decode nonsense words and read phonetically		
	8. Cannot read irregular words correctly		
Dysphonic Dyseidetic	9. Difficulties in both areas		
Phonological [*]	10. Do poorly on phonological processing tasks such as		
processing deficit	segmenting and blending.		
Rapid naming deficit	II. Do poorly on naming tasks requiring rapid retrieval		
	of name codes for overlearned material		
Double deficit	12. Have deficits in both (most impaired readers		

Appendix B

Interview I

Principal

- I) First of all, I am very thankful for your time and cooperation
- 2) Do you think the teaching of reading is the same for normal and dyslexic students?
- 3) How, does it explain?
- 4) Does it mean you need teachers of reading with specific teaching skills?
- 5) What particular skills do the teachers of reading possess?
- 6) Do you recruit already trained teachers or have you trained them in your school?
- 7) Do you think your teachers of reading need continuous professional development?
- 8) Does your school teach dyslexic students with special textbooks?
- 9) What specific testing techniques do your teachers use?

Interview 2

Teacher (A)

- 1) Do they pronounce it or letter by letter?
- 2) How often does it happen?
- 3) Do they appear to avoid reading?
- 4) Do they omit or add words when reading?
- 5) Is their rate of vocabulary learning equal to
- 6) Do you think their problems are the same in learning formal and informal?
- 7) Which of these do they learn quickly?

Interview 3

Teacher (B)

- 1) How do you assess their vocabulary?
- 2) In what ways does dyslexia cause problems in understanding written text?
- 3) Can they overcome their problem of understanding written English by reading more?
- 4) Would you like to suggest some ways to improve reading comprehension?