

Unleashing Bilingual Potential: An Action Research Intervention for Dyslexic Learners

Rosny Maidin and Nur Atiqahdai Lembertus

Abstract –This study is an action research intervention conducted over a period of six months in Sabah, Malaysia, involving three dyslexic students in a primary education context. The purpose of the study was to evaluate the effectiveness of a structured intervention program in enhancing students' communication and speech abilities using the Malay language. A collaborative three-pronged approach was employed throughout the study, involving the researcher, three teachers, and three guardians. The intervention was implemented periodically and consisted of repeated pronunciation exercises, sentence construction, guided reading, and storytelling activities, in which students were actively encouraged to speak in every session. The findings revealed that students showed significant improvements in articulation and speech fluency, especially when pronouncing words individually, although dyslexic speech traits remained evident. Interestingly, the students did not exhibit the same difficulties when communicating in English, their second language, indicating that the learning challenges were language-specific rather than generalised across linguistic systems. Therefore, the study underscores the importance of continuous support from teachers and families to nurture the strengths of dyslexic learners in their second language without limitations. The implications suggest that a responsive and individualised teaching approach is vital in supporting the communicative development of children with special educational needs within inclusive education settings.

Keywords – Action research, intervention, dyslexia, communication, inclusive education

I. INTRODUCTION

Dyslexia is widely recognised as a specific learning disorder marked by difficulties in accurate and fluent word recognition, spelling, and decoding (Shaywitz, 2003). These difficulties are associated with deficits in the phonological component of language rather than cognitive ability. Globally, dyslexia affect approximately 5–10% of the population and requires early intervention to prevent long-term academic and social challenges (Snowling, 2013).

In multilingual settings like Malaysia, dyslexic learners face compounded difficulties due to the different phonological and orthographic systems of the languages they must acquire (Abu Bakar et al., 2020). The Malaysian education system uses Malay as the primary language of instruction while English serves as a second language, creating a complex linguistic environment for children with learning difficulties (Ministry of Education Malaysia, 2013).

Rosny Maidin, National University of Malaysia (Email address: rosnymaidin@gmail.com).
Nur Atiqahdai Lembertus, Communication Learning Centre, SIKK (Email address: atiqahdai91@gmail.com).

Research has shown that bilingual dyslexic learners may exhibit different degrees of difficulty depending on the linguistic structure of each language (Sparks et al., 2012). However, despite growing awareness, intervention studies targeting language-specific dyslexia manifestations, especially in bilingual primary school contexts, remain limited. This indicates a pressing need for responsive and individualised approaches within inclusive education frameworks (Nor & Rashid, 2018). Considering this, the current study aims to evaluate the effectiveness of a structured six-month intervention program in enhancing communication and speech development among primary school students with dyslexia in the Malay language. It also seeks to explore how bilingualism influences the expression of dyslexic traits and communicative outcomes. Therefore, this study is guided by two research questions: i) To what extent does the structured intervention program improve articulation and speech fluency of dyslexic learners in the Malay language? ii) How do dyslexic learners' communication challenges differ between their first (Malay) and second (English) languages? Moreover, this study addresses a critical gap in the literature on bilingual dyslexia and inclusive education. By focusing on language-specific intervention, it contributes to best practices for supporting dyslexic learners in multilingual environments. Furthermore, it highlights the potential strengths of bilingual dyslexic learners, shifting the focus from deficits to capabilities (Artiles et al., 2011). Through the application of collaborative action research framework involving researchers, teachers, and guardians, this study underscores the value of collective efforts in nurturing the communicative development of children with special educational needs (Stringer, 2014).

II. PROBLEM STATEMENT

Despite the growing recognition of dyslexia as a significant learning disorder, intervention programs in Malaysia often adopt a generalised, reading-centered approach that fails to address the diverse linguistic and communication needs of learners (Tan & Abdul Razak, 2016; Nor & Rashid, 2018). This "one-size-fits-all" methodology neglects the unique manifestation of dyslexic challenges in multilingual contexts, where students must navigate between languages with different orthographic and phonological systems.

In Sabah, a region rich in ethnic and linguistic diversity, primary school students with dyslexia encounter communication barriers not only due to cognitive factors but also as a result of sociolinguistic dynamics (Abu Bakar et al., 2020). While existing policies encourage inclusive education, practical strategies to support bilingual dyslexic learners especially in enhancing speech fluency and verbal communication in Malay remain insufficiently developed

and are rarely implemented at the classroom level (Ministry of Education Malaysia, 2013).

Moreover, the assumption that dyslexic difficulties are uniform across languages overlooks research findings suggesting that language structure significantly influences the severity and nature of dyslexic manifestations (Ziegler & Goswami, 2005). Without targeted, language-sensitive interventions, these students risk falling further behind academically and socially, thereby perpetuating inequalities within the educational system.

Therefore, there is a critical need for a responsive, action-based intervention program that not only focuses on reading skills but also explicitly addresses the verbal communication needs of dyslexic learners in their dominant language. Such an approach should involve meaningful collaboration between teachers, families, and researchers to ensure that support strategies are culturally and linguistically appropriate, thus promoting more inclusive and equitable learning environments (Artiles et al., 2011; Stringer, 2014).

III. LITERATURE REVIEW

Dyslexia and Communication Challenges

Dyslexia are primarily characterised by difficulties with accurate and fluent word recognition and by poor spelling and decoding abilities (Shaywitz, 2003; Snowling, 2013). These challenges stem from phonological deficits rather than low cognitive functioning. While dyslexia are often discussed in the context of reading, communication impairments, especially verbal fluency and articulation difficulties, are common (Vellutino et al., 2004). Learners with dyslexia may demonstrate speech hesitations, omissions, and phoneme reversals, complicating their oral language development.

Snowling and Hulme (2012) emphasise that phonological intervention strategies focusing on oral language exercises such as pronunciation drills and guided reading can significantly enhance speech fluency in children with dyslexia. However, most studies focus on reading remediation, with relatively fewer targeting speech and communication skills, creating a gap that this study addresses.

Dyslexia in Bilingual and Multilingual Contexts

In bilingual and multilingual contexts, dyslexic difficulties do not manifest uniformly across languages. Research by Sparks et al. (2012) found that bilingual dyslexic learners might perform better in one language compared to another, depending on the phonological transparency and orthographic depth of the languages involved. For example, Ziegler and Goswami (2005) proposed the “psycholinguistic grain size theory,” suggesting that languages with simpler phonological structures might be easier for dyslexic learners to decode.

In Malaysia, the complexity of managing both Malay (with its multisyllabic structures) and English (with irregular spelling-sound correspondence) adds another layer of challenge (Abu Bakar et al., 2020). There is a need for intervention programs that recognise these linguistic

differences and provide tailored support according to each language's demands.

Intervention Strategies for Dyslexic Learners

Effective interventions for dyslexic learners often involve multisensory approaches, structured repetition, and scaffolded oral language activities (Snowling & Hulme, 2012; Vellutino et al., 2004). Pronunciation-focused exercises, story retelling, and guided reading have been shown to strengthen phonemic awareness and enhance verbal articulation (Stringer, 2014). Furthermore, repeated practice in a low-stress, supportive environment is essential to building learners' confidence and reducing speech anxiety (Nor & Rashid, 2018). Emphasis on collaborative interventions that involve teachers, families, and students themselves also improves success rates (Artiles et al., 2011).

Action Research as a Framework for Educational Intervention

Action research is a participatory methodology where educators systematically investigate their practices with the aim of improving them (Sagor, 2005). Stringer (2014) emphasises that action research is particularly powerful in special education contexts because it empowers teachers to develop, implement, and adjust interventions based on ongoing observations and reflections. By involving multiple stakeholders including teachers and parents, action research ensures that interventions are responsive to learners' needs, culturally appropriate, and sustainable beyond the research period.

IV. METHOD

Research Design

This study employed a qualitative action research design, which is well-suited for educational settings where the aim is to implement practical interventions and evaluate their effectiveness in real classroom contexts (Stringer, 2014). Action research provides a collaborative framework that involves multiple stakeholder's researchers, teachers, and families in diagnosing problems, planning actions, implementing solutions, and reflecting on outcomes (Sagor, 2005). The intervention was conducted over six months in a public primary school in Sabah, Malaysia, involving three dyslexic students. The study focused on enhancing their communication and speech abilities in the Malay language through structured pedagogical activities.

Participants and Sampling

Purposeful sampling was employed to select three students diagnosed with dyslexia based on school screening and teacher referral, in line with common practices in special education action research (Creswell & Poth, 2018). Three teachers and three guardians were also involved in the intervention process, ensuring triangulation of perspectives and promoting consistency in support across school and home environments. All participants were informed of the study's aims and procedures, and written

consent was obtained from the school, teachers, and parents prior to data collection.

Intervention Procedure

The intervention was developed based on best practices in dyslexia pedagogy, combining repetition, phonological awareness, and guided oral activities (Snowling & Hulme, 2012). Weekly sessions were conducted for each student and included the following components:

- a. Pronunciation Drills – Focusing on challenging syllables and phonemes in the Malay language.
- b. Sentence Construction – Using structured prompts to encourage verbal output.
- c. Guided Reading – Emphasising fluency and word articulation in familiar texts.
- d. Storytelling Activities – Students retold stories with teacher scaffolding to develop expressive language skills.

The intervention was iterative, and modifications were made based on weekly reflections and progress observations, following the cyclical nature of action research (Kemmis & McTaggart, 2000).

Data Collection and Analysis

Data were collected through:

- a. Audio recordings of intervention sessions
- b. Field notes by the researcher and teachers
- c. Reflective journals from participating teachers
- d. Post-intervention interviews with parents

A thematic analysis was conducted, identifying recurring themes such as articulation improvement, code-switching patterns, and differences in fluency between Malay and English (Braun & Clarke, 2006). Triangulation of sources enhanced the credibility and trustworthiness of the findings (Lincoln & Guba, 1985).

V. FINDINGS

The outcomes of the six-month intervention revealed several significant developments in the communication skills of the participating dyslexic learners. The data indicate consistent patterns of improvement, particularly in verbal articulation and speech fluency in the Malay language. The following themes emerged from the analysis of participants' progress and responses throughout the intervention.

Improvement in Articulation and Speech Fluency

All three students demonstrated notable improvements in articulation, particularly in word-level pronunciation in the Malay language. Pronunciation exercises and repeated guided reading significantly contributed to better syllable decoding and clarity, especially for common consonant-vowel structures. Teachers observed that the learners developed greater confidence in verbal tasks, often volunteering to speak during classroom activities. Speech fluency in Malay improved gradually, and utterances became more coherent by the fourth month of intervention. This aligns with prior studies suggesting that consistent oral language activities can enhance phonological

processing among dyslexic learners (Snowling & Hulme, 2012; Vellutino et al., 2004).

Persistent Language-Specific Dyslexic Traits

Despite progress, dyslexic speech characteristics—such as omissions, phoneme reversals, and hesitations—remained evident in the Malay language, particularly when students were under pressure to speak quickly or in full sentences.

Interestingly, during informal activities and English interactions, these same students exhibited fewer dysfluencies. Their speech in English was often more fluent and natural, supporting the theory that bilingual dyslexic learners may experience language-specific impairments depending on the structure and transparency of the language involved (Sparks et al., 2012; Abu Bakar et al., 2020). Malay's morpho-syllabic nature may present decoding challenges for dyslexic learners compared to alphabetic languages like English.

Role of Supportive Environment

The involvement of teachers and guardians was instrumental in sustaining learner motivation and encouraging speech attempts during and beyond the intervention sessions. Journals from both teachers and parents revealed that learners were more willing to engage in speaking tasks at home and began initiating conversations using structured sentences. This finding echoes Artiles et al. (2011), who emphasised the importance of collaborative, strength-based interventions in inclusive education for bilingual learners with special educational needs.

VI. DISCUSSION

This study aimed to explore the impact of a structured intervention on dyslexic learners' communication skills in Malay, and to examine how bilingualism interacts with dyslexic traits in a Malaysian context. The findings highlight important insights regarding language-specific challenges, learner strengths, and the role of environment in speech development.

Language-Specific Manifestation of Dyslexia

The observation that students demonstrated greater speech fluency in English than in Malay reinforces the language-specific hypothesis of dyslexia, where deficits may manifest differently depending on the orthographic complexity and phonological transparency of the language (Ziegler & Goswami, 2005). Malay, though generally more transparent than English, contains multisyllabic word structures that may overload the working memory of dyslexic learners (Abu Bakar et al., 2020).

This supports prior findings by Sparks et al. (2012), who documented that dyslexic learners often perform better in second languages, particularly when that language is introduced in a communicative and immersive manner. In this study, learners' exposure to English through informal media and classroom interactions may have fostered greater familiarity and confidence.

Effectiveness of Repetitive and Oral-Based Interventions

The improvements in articulation and sentence fluency among participants suggest that structured, oral-based interventions can be highly effective for dyslexic learners, especially when adapted to the learners' primary language. Activities such as pronunciation drills, guided storytelling, and repeated reading have previously been shown to support phonemic awareness and speech accuracy (Snowling & Hulme, 2012; Vellutino et al., 2004).

Importantly, the intervention adopted a scaffolded and progressive approach, allowing learners to build confidence at each stage. This aligns with Vygotsky's sociocultural theory, where learning occurs through social interaction and support within the learner's zone of proximal development (Vygotsky, 1978).

The Role of Collaboration in Inclusive Support

The integration of teachers, guardians, and researchers in the intervention process was a key factor in sustaining motivation and ensuring consistency. The collaborative nature of the action research model not only empowered educators but also provided families with tools to support communication practice at home. This finding echoes Artiles et al. (2011), who emphasised the need for inclusive frameworks that leverage the strengths of learners through shared responsibility. Moreover, family involvement helped create a safe emotional environment, which has been shown to enhance engagement and reduce speech anxiety in dyslexic children (Nor & Rashid, 2018).

Implications for Inclusive Education

These findings underscore the need for customised interventions in bilingual educational settings, especially in linguistically diverse regions like Sabah. A one-size-fits-all approach to dyslexia is insufficient when learners face different levels of challenge across languages. Schools should be encouraged to develop bilingual support strategies that leverage learners' strengths in one language to scaffold learning in another. Furthermore, the success of this study suggests that action research can serve as a professional development model, enabling teachers to experiment, reflect, and refine their instructional methods based on direct learner feedback (Stringer, 2014; Sagor, 2005).

VII. LIMITATIONS AND FUTURE RESEARCH

This study was limited by its small sample size and specific geographic focus, involving only three dyslexic learners in one primary school in Sabah. As such, the findings may not be generalisable to all bilingual or multilingual learners with dyslexia across Malaysia. Additionally, the intervention period was relatively short, which may have limited the observation of long-term communicative development. Future research should consider involving a larger and more diverse group of participants across different regions and ethnic backgrounds. Longitudinal studies could also be conducted

to examine the sustained effects of language-specific interventions on bilingual dyslexic learners over time.

VIII. CONCLUSION

This study demonstrates the effectiveness of a structured, collaborative intervention program in improving the communication and speech abilities of dyslexic learners within a bilingual primary school context in Sabah, Malaysia. Through six months of repetitive oral-based activities such as pronunciation drills, guided reading, sentence construction, and storytelling the learners showed measurable improvement in articulation and verbal fluency in Malay, despite the persistence of certain dyslexic traits.

A particularly notable finding was that these learners displayed fewer challenges in their second language (English), suggesting that dyslexic difficulties can be language-specific rather than universal. This insight reinforces the importance of tailoring interventions to the unique linguistic profile of each learner. Furthermore, the action research model proved highly effective in fostering a collaborative environment involving teachers, parents, and the researcher. This synergy not only supported academic goals but also promoted emotional resilience and learner motivation.

As Malaysia continues to advance its inclusive education agenda, this study highlights the need for responsive, individualised, and language-sensitive interventions. Future research may consider extending this model to other regions and language combinations to better understand how bilingualism interacts with dyslexia in diverse sociolinguistic contexts.

ACKNOWLEDGEMENT

The authors would like to thank the MOE, the participating school, teachers, parents, and students for their participation, support, and cooperation. Appreciation is also extended to the expert reviewers in dyslexia pathology, language and literacy, and qualitative action research whose insights and comments greatly contributed to the refinement of this study.

REFERENCES

Abu Bakar, K., Yasin, M. H. M., & Mohamad, M. (2020). Dyslexia in the Malay language: Challenges and interventions. *Journal of Special Needs Education*.

Artiles, A. J., Rueda, R., Salazar, J., & Higareda, I. (2011). Within-group diversity in minority disproportionate representation: English language learners in urban school districts. *Exceptional Children*, 77(3), 323–346.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (4th ed.). SAGE Publications.

Fauzi, Z., & Mahmud, R. (2019). Research trends on the use of technology in early childhood education. *ERIC*.

Kemmis, S., & McTaggart, R. (2000). *Participatory action*

research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 567–605). SAGE.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. SAGE Publications.

Ministry of Education Malaysia. (2013). *Malaysia Education Blueprint 2013–2025*. Putrajaya: Kementerian Pendidikan Malaysia.

Nor, M. Z. M., & Rashid, R. A. (2018). Inclusive Education Policy for Dyslexic Students in Malaysia. *Malaysian Journal of Learning and Instruction*, 15(2), 25–45.

Sagor, R. (2005). *The Action Research Guidebook: A Four-Stage Process for Educators and School Teams*. Corwin Press.

Shaywitz, S. (2003). *Overcoming Dyslexia*. Vintage Books.

Snowling, M. J. (2013). *Dyslexia: A Very Short Introduction*. Oxford University Press.

Snowling, M. J., & Hulme, C. (2012). Interventions for children's language and literacy difficulties. *International Journal of Language & Communication Disorders*, 47(1), 27–34.

Sparks, R. L., Patton, J., Ganschow, L., & Humbach, N. (2012). Relationships among cognitive and language skills and high school students' Spanish achievement and proficiency. *Modern Language Journal*, 96(2), 178–199.

Stringer, E. T. (2014). *Action Research (4th ed.)*. SAGE Publications.

Tan, A. K., & Abdul Razak, N. (2016). Dyslexia in Malaysian schools: A critical perspective. *International Education Studies*, 9(8), 32–39.

Vellutino, F. R., Fletcher, J. M., Snowling, M. J., & Scanlon, D. M. (2004). Specific reading disability (dyslexia): What have we learned in the past four decades? *Journal of Child Psychology and Psychiatry*, 45(1), 2–40.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.

Ziegler, J. C., & Goswami, U. (2005). Reading acquisition, developmental dyslexia, and skilled reading across languages: A psycholinguistic grain size theory. *Psychological Bulletin*, 131(1), 3–29.