

From Sounds to Words: A Case Study on the Effectiveness of a Phonics-Based Intervention for Early Literacy Development in a Child with Autism Spectrum Disorder

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ABSTRACT:

This study aims to explore the effectiveness of a Special English Phonics Module (SEPM) in supporting early literacy development, specifically reading skills, for children with autism. The participant was a five-year-old child diagnosed with Autism Spectrum Disorder (ASD) who had no prior exposure to formal English reading instruction. The implementation of the SEPM represented the child's first structured exposure to English as a second language. This case study was conducted over a two-week period at a specialised learning centre for children with autism in Kuala Lumpur. Data were collected through classroom observations and semi-structured interviews with the teacher and parent to explore the effectiveness of phonics to improve the child's early literacy. Findings indicate that the participant successfully acquired the first eight phoneme sounds introduced in the module, along with corresponding words. Additionally, the child demonstrated the ability to generalise learned phonemes and words across different contexts, including worksheets, reading materials, and isolated word recognition tasks. The results suggest that structured phonics instruction may serve as an effective approach in developing early literacy skills among children with ASD, particularly in the initial stages of reading acquisition.

Keywords: phonics, reading, intervention, children with Autism, ASD

INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition defined by persistent challenges in social communication and interaction, alongside restricted and repetitive patterns of behaviour (Wang, 2025; Davidson & Weismer, 2013). These neurological differences often manifest early in life, significantly impacting a child's ability to acquire foundational academic

skills, particularly emergent literacy. In the Malaysian context, the prevalence of autism has seen a dramatic surge; as of September 2024, registered cases among children reached 63,966, representing an 815% increase from 2013 (Shukri, N. 2024). Recent analysis indicates that the prevalence rate among Malaysian school-age children rose from 6.34 per 1,000 in 2018 to 9.29

per 1,000 in 2022, with the highest rates observed in the Federal Territory of Labuan and Kuala Lumpur (Shair et.al, 2024).

Despite the increasing diagnosis rates, children with ASD remain at high risk for significant reading difficulties (Wang, 2025). A common profile among these learners is a relative strength in decoding which sometimes characterized as hyperlexia contrasted against significant deficits in reading comprehension (Farrall & Drover, 2024; Wheat, 2018). This gap is often observable as early as preschool, where children may excel at concrete skills like alphabet knowledge but struggle with more abstract skills like phonological awareness and oral language. For non-speaking individuals with autism or those with limited verbal abilities, literacy serves as a vital alternative mode of communication, yet educational programs have historically prioritized social and functional life skills over academic instruction.

Recent evidence suggests that while many educators still perceive children with autism as not ready for formal reading instruction, these children are capable of significant literacy growth when provided with evidence-based, structured support (Wang, 2025). However, a persistent research-practice gap exists; many teachers lack the pedagogical content knowledge required to adapt literacy instruction for the unique needs of learners with ASD, particularly in areas like phonemic awareness. Systematic reviews now emphasize that phonics-based instruction, when adapted to reduce cognitive load and metalinguistic demands, is an effective intervention for improving decoding and word recognition in children with complex communication needs (Farrall & Drover, 2024). Therefore, this study investigates the implementation of structured phonics-based instruction as a primary method to support early reading development within the children with ASD population.

Early Literacy Development in Children with Autism Spectrum Disorder (ASD)

Children with ASD are frequently identified as being at risk for difficulties in reading development, particularly in the domains of decoding and reading

comprehension (Westerveld et al., 2016). Early literacy refers to the foundational skills, knowledge, and behaviours that precede formal reading and writing, including phonological awareness, letter knowledge, and oral language abilities. These skills are critical predictors of later reading success; however, their development is often uneven among children with ASD.

One of the primary challenges in early literacy acquisition among children with ASD lies in their language and communication difficulties. Many children with ASD experience delays or limitations in expressive and receptive language, which can hinder the development of phonological awareness and word recognition skills (Farrall & Drover, 2024, Benedek-Wood et al., 2016). Additionally, deficits in joint attention and social communication may reduce opportunities for incidental learning, which is typically crucial for early literacy development in neurodivergent children.

Historically, children with ASD and other developmental disabilities were often perceived as having limited potential to acquire literacy skills, particularly in cases involving co-occurring language or cognitive impairments (Lanter et al., 2012). Consequently, educational interventions frequently prioritised functional life skills and behavioural management over academic instruction, including reading. This perspective has been increasingly challenged by emerging research demonstrating that children with ASD, even those with limited verbal abilities, are capable of developing meaningful literacy skills when provided with appropriate instructional support (Benedek-Wood et al., 2016).

Despite this shift in understanding, significant gaps remain in the design and implementation of literacy interventions for children with ASD. Many existing programmes rely heavily on verbal instruction and oral responses, which may not be suitable for children with limited speech abilities (Wodka et al., 2013). As a result, literacy instruction is often fragmented and restricted to basic letter recognition rather than being developed as a comprehensive and functional skill. This limitation may contribute to persistent language and literacy difficulties if early intervention is not effectively implemented.

Furthermore, the heterogeneity of ASD means that children exhibit diverse literacy profiles. Some demonstrate relatively strong decoding skills but experience substantial difficulties in comprehension, particularly in understanding meaning at the semantic and pragmatic levels (Davidson & Weismer, 2013). This discrepancy suggests that instructional approaches should be carefully tailored to address both strengths and challenges, rather than relying on a one-size-fits-all model.

Given these complexities, there is a growing need for structured, evidence-based instructional approaches that can support early literacy development in children with ASD, particularly those who are at the initial stages of reading acquisition.

Phonics Instruction as an Alternative Approach for Early Literacy Development in Children with ASD

Phonics instruction, which emphasises the systematic relationship between graphemes (letters) and phonemes (sounds), has been widely recognised as an effective approach for developing early reading skills, particularly decoding (Lonigan & Shanahan, 2008). Decoding involves the ability to translate written symbols into their corresponding sounds, enabling learners to recognise and read words accurately (Easterbrook et al., 2015). For children with ASD, who may demonstrate strengths in pattern recognition and visual processing, phonics-based instruction offers a structured and explicit pathway to reading development.

Research indicates that many children with ASD possess the ability to decode words accurately but struggle with higher-level comprehension skills (Davidson & Weismer, 2013). This suggests that phonics instruction may serve as an effective entry point for reading acquisition, particularly in the early stages, by capitalising on their strengths in rule-based learning and repetition. Through systematic exposure to letter-sound relationships, children can develop foundational decoding skills that support subsequent reading development.

While alternative instructional approaches such as storytelling and contextual reading are commonly

used in classrooms, these methods may not provide sufficient structure for children with ASD who require explicit and systematic instruction (Benedek-Wood et al., 2016). Phonics instruction, in contrast, offers a more predictable and sequential learning process, which aligns well with the learning preferences of many children with ASD, particularly those who benefit from routine and structured environments.

In the Malaysian context, research on phonics-based literacy instruction, particularly for children with ASD, remains limited. Although phonics instruction has gained increasing attention, empirical evidence on its effectiveness within local educational settings is still emerging. Studies conducted in neighbouring contexts, such as Brunei, have demonstrated that phonics instruction can significantly enhance reading skills, increase learner motivation, and diversify reading materials among preschool children (Yahya et al., 2016). However, the transferability of these findings to children with ASD, particularly within the Malaysian context, warrants further investigation.

Moreover, there is a notable lack of structured phonics modules specifically designed for children with special educational needs, particularly at the early stages of literacy development. Many existing programmes are adapted from mainstream curricula and may not adequately address the unique learning needs of children with ASD. This highlights the need for specialised instructional materials that integrate structured phonics approaches with strategies tailored to ASD learners.

Therefore, this study seeks to address these gaps by exploring the effectiveness of a Special English Phonics Module (SEPM) in supporting early literacy development among children with ASD. By focusing on a structured and contextually relevant intervention, this study aims to contribute to the growing body of literature on evidence-based literacy practices for children with special educational needs.

The Special English Phonics Module (SEPM)

The Special English Phonics Module (SEPM) was developed as a structured instructional resource to support early reading acquisition among children

with ASD. The module was specifically designed to introduce foundational phonics skills through a systematic and sequential approach, beginning with basic phoneme recognition before progressing to word decoding activities. The instructional content focused on teaching individual letter sounds, sound-symbol correspondence, phoneme blending, and the reading of simple consonant-vowel-consonant (CVC) words.

The design of the SEPM was informed by principles of explicit phonics instruction and structured learning, which are widely recommended for learners with reading difficulties and developmental disorders. Each learning activity was organised progressively to reduce cognitive overload and to allow repeated exposure to previously learned phonemes. Visual supports, repetitive drills, guided practice, and structured routines were incorporated throughout the module to enhance learner engagement and retention.

In this study, the SEPM was implemented through individual instructional sessions conducted by the researcher. The sessions emphasised direct teaching, repetition, and immediate reinforcement to support phonological processing and decoding development. The module consists of few subtopics. The subtopics that were used throughout the study was as follow.

UNIT	TOPIC
1.	Introduction to /m/
2.	Introduction to /a/
3.	Introduction to /t/
4.	Introduction to <i>mat</i>
5.	Introduction to /c/
6.	Introduction to <i>cat</i>
7.	Introduction to /s/
8.	Introduction to <i>sat</i>
9.	Introduction to /p/
10.	Introduction to <i>pat</i>
11.	Introduction to /n/
12.	Introduction to <i>man</i>
13.	Introduction to <i>can</i>
14.	Introduction to <i>pan</i>
15.	Introduction to /f/

16. Introduction to *fan*

Table 1 – topics in SEPM

Additionally, the SEPM incorporated multiple instructional materials, including phoneme cards, decoding exercises, worksheets, and guided reading activities, to promote the transfer and generalisation of reading skills across different learning contexts. The structured and cumulative nature of the module enabled the participant to gradually build reading competence by combining previously acquired phonemes into meaningful word units.

METHODOLOGY

This study employed a single case study design to explore the effectiveness of a Special English Phonics Module (SEPM) in supporting early literacy development among a child with Autism Spectrum Disorder (ASD). A single-case design was selected because it allows for an intensive, contextualised, and holistic examination of the participant’s learning processes, behavioural responses, and instructional experiences within a real-life educational setting. According to Kratochwill, single-case studies are particularly appropriate when the study aims to investigate a unique or underexplored phenomenon in depth, especially when the boundaries between the phenomenon and context are not clearly evident (2010). In the context of special education, individual variability among children with ASD often necessitates detailed investigation at the individual level, as learning responses, communication abilities, and behavioural characteristics may differ substantially across learners. Therefore, the use of a single-case approach enabled the researcher to closely document the participant’s progression, challenges, and responses to structured phonics instruction in ways that may not be captured through large-scale quantitative designs.

The study focused to explore how structured phonics instruction influences early reading acquisition, specifically in terms of phoneme recognition, word decoding, and the ability to generalise learned skills across contexts. The intervention was conducted over a relatively short duration because the study was intended as an exploratory investigation to examine the immediate

instructional responsiveness of the participant towards the phonics-based intervention. Short-term interventions are commonly utilised in preliminary special education research to identify initial patterns of engagement, skill acquisition, and instructional feasibility before longer interventions are implemented (Kazdin, 2011). Despite the limited duration, continuous observations and repeated instructional sessions allowed the researcher to capture meaningful changes in the participant's early reading behaviours and engagement throughout the intervention process.

Participant and Sampling

The participant in this study was a five-year-old child diagnosed with Autism Spectrum Disorder (ASD), enrolled at a specialised learning centre for children with autism in Kuala Lumpur. The child had no prior exposure to formal English literacy instruction, making the participant suitable for examining early-stage literacy development.

A purposive sampling technique was employed to select the participant based on specific criteria aligned with the research objectives. The inclusion criteria were: (i) a formal diagnosis of ASD, (ii) age between 4 and 6 years, and (iii) no prior mastery of early literacy skills, particularly in English.

The selection of a young participant was intentional, as the effectiveness of phonics-based interventions is more observable when learners are at the initial stage of literacy acquisition. Additionally, early intervention is widely recognised as critical in supporting developmental outcomes among children with ASD.

The study was conducted at a specialised education centre, selected based on accessibility and institutional support, which facilitated smooth implementation of the research procedures.

Instruments

Data were collected using multiple instruments to ensure a comprehensive understanding of the participant's learning progress and to enhance the credibility of findings through data triangulation.

1. Observation Checklist

An observation checklist was used to systematically record the participant's progress in phoneme recognition and word reading. The checklist focused on specific indicators, including; (i) ability to produce target phoneme sounds, (ii) ability to identify phonemes among distractors; and (iii) ability to decode simple words.

Observation is widely used in special education research as it allows direct assessment of functional skills in naturalistic learning settings.

2. Video Recording and Field Notes

All instructional sessions were video-recorded to ensure accurate documentation of the teaching and learning process. Field notes were also taken during each session to capture behavioural responses, engagement levels, and any notable patterns in learning. These records enabled detailed analysis and reduced reliance on retrospective interpretation.

3. Semi-Structured Interviews

Semi-structured interviews were conducted with both the participant's teacher and parent to obtain multiple perspectives on the effectiveness of the phonics module. This approach allowed the researcher to gather in-depth qualitative insights beyond observable classroom behaviours.

The interview with the teacher focused on instructional aspects, including the usability of the module, the participant's responsiveness during lessons, and observed changes in phoneme recognition and reading performance. The teacher also provided reflections on the practicality of implementing the module within a structured learning environment.

In addition, an interview with the parent was conducted to explore the transfer of learning beyond the classroom setting. The parent provided valuable information regarding the participant's engagement with reading activities at home, consistency of skill application, and any observable improvements in early literacy behaviours.

Both interviews followed a semi-structured format, allowing flexibility for participants to elaborate on their experiences while ensuring that key themes

related to instructional effectiveness, learner progress, and skill generalisation were consistently addressed. Conducting interviews with both informants enabled data triangulation and enhanced the credibility of the findings by incorporating perspectives from both educational and home contexts.

Data Collection Procedures

Prior to data collection, ethical approval and institutional permission were obtained from the administration of the learning centre. Informed consent was also secured from the participant's parent.

The data collection process was conducted in several stages:

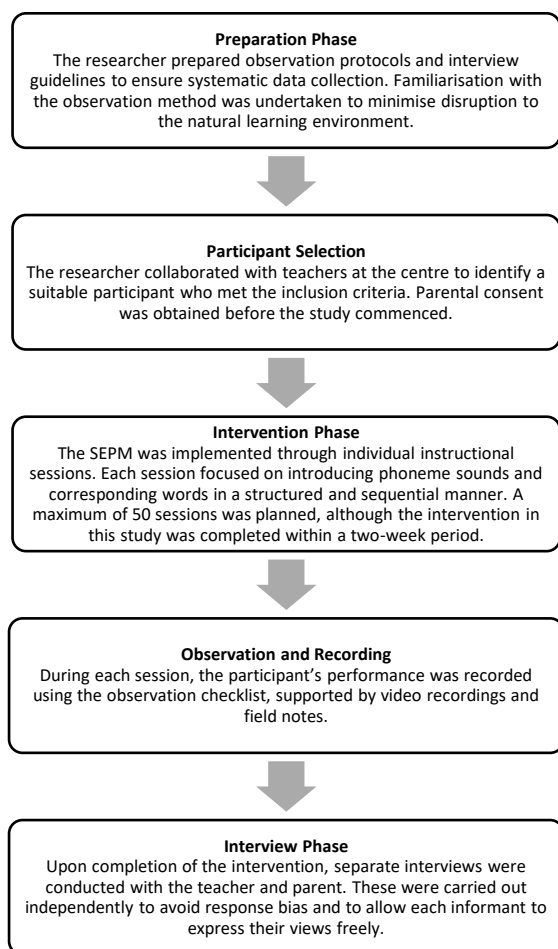


Figure 1: Data collection procedure.

Figure 1 illustrates the overall data collection procedure implemented in this study. The process began with the preparation phase, during which the researcher developed the observation protocols, interview guidelines, and supporting documentation to ensure

systematic and consistent data collection throughout the study. Familiarisation with the observation procedures was also conducted prior to the intervention in order to minimise disruption to the participant's natural learning environment and to enhance the credibility of the observational data.

The second phase involved participant selection. In this stage, the researcher collaborated closely with teachers at the learning centre to identify a suitable participant who fulfilled the inclusion criteria established for the study. Ethical considerations were prioritised throughout this process, and informed parental consent was obtained before the commencement of the intervention sessions.

The intervention phase constituted the core component of the study. The Special English Phonics Module (SEPM) was implemented through individual instructional sessions focusing on phoneme recognition, sound-symbol correspondence, and word decoding skills. The instructional activities were delivered in a structured and sequential manner to support systematic literacy development. Although a maximum of 50 instructional sessions had initially been planned, the intervention conducted in this study was completed within a two-week period due to the participant's learning progression and the scope of the exploratory intervention.

During the observation and recording phase, the participant's responses, engagement, and literacy performance were systematically documented throughout each instructional session. Data were collected using observation checklists, supported by video recordings and field notes to ensure comprehensive documentation of behavioural and instructional changes over time.

Finally, upon completion of the intervention, semi-structured interviews were conducted separately with the teacher and parent to obtain additional perspectives regarding the participant's literacy development, behavioural changes, and overall response to the phonics intervention. The interviews were carried out independently to minimise response bias and to allow each informant to express their views openly and freely.

Data Analysis

Data were analysed using a descriptive qualitative approach. Observation data were examined to identify patterns in phoneme acquisition, word recognition, and generalisation of reading skills. Progress was tracked across sessions to determine the rate and consistency of learning.

Interview data were analysed thematically, focusing on recurring perceptions regarding; (i) effectiveness of the phonics module, (ii) changes in the participant's learning behaviour, and (iii) transfer of skills beyond the instructional setting

Triangulation of observation and interview data was conducted to enhance the credibility and trustworthiness of the findings.

Trustworthiness and Ethical Considerations

To ensure the rigour of the study, several strategies were employed:

- i. Triangulation: Multiple data sources (observations, interviews, video recordings) were used to validate findings
- ii. Prolonged engagement: Continuous observation across multiple sessions allowed for a more reliable assessment of learning progress
- iii. Member checking: Insights from the teacher and parent were used to confirm interpretations

Ethical considerations were carefully addressed. Informed consent was obtained from the participant's parent, and confidentiality was maintained by anonymising all identifiable information. The study was conducted in a manner that ensured the well-being and comfort of the participant throughout the intervention.

FINDINGS

The findings of this case study indicate that the implementation of the Special English Phonics Module (SEPM) contributed positively to the participant's early literacy development, particularly in phoneme recognition, word decoding, and skill generalisation.

Phoneme Acquisition and Decoding Skills

The findings of this case study indicate that the implementation of the Special English Phonics Module (SEPM) contributed positively to the participant's early literacy development, particularly in phoneme recognition, word decoding, and skill generalisation. Over the two-week intervention period, the participant successfully acquired eight foundational phoneme sounds, namely /m/, /a/,

/t/, /c/, /s/, /p/, /n/, and /f/. The participant demonstrated the ability to articulate each phoneme accurately, identify target phonemes among distractors, and consistently respond to phoneme recognition tasks. Following phoneme acquisition, the participant progressed to decoding simple consonant-vowel-consonant (CVC) words such as *mat*, *cat*, *sat*, *pat*, *man*, *can*, and *fan*. The ability to blend individual phonemes into meaningful word units suggests the development of foundational decoding abilities within a relatively short period.

These findings support existing literature suggesting that children with ASD may respond positively to explicit and systematic reading instruction, particularly approaches that emphasise predictable patterns, repetition, and rule-based learning (Randi, Newman & Grigorenko, 2010). From a cognitive processing perspective, phonics instruction provides a highly structured learning sequence that reduces cognitive ambiguity and supports sequential information processing. This may be particularly beneficial for children with ASD, who often demonstrate strengths in pattern recognition and rule-governed learning. The structured and cumulative nature of the SEPM enabled the participant to build new word forms from previously mastered phonemes, reflecting principles associated with behaviourist learning theory, where repeated stimulus-response associations strengthen skill acquisition through reinforcement and repetition.

The findings may also be interpreted through the lens of Weak Central Coherence Theory (Frith, 1989), which proposes that individuals with ASD tend to process information in a detail-focused rather than global manner. Phonics instruction aligns closely with this cognitive style because it emphasises attention to discrete sound-symbol correspondences before progressing to larger linguistic units. Rather than requiring immediate holistic word recognition, the participant was taught to process smaller phonemic components systematically, which may explain the observed improvement in decoding performance.

However, these findings should also be interpreted cautiously. While the participant demonstrated improved decoding skills, decoding accuracy alone

does not necessarily indicate full reading comprehension. Previous studies have shown that some learners with ASD may develop strong word recognition abilities while continuing to experience difficulties in language comprehension and inferential understanding (Nation et al., 2006). Therefore, although the intervention appeared effective in supporting early decoding acquisition, further investigation is needed to determine whether these gains can extend to broader literacy skills such as comprehension, fluency, and independent reading.

Generalisation of Reading Skills

A particularly significant finding of this study was the participant's ability to generalise learned phonemes and words across multiple learning contexts. The participant successfully recognised and read target words not only within structured module activities but also in worksheets, printed reading materials, and isolated word recognition tasks. This suggests that learning was not solely dependent on the original instructional context, but rather transferable across different environments and materials.

The ability to generalise learned skills is especially important in ASD intervention research because many children with ASD experience difficulty transferring acquired knowledge across settings or situations. The successful transfer observed in this study may be attributed to the repeated and consistent exposure to phoneme patterns across multiple instructional activities. This aligns with theories of distributed practice and reinforcement, where repeated application of learned skills across contexts strengthens retention and retrieval processes.

Furthermore, the use of visual supports, repetitive routines, and structured sequencing within the SEPM may have reduced cognitive overload and supported learning stability. Previous research has suggested that learners with ASD benefit from instructional environments that are predictable, visually organised, and highly structured (Hume et al., 2021). The consistency of the phonics activities likely contributed to the participant's ability to internalise sound-symbol relationships and apply

them flexibly beyond the immediate teaching session.

Nevertheless, contradictory findings in the literature suggest that not all children with ASD respond equally to phonics-based interventions. Some studies report limited generalisation when learners exhibit more significant receptive language difficulties or reduced instructional engagement (Davidson & Ellis Weismer, 2017). This suggests that learner characteristics, cognitive profiles, and communication abilities may influence responsiveness to phonics interventions. Therefore, while the present findings are promising, they should not be generalised to all children with ASD without consideration of individual variability.

Behavioural Adaptation and Learning Readiness

Observational findings further revealed that the participant initially experienced difficulty adapting to structured instructional routines. Early sessions were characterised by impulsive behaviours, including handling learning materials before instructions were provided, suggesting limited familiarity with formal phonics-based learning tasks. However, behavioural regulation gradually improved over subsequent sessions, with the participant demonstrating increased responsiveness to instructions, improved task engagement, and greater attentional control.

These behavioural changes may be explained through behaviourist principles of reinforcement and routine formation. Repeated exposure to predictable instructional sequences likely helped the participant develop familiarity with task expectations, thereby reducing uncertainty and increasing behavioural stability. For many children with ASD, predictable routines and structured learning environments are essential in reducing anxiety and enhancing engagement. The findings therefore support previous literature suggesting that instructional consistency plays a critical role in supporting learning readiness among children with ASD.

Importantly, the improvement in behavioural engagement may also explain the observed literacy gains. Increased attentional control and

instructional compliance likely enhanced the participant's capacity to process phonological information effectively. This suggests that literacy development in ASD may not depend solely on instructional content, but also on behavioural readiness, emotional regulation, and the establishment of supportive learning routines.

Insight from Teacher and Parent Interviews

Data from semi-structured interviews further support the effectiveness of the SEPM.

The teacher reported that the phonics-based approach facilitated faster recognition of letter sounds compared to conventional alphabet-based instruction. The structured nature of the module was perceived as beneficial in maintaining learner focus and supporting instructional organisation. As explained by the teacher, *"He was able to remember the sounds more quickly because the lessons followed the same routine every day. The phonics approach helped him connect the sounds to the words better than just memorising letters."* However, the teacher also acknowledged that an initial adjustment period was necessary, as the participant required time to adapt to phonics-based learning routines.

Similarly, the parent reported observable improvements in literacy performance at home, particularly in the participant's ability to independently read previously learned words. The parent stated, *"At first he was confused because he learned Malay sounds before, but after repeated practice, he started reading the English words by himself at home."* Nevertheless, the parent noted initial confusion due to prior exposure to Malay phonics, which differs from English phonics in terms of sound-symbol correspondence. This finding highlights the potential influence of bilingual or multilingual phonological systems on English reading acquisition among children with ASD.

Collectively, these findings suggest that the effectiveness of phonics instruction extends beyond isolated instructional sessions and may be strengthened through consistent reinforcement across school and home environments. The involvement of both teachers and parents appears to support continuity of learning, which is particularly important for children with ASD who

often benefit from repeated exposure and stable instructional routines.

DISCUSSION

The findings of this study support existing literature suggesting that children with ASD are capable of acquiring early literacy skills when provided with structured and explicit instruction (Benedek-Wood et al., 2016). The participant's ability to acquire phoneme knowledge and apply it to word decoding within a short timeframe highlights the effectiveness of phonics-based instruction as an entry point to reading.

Consistent with previous research (Lonigan & Shanahan, 2008), the use of systematic phonics instruction enabled the participant to develop decoding skills by establishing clear relationships between graphemes and phonemes. This is particularly important for children with ASD, who may benefit from rule-based and repetitive learning structures.

The participant's success in generalising reading skills across contexts is a notable finding. Generalisation remains a significant challenge in ASD education, as many learners struggle to transfer skills beyond the original learning environment. The ability to apply phonics knowledge in different formats suggests that the SEPM provided meaningful and flexible learning experiences. This aligns with findings by Wodka et al. (2013), which emphasise the importance of structured yet adaptable instructional approaches.

Additionally, the observed improvement in behavioural regulation over time reflects the compatibility of structured phonics instruction with the learning characteristics of children with ASD. The predictable and sequential nature of the module may have contributed to reduced anxiety and increased engagement, which are critical factors in effective learning.

The initial confusion between Malay and English phonics, as reported by the parent, also highlights an important contextual factor in multilingual settings such as Malaysia. This suggests that phonics instruction for children with ASD should account

for cross-linguistic differences, particularly when learners are exposed to multiple language systems.

Despite the positive findings, this study is limited by its single-case design, which restricts generalisability. Future research involving a larger sample of children with ASD is needed to validate the effectiveness of the SEPM across diverse learning profiles. Additionally, longer intervention periods could provide further insight into the sustainability of learning outcomes and the development of higher-level reading skills such as comprehension.

CONCLUSION

This study examined the effectiveness of a Special English Phonics Module (SEPM) in supporting early literacy development among a child with Autism Spectrum Disorder (ASD). The findings demonstrate that structured phonics instruction can facilitate the acquisition of foundational reading skills, particularly in phoneme recognition and word decoding, even within a relatively short intervention period.

The participant successfully acquired eight phoneme sounds and demonstrated the ability to decode simple consonant-vowel-consonant (CVC) words. More importantly, the participant was able to generalise these skills across different contexts, indicating meaningful learning beyond structured instructional activities. This suggests that phonics-based instruction is not only effective for skill acquisition but also supports the transferability of early literacy skills among children with ASD.

Overall, the findings reinforce the growing body of evidence that children with ASD are capable of developing early literacy skills when provided with structured, explicit, and developmentally appropriate instruction.

Implication for Practice

The findings of this study offer several important implications for educators, practitioners, and parents working with children with ASD:

First, the use of structured phonics instruction should be considered a viable and effective approach for introducing early reading skills, particularly for learners who are at the initial stages

of literacy development. The sequential and systematic design of phonics instruction aligns well with the learning preferences of many children with ASD, who often benefit from predictable routines and explicit teaching.

Second, the incorporation of specialised phonics modules, such as the SEPM, can enhance instructional delivery by providing clear guidance and structured learning progression. This may be particularly beneficial for teachers who require additional support in designing effective literacy interventions for students with special educational needs.

Third, collaboration between educators and parents plays a critical role in reinforcing learning. The findings indicate that consistent practice across school and home environments contributes to improved literacy outcomes and supports skill retention and generalisation.

Implication for Policy and Research

At a broader level, this study highlights the need for increased attention to early literacy instruction for children with ASD within educational systems, particularly in multilingual contexts such as Malaysia. The integration of evidence-based phonics approaches into special education curricula could enhance literacy outcomes and reduce long-term learning disparities.

In terms of research, the study contributes to the limited body of literature on phonics-based interventions for children with ASD in the Malaysian context. It also underscores the importance of developing specialised instructional materials tailored to the unique learning needs of this population.

Implication for Future Research

Despite its contributions, this study has several limitations. The use of a single-case design limits the generalisability of the findings. Future studies should involve a larger and more diverse sample of children with ASD to validate the effectiveness of the SEPM across different learner profiles.

Additionally, the short duration of the intervention restricts insights into the long-term sustainability of literacy development. Future research could explore

extended intervention periods and examine the impact of phonics instruction on higher-level reading skills, such as comprehension and fluency.

Further investigation is also needed to examine the influence of bilingual or multilingual exposure on phonics acquisition among children with ASD, particularly in contexts where multiple language systems coexist.

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