Inclusive Speech Strategies for Malaysian Children with Autism

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ABSTRACT

This qualitative study examines the effectiveness of visual-spatial approaches in promoting speech development among children with Autism Spectrum Disorder (ASD) while analysing how cognitive and affective factors mediate communication outcomes. Through semi-structured interviews with eight experienced instructors across Malaysian special education settings, this study examined the implementation experiences with visual support systems, particularly the Picture Exchange

Communication System (PECS). Thematic analysis revealed complex relationships between visual-spatial interventions and speech development, mediated by cognitive factors (autism severity, developmental level) and affective factors (motivation, confidence). The findings support an evidence-based framework for inclusive communication interventions aligned with SDG 4, emphasizing individualized approaches in supporting children with ASD.

Keywords: *Affective Factors, Autism Spectrum Disorder, Cognitive Factors, Speech Utterance, Visual-spatial Approach*

INTRODUCTION

Communication development in children with Autism Spectrum Disorder (ASD) represents a significant concern in Malaysia, particularly as prevalence rates continue to rise. Based on the Ministry of Health Malaysia (2019) reported the latest projections place the prevalence of epilepsy among children at one – from one in 600 to about 1.6% in 2016, with higher rates in urban areas. Therefore, such a demographic shift requires informing interventions that will enhance communication development concerning Malaysian culture and education systems.

According to Low et al. (2021), research conducted in Kuala Lumpur, Malaysia, shows that the knowledge of Autism Spectrum Disorder (ASD) about speech and language deficits, education inclusion and the factual aspect of ASD is still limited. The study implies that understanding of these interaction shortages is still inadequate, which can lead to disagreements and useless support for persons with ASD. In addition, a study by Muhamad Hafiz et al., (2024) discovered that people with ASD, usually have relatively good visual-spatial streams that may be helpful in the improvement of verbal communication. However, it is important to comprehend how another set of factors which are the cognitive factors (prior knowledge, executive functions) and affective factors (motivation, self-efficacy) interact with the approach to make or affect the intervention. The process of anchoring communication interventions to the United Nations Sustainable Development Goal 4 (UN-SDG 4) on quality education gives another significant perspective to this research. Furthermore, the fourth sustainable development goal is about quality education for all and learning for all throughout life. It offers some understanding of which many intervention frameworks can build the targets for both urgent concerns in communication, as well as long-term educational integration and child development for those diagnosed with ASD. Although VSA strategies hold promise for facilitating the development of communication for children with ASD, their use seems to depend on various cognitive and affective characteristics, the implications of which merit consideration. This knowledge gap is further highlighted by Muhamad Hafiz et al., (2023), who explored the use of emotion-based games for children with ASD through the VARK model. Their research demonstrated that tools specifically designed to address the unique sensory and cognitive needs of children with ASD can significantly enhance communication development.

An introduction in a research paper serves as the foundation for the study, providing essential background information, establishing the research problem, and outlining the paper's objectives. It sets the stage for readers by explaining why the research is important and how it fits into the broader academic or professional context. A well-written introduction engages the reader, presents a clear research question or hypothesis, and justifies the need for the study. It should be informative yet concise, ensuring that the reader understands the purpose and significance of the research before delving into the details.

Despite the availability of various visual support systems and communication interventions, approximately 25-30% of children with ASD remain minimally verbal (Tager-Flusberg & Kasari, 2013). In Malaysia, this challenge is compounded by limited research on the effectiveness of visual-spatial

approaches in local educational settings and an insufficient understanding of how cognitive and affective factors mediate intervention success. The need for evidence-based frameworks that align with both SDG 4 goals and local cultural contexts presents a significant gap in current practice.

This study addresses three primary objectives:

1. To examine the effectiveness of integrated visual-spatial approaches in promoting speech development among children with ASD.
2. To analyse how cognitive and affective factors mediate the relationship between visual-spatial abilities and speech fluency.
3. To develop an evidence-based framework for implementing inclusive communication interventions aligned with SDG 4.

The significance of this research lies in its potential to enhance understanding of how visual-spatial interventions can be effectively implemented while considering the crucial mediating roles of cognitive and affective factors. By examining instructor perspectives across diverse Malaysian educational settings, this study contributes to the development of culturally appropriate intervention strategies that support inclusive education goals.

LITERATURE REVIEW

Current research on supporting speech development in children with ASD reveals a complex interplay between visual-spatial abilities, cognitive factors, and affective components. This review synthesises recent findings while identifying crucial gaps in existing knowledge, particularly within the Malaysian context.

The implementation of visual-spatial interventions for children with ASD has evolved significantly in recent years. Muhamad Hafiz et al. (2024) and Muhamad Hafiz et al. (2024) found significant relationships between visual-spatial abilities and speech fluency, mediated through cognitive and affective factors. Their research introduced the integrated Visual-Spatial Mediated Model of Speech Fluency (i-VSM), providing a comprehensive framework for understanding how visual supports can enhance communication development.

Studies examining the Picture Exchange Communication System (PECS) have shown varying degrees of effectiveness. While meta-analyses reveal moderate positive effects on basic communication skills (effect size = 0.42). According to Flippin, Reszka and Watson (2010) gains are often limited in advanced speech development. Muhamad Hafiz et al., (2023) extended this understanding by evaluating the design characteristics of visual teaching tools through the VARK model lens, emphasising the importance of material selection and sensory considerations in intervention success.

Recent research emphasises the crucial role of cognitive factors in communication development. A significant study by Russell & Hill (2001) identified strong relationships between executive functions and language acquisition among children with ASD. This work demonstrates how processing abilities and prior knowledge influence intervention outcomes, suggesting the need for cognitively appropriate intervention strategies.

Affective factors have emerged as equally crucial mediators of intervention success. Samson et al. (2015) conducted a comprehensive analysis of emotion regulation in children with ASD, revealing strong

correlations between emotional state and learning outcomes. Their findings emphasised how motivation and self-confidence significantly impact therapy engagement and success. This work builds on Bandura's (2019) social cognitive theory, which highlights the bidirectional relationship between emotional states and learning achievement.

Table 1. Comprehensive Overview of Key Research Studies Examining Cognitive and Affective Mediating Factors in Autism Spectrum Disorder Communication Interventions

Author(s)	Focus Area	Key Findings	Implications
Russell & Hill (2001)	Cognitive Factors	Strong link between executive functions and language	Need for cognitive assessment
Samson et al. (2015)	Affective Factors	Emotion regulation impacts learning	Consider emotional state
Chiat & Roy (2008)	Development	Early skills predict outcomes	Early intervention crucial
Tager-Flusberg et al. (2005)	Communication	Variable development patterns	Individualized approaches needed

The United Nations Sustainable Development Goal 4 emphasises inclusive and equitable quality education for all learners. Research by Wong et al. (2015) identified evidence-based practices for supporting children with ASD in inclusive settings. Their comprehensive review highlighted the importance of structured interventions that consider both cognitive and affective factors. In the Malaysian context, studies have shown increasing ASD prevalence and a growing need for effective interventions. The Ministry of Health Malaysia (2019) reported significant increases in ASD diagnosis, highlighting the importance of developing culturally appropriate intervention strategies. This aligns with research by Derguy et al. (2016) emphasizing the role of environmental and cultural factors in intervention success. Cultural considerations are particularly important when implementing visual-spatial interventions in the Malaysian context. Muhamad Hafiz et al., (2025) developed an integrated framework that incorporates Malaysian cultural elements into visual learning tools for children with ASD. By synthesizing the ADDIE instructional design model with Fleming's VARK learning styles theory, their research provides guidelines for creating educational materials that are culturally responsive while effectively addressing the unique visual-spatial learning strengths of Malaysian children with ASD. Their findings suggest that culturally familiar imagery and symbols can significantly enhance engagement and improve communication outcomes in intervention settings.

Theoretical Framework

This study employs an integrated conceptual framework positioning visual-spatial approaches as the independent variable, speech development as the dependent variable, and both cognitive and affective factors as mediating variables. The framework builds upon Bandura’s (1999) social cognitive theory, which emphasises the bidirectional relationship between personal factors and environmental influences in learning and development. This theoretical foundation is particularly relevant for understanding how children with ASD process and respond to visual-spatial interventions within educational settings.

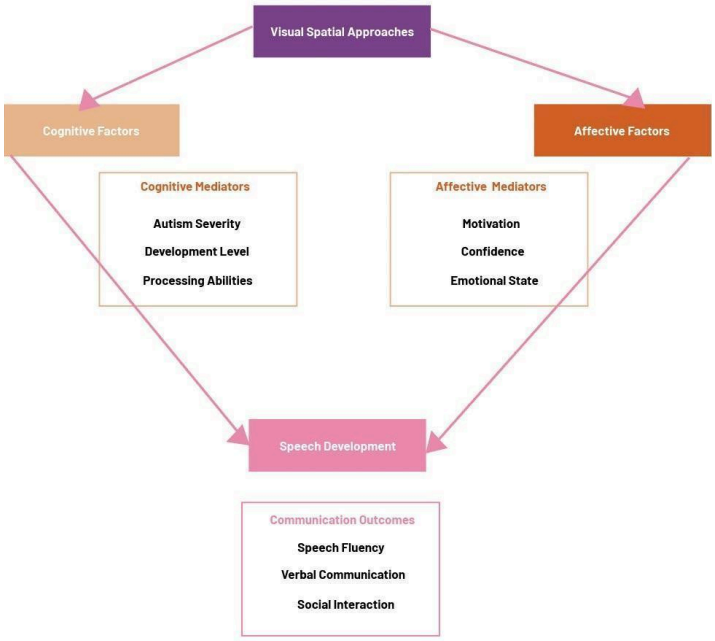

Figure 1. V-MISC Framework of Visual-Spatial Mediated Integration for Speech Communication
(Source: Author, 2025)

The researchers developed a V-MISC Framework of Visual-Spatial Mediated Integration for Speech Communication (Figure 1), which recognises three key components in the learning process. Firstly, visual-spatial abilities serve as the foundation for intervention, acknowledging the often-preserved visual processing strengths in individuals with ASD. Secondly, cognitive mediators, including prior knowledge and executive functions, influence how effectively visual information is processed and translated into communication skills. Thirdly, affective factors such as motivation, self-efficacy, and emotional state act as crucial mediators that can either facilitate or impede the learning process. The V-MISC Framework (Visual-Spatial Mediated Integration for Speech Communication) represents a comprehensive approach to supporting speech development in children with ASD through visual-spatial interventions. This evidence-based framework integrates findings from instructor experiences and aligns with SDG 4 principles of inclusive education. The framework's emphasis on multisensory approaches is supported by research from Muhamad Hafiz et al. (2024), who identified specific sensory modality preferences among children with ASD. Their study demonstrated that understanding and accommodating these preferred learning modalities is essential for developing effective communication interventions that support cognitive and affective development.

This theoretical structure aligns with Novak's Meaningful Learning Model, which emphasises the integration of cognitive and affective elements in knowledge construction. The framework particularly considers how these elements interact within the context of SDG 4's emphasis on inclusive education, providing a theoretical basis for understanding how visual-spatial interventions can support equitable educational outcomes for children with ASD. Muhamad Hafiz et al. (2024) examined the collaborative co-creation process between autistic children and designers, finding that structured artistic activities significantly improved sustained attention in children with ASD. This work suggests that interactive, visually-engaging approaches can serve as effective platforms for enhancing communication skills.

RESEARCH METHODOLOGY

This study employed a qualitative phenomenological approach to examine instructor experiences and perspectives regarding communication therapies for Malaysian children with ASD. The selection of phenomenology as a methodological framework, guided by Creswell and Poth's (2018) principles, enabled deep exploration of lived experiences while acknowledging the complex nature of implementing communication interventions in diverse educational settings. This study employed a rigorous qualitative approach in Table 2 below, incorporating multiple validation strategies to ensure trustworthiness. Data triangulation was achieved through three primary sources: semi-structured interviews, field observations, and document analysis of instructors' implementation records. Member-checking procedures were implemented, where interview transcripts and preliminary findings were shared with participants for verification and additional input.

Table 2. Comprehensive Data Collection Methods and Multi-Level Validation Procedures for Qualitative Research Trustworthiness in ASD Communication Study

Validation Strategy	Implementation Method	Purpose
Data Triangulation	Multiple data sources	Enhanced validity
Member Checking	Participant verification	Accuracy confirmation
Peer Review	Expert panel review	Analytical rigor
Audit Trail	Detailed documentation	Methodological transparency

Research Design and Setting

The study design prioritised gathering rich, contextual data through semi-structured interviews with experienced instructors across Malaysian special education settings. This approach allowed for a detailed examination of how visual-spatial interventions are implemented and how various factors influence their effectiveness. The research settings encompassed both government and private institutions across Peninsular Malaysia and Malaysian Borneo, providing a comprehensive view of intervention implementation across different cultural and institutional contexts.

Participant Selection and Characteristics

Through purposive sampling, eight experienced instructors were recruited from four distinct educational institutions: the NASOM autism society, a special education school in Selangor, the Kuching Autistic Association, and a Kuching special education school. This geographical and institutional diversity ensured the representation of various perspectives and approaches to ASD intervention. The participant sample reflected typical gender distributions in Malaysian special education, with 75% female and 25% male instructors, and an average of 6.5 years of experience working with children with ASD.

Data Collection Procedures

Data collection occurred through in-depth, semi-structured interviews conducted between September and November 2022. Each interview lasted 30-45 minutes and explored key themes derived from the theoretical framework: implementation experiences with visual-spatial approaches, observations

of cognitive and affective mediating factors, and perspectives on intervention effectiveness. Interviews were conducted at participants' institutions, audio-recorded, and supplemented with field notes to capture contextual details and non-verbal elements.

Data Analysis

Analysis followed Braun and Clarke's (2006) thematic analysis methodology, utilizing Atlas.ti software for systematic coding and theme development. The process involved multiple stages: familiarisation with transcripts, initial coding, theme identification, review and refinement of themes, and final theme definition. This rigorous approach ensured systematic analysis while maintaining sensitivity to nuanced perspectives and experiences shared by participants.

FINDINGS

The thematic analysis revealed interconnected patterns of implementation experiences and outcomes. Figure 2 illustrates the relationship between identified themes and their subcomponents. Below, the research presents key findings organised by the major themes identified through thematic analysis. To ensure anonymity, instructors are referred to by pseudonyms. The discussion in Table 3 below, includes a comparison of our results with existing literature and theoretical perspectives. The thematic analysis uncovered intricate patterns regarding the impact of visual-spatial approaches on speech development in children with ASD, influenced by various cognitive and emotional factors. Three main themes emerged from the data, each offering valuable insights into different aspects of intervention implementation and effectiveness.

Table 3. Detailed Thematic Analysis Results: Representative Sample Responses from Malaysian Special Education Instructors Regarding Visual-Spatial Communication Interventions

Discussion	Theme Result
Efficacy of PECS for building speech and communication skills – "PECS helps children understand instructions better through visual input rather than just listening." (Mr. Syafiq)	Children may rely too heavily on PECS symbols rather than transitioning to speech.
"The majority of autistic students I have worked with are less communicative verbally despite being trained in PECS for years. They can match or select pictures well but have very few spoken words." (Ms. Sarah)	Must be paired with natural speech and language development strategies - Aligns with studies showing modest effects of PECS on generalisation to speech.
"They get so used to choosing pictures to communicate, they lose interest in talking. Speech becomes secondary." (Ms. Amira) -"Starting from basic sounds, followed by words before linking them with pictures. This helps PECS transition to actual speech." (Ms. Suri)	Highlights the need for multidimensional therapies incorporating verbal, motor, and social skills.
Influence of developmental and cognitive factors – "Perhaps only 15% of my lowerfunctioning autistic students achieve speech gains from PECS. But those with	Language acquisition requires synergistic cognitive and socioemotional processes Influence of developmental and cognitive factors -

Asperger's are much quicker at picking it up." (Ms. Sarah)	Outcomes vary based on initial language skills, ASD severity, behaviours, and sensory issues.
"Overactive and inattentive children really struggle with PECS. But passive learners can do well as it provides visual structure." (Mr. Amar)	Higher functioning students progress faster with PECS.
"Some kids dislike the textures or smells of laminated pictures. This causes them to avoid using PECS." (Mr. Pradip)	Must be tailored to child's natural learning modes and interests - Reflects research showing differential response to PECS based on functioning level.
"Using sign language along with PECS rather than just pictures. Matching verbal and visual content really help them connect." (Mr. Pradip)	Cognitive theories emphasise the need for scaffolding based on a child's skills.
Influence of affective factors – "After initial interest, many kids lose motivation with PECS – they find it repetitive. We try using incentives, embedding them into games and varied activities to sustain interest." (Ms. Suri)	The best practice is using PECS within the child's routines and leveraging multisensory input Influence of affective factors - Maintaining motivation and confidence key challenges.
"Students who aren't confident using PECS start avoiding it. Building their selfbelief is crucial." (Ms. Anita)	Overwhelming children inhibit PECS progress.
"If a child is having a bad day and feeling irritable, they resist PECS totally. We have to be flexible and work around their mood." (Mr. Amar)	Emotional state impacts responsiveness on a given day – Low motivation/selfregulation is associated with poorer outcomes.
Additional beneficial therapies – "Lots of repetition, labelling objects, naming picture flashcards to help in building vocabulary. Simple conversational exchanges each day work better than complex PECS." (Ms. Anita)	High anxiety impairs the capacity to learn.
"Combining signs and words together really reinforces learning." (Ms. Sarah)	Need for positive mastery experiences tailored to child's affective needs Additional beneficial therapies - Verbal instruction, sign language, technology aids, and discrete trial training recommended.
"Too much screen time doesn't support real conversation and social skills. A balance is needed." (Ms. Suri)	A balanced approach integrating varied modalities optimal - Multimodal strategies build complementary communication skills across verbal, visual, motor and social domains.

Theme 1: Effectiveness of Visual-Spatial Approaches

Instructor perspectives revealed nuanced views regarding the effectiveness of visual-spatial interventions, particularly PECS. While participants consistently noted initial benefits in basic communication development, they observed limitations in promoting advanced speech skills. As Mr. Syafiq explained, "PECS helps children understand instructions better through visual input rather than just listening." However, Ms. Sarah's observation that "the majority of autistic students I have worked

with are less communicative verbally despite being trained in PECS for years" highlights crucial limitations in speech development outcomes.

Theme 2: Cognitive and Developmental Mediators

The analysis revealed significant variation in the intervention outcomes based on cognitive and developmental factors. Instructor observations consistently indicated that children's responses to visual-spatial approaches varied substantially based on their developmental level and cognitive capabilities. Ms. Sarah's observation that "perhaps only 15% of my lower functioning autistic students achieve speech gains from PECS, but those with Asperger's are much quicker at picking it up" exemplifies how cognitive factors mediate intervention effectiveness.

Theme 3: Affective Factors and Intervention Success

Analysis revealed the crucial role of affective factors in determining intervention outcomes. Instructors consistently reported that emotional state and motivation significantly influenced children's engagement with visual-spatial approaches. Ms. Suri's observation that "after initial interest, many kids lose motivation with PECS – they find it repetitive" highlights the need for sustained engagement strategies. Ms. Anita's comment that "students who aren't confident using PECS start avoiding it" further emphasises how affective factors can either facilitate or impede progress.

Emotional state emerged as a particularly significant mediator. Mr. Amar's observation that "if a child is having a bad day and feeling irritable, they resist PECS totally" demonstrates how daily emotional variations impact intervention effectiveness. These findings align with research conducted by Samson et al. (2015) on emotion regulation in ASD, suggesting that affective factors significantly influence learning outcomes.

Theme 4: Implementation Challenges and Adaptations

Instructors identified various implementation challenges and developed adaptive strategies to overcome them. The need for individualised approaches became evident through experiences like Mr. Pradip's observation that "some kids dislike the textures or smells of laminated pictures," highlighting how sensory sensitivities can affect intervention success. Successful adaptations often involve integrating multiple modalities, as illustrated by Ms. Sarah's comment that "combining signs and words together really reinforces learning."

Table 4. Quantitative Analysis of Theme Frequency and Distribution Patterns Across Participant Responses in Malaysian Educational Settings

Theme	Frequency	Implications
Visual Support Effectiveness	28 mentions	Implementation considerations
Cognitive Mediation	32 mentions	Assessment needs
Affective Factors	25 mentions	Support strategies

The frequency and distribution of key themes across participant responses are presented in Table 2, highlighting the prevalence of specific concerns and observations.

DISCUSSION

The findings of this study in Table 5 below, align with recent international research while highlighting unique considerations within the Malaysian educational context. Recent studies from 2020-2024 have increasingly emphasised the importance of cultural adaptation in visual-spatial interventions. For example, Muhamad Hafiz et al. (2024) found that cultural considerations significantly impact intervention effectiveness, particularly in Asian educational settings. The V-MISC framework's implementation requires careful consideration of local educational resources and cultural practices. Table 3 presents specific implementation considerations for the Malaysian context.

Table 5. Cultural and Contextual Implementation Considerations for Visual-Spatial Communication Frameworks in Malaysian Educational Systems

Framework Component	Local Adaptation	Resource Requirements
Visual Integration	Cultural symbol adaptation	Local material access
Mediator Support	Family involvement patterns	Community resources
Implementation Strategy	Educational system alignment	Teacher training

Besides, the findings of this study also contribute to understanding how visual-spatial approaches can effectively support speech development in Malaysian children with ASD in Table 6 below while highlighting the crucial role of mediating factors. These insights led to the development of the V-MISC (Visual-Spatial Mediated Integration for Speech Communication) framework, which provides a structured approach to implementing inclusive communication interventions.

Table 6. Analysis of Crucial Mediating Factors Influencing Visual-Spatial Communication Intervention Effectiveness in Malaysian Children with ASD

Elements	Statements
Effectiveness of Visual-Spatial Approaches	The study reveals that while visual-spatial approaches offer valuable support for basic communication development, their effectiveness varies significantly based on individual characteristics and implementation methods. These findings align with recent research by Muhamad Hafiz et al. (2024) suggesting that visual-spatial interventions require careful consideration of both cognitive and affective mediating factors. The observation that some children rely too heavily on visual supports at the expense of verbal communication highlights the need for balanced intervention approaches.
Role of Mediating Factors	The identified cognitive and affective mediators significantly influence intervention outcomes, supporting the theoretical framework's emphasis on bidirectional interactions between personal and environmental factors. Cognitive mediators, including autism severity and developmental level, appear to create differential responses to visual-spatial interventions. This aligns with findings from Russell & Hill (2001) regarding the role of executive functions in language acquisition.

V-MISC Framework Implementation	Based on these findings, the V-MISC framework provides a comprehensive approach to implementing visual-spatial interventions while considering crucial mediating factors. The framework's four components – Visual-Spatial Integration (V), Mediating Factors (M), Integration Strategies (I), and Speech Communication (SC) – offer a structured yet flexible approach to supporting communication development. The framework emphasises: 1. Systematic assessment of individual needs and capabilities. 2. Integration of cognitive and affective support strategies. 3. Progressive skill development through multimodal approaches. 4. Continuous monitoring and adaptation of interventions.

Based on Table 4, the assessment needs to identify the strong point, limitations, and appropriate visual-spatial strategies for each child. Besides integrating cognitive and affective, could give motivation and emotional connection, which could become more affecting and balanced. Through this strategy, the children would face the shift from visual dependence to participatory verbal-visual communication skills. Besides, an increase in public awareness about ASD and beginning structured ASD support group could provide supportive sources for parents and may help them in concerning these challenges and so to deliver enhanced sustenance for families of children with ASD (Chu, Mohd Normal, McConnell, Tan and Joginder Singh, 2018). Therefore, they can approach emotional and psychological support, facilitating parents to handle stress and involving families with appropriate expertise, therapies, and informative resources that can improve their child's development.

Implications for Practice

The findings have several important implications for educational practice:

Table 7. Comprehensive Implications and Practical Recommendations for Educational Practice Implementation in Malaysian Special Education Settings

Practice	Implication
Assessment Practices	The need for comprehensive evaluation of both cognitive and affective factors before implementing visual-spatial interventions.
Intervention Design	The importance of incorporating multiple modalities while maintaining focus on speech development goals.
Support Requirements	The necessity of providing adequate resources and training for educators implementing visual-spatial interventions.

Based on Table 7, through the assessment practices, it clearly stated that the educators need to ensure that intercessions are adapted to each student's known factor needs and developing stage. The same goes to the policymakers, who need access to focused assessments that advise modified involvement

approaches. For intervention design, the educators need to involve visual, hearing, and kinesthetic methods, at the same time continuing a strong importance on speech enhancement targets to prevent over-dependence on non-verbal communication tools. Still, the policymakers should provide funding and proper curriculum guidelines must assist the combination of multimodal teaching strategies. The purpose is to ensure the educators have the funds to apply effective interventions. In support requirements, a proper training to the educators can ensure the methods of teaching is relevant to the student needs. The same to give funding to the educators to attend a good training program and access to beneficial materials in teaching.

CONCLUSION

Consequently, the present research offers an important qualitative understanding of the application of visual-spatial strategies for speech intervention among Malaysian children with ASD. In semi-structured interviews carried out in education settings in Peninsular Malaysia and Malaysian Borneo, our studies found recursive patterns between visual-spatial learning aids and speech processes that are guided by both cognitive and emotive variables. The outcomes provide evidence for the V-MISC (Visual-Spatial Mediated Integration for Speech Communication) framework and note that the enhanced communication intervention is significant with the framework while following a logical structure that is not rigid yet offers structure to support the right approaches to implementation of the SDG 4 initiative.

The results of the study show that, although the visual-spatial approach and PECS help with simple communication, their efficacy in providing helpful speech differs among subjects and methods of application. Of all the intervention variables, and critical importance to intervention outcomes were the cognitive mediators such as the severity of autism, and the child's developmental abilities. Likewise, motivational states, self-confidence, or moods were also crucial influential facets determining the results. Such findings highlight the need to attend to both cognitive and affective factors when designing and delivering communication interventions for children with ASD.

In relation to the current research, it can be concluded that the study presents several significant implications for practice. Next, it underlines the mechanisms of assessment procedures, which require considering both cognitive and affective domains before using visual-spatial teaching arrangements. Other than that, it emphasises the use of simultaneous use of other modes of communication alongside the discrete speech goals. Additionally, the V-MISC framework offers a step-by-step procedure on how the communication interventions can be planned especially for a client with SA but can also be used for other individuals with other needs and in different organisations.

There are a few limitations of this descriptive study that need to be mentioned. This study is based on self-report data, using a small sample size and restricted geography. Studying the long-term effects of the V-MISC framework application and employing observational data collection methods should be active in further research, and the intervention's efficacy should be tested in various communities. In the same way, the examination of other potential mediating variables and their possible interactions could serve as further improvement of the knowledge about the best practices influencing children with ASD.

IEP team members who serve as special education teachers, related service providers, regular education teachers, parents/guardians, administrators, and students can benefit from the practical findings of this study. The results presented here suggest that more fluid and person-centred strategies should be encouraged for children who require communication intervention, with teachers closely monitoring the effectiveness of the intervention and making changes as necessary. Moreover, there should be an encouragement of institutions to resource and train while staying on course on inclusive education.

V-MISC framework principles should be considered by policymakers when retaining education plans and distribution of resources for IEPs. The community support aspect of intervention implementation is emphasized by Muhamad Hafiz et al., (2024), who examined expert perspectives on support systems for families with autistic children in Malaysia. Their research identified societal awareness, support system deficits, and communalism as key themes affecting intervention success, highlighting the importance of holistic approaches that extend beyond the classroom.

In conclusion, to foster children's communicative competence with and without peers with ASD, one cannot proceed without significant knowledge of how the child with ASD and his or her peers work with and develop their visual, verbal, motor and social processes within a child-specific and childappropriate context. Overall, this research opens the V-MISC framework to drawing a range of guidelines for how to correctly implement visual-spatial interventions considering various factors that may affect its efficiency. Concerning Barkley's definition of attention-deficit/hyperactivity disorder this proposal contributes to the evidence-based practice in creating culturally appropriate speech-language services for Malaysian children with ASD to enhance the goals of inclusive education that has been spelt out in the sustainable development goals SDG 4.

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