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Analysis of CICS-Based Inclusive Education: A Study of Inclusive ECE Institutions in Indonesia and Malaysia

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Abstract. This study aims to explore the implementation of inclusive education using the Circle Inclusive Classroom Scale (CICS) in Indonesia and Malaysia. This study is the first comparative CICS-based study in both countries and provides new empirical evidence on the quality of inclusive classrooms in early childhood education. The study employed a mixed-methods approach with a cross-sectional survey design, involving 303 respondents in Indonesia (177 teachers and 126 principals) and 106 respondents in Malaysia (101 teachers and five principals). Data were collected using the CICS scale, supported by an integrated mixed-methods design. This approach focused on collecting, analyzing, and integrating both quantitative and qualitative data within a single study to provide a comprehensive understanding of classroom environments in inclusive education. The findings reveal that, in the physical environment dimension, both Indonesia and Malaysia achieved relatively positive outcomes. In the social environment, both countries demonstrated encouraging progress in fostering positive attitudes, supporting inclusive education, and facilitating inclusive education. However, challenges remain in teachers' competencies in managing children with special needs. In the dimension of structure and routines, Indonesia showed greater strengths in providing creative learning experiences, while

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Malaysia demonstrated stronger consistency in setting expectations and offering challenges for children. To optimize effectiveness, ensure equitable policy implementation, enhance teacher capacity, and sustain investment in inclusive education infrastructure, both countries require these measures. Inclusive education is part of improving the quality of early childhood education and is a forum for children to learn about diversity from an early age.

Keywords: CICS; classroom environment; inclusive education; early childhood education; quality education

1. Introduction

The challenges inherent in implementing inclusive education have not deterred institutions—particularly at the early childhood level—from enrolling children with special needs. Research on the implementation of inclusive education across Indonesia has identified several persistent barriers, including teacher competency, the availability of facilities and infrastructure, curriculum modifications for heterogeneous student populations, assessment procedures, parental involvement, and the extent of cooperation with relevant stakeholders (Kurniawati, 2021; Warman, 2021; Ketikidou & Saiti, 2025). Nevertheless, findings also indicate notable positive developments, especially in Asian contexts such as Indonesia and Malaysia.

These include heightened awareness and understanding of inclusion, growing governmental efforts to both increase the number and enhance the qualifications of educators, and improved accessibility to public facilities for people with disabilities (Long & Guo, 2023; Raines et al., 2023; Long, 2024). Recommendations have been advanced, particularly regarding the regulation of educator professional development, campaigns to raise awareness among subject teachers, increased community engagement, and enhanced funding for inclusive institutions in Indonesia (Triyanto et al., 2023; Rahmatullah, 2025). Parallel research in Malaysia has highlighted challenges related to leadership, organizational management, children's experiences, and learning opportunities—each of which has potential repercussions for existing inclusive education practices (Bailey et al., 2015; Chong, 2016).

Comparative analyses reveal that both Indonesia and Malaysia have adopted inclusion principles in educating children with special needs. Notably, Malaysia has made strides in integrating educational technology, such as mobile applications and assistive devices. The present study offers a comparative perspective on special needs education across both contexts and aims to formulate evidence-based recommendations to improve the efficacy and quality of educational services for children with special needs (Neca et al., 2022; Lindner et al., 2023). The results of research on the implementation of inclusive education in 10 Asian and 2 East Asian countries, including Indonesia as a sample, highlight the ongoing need for improved access for students with disabilities (Singh, 2022).

Physical, social support, and routine structural services for each child can facilitate meaningful learning and positively impact the implementation of inclusive education (Stelitano & Bray, 2020). Various practices in implementing education across countries are influenced by policies, state conditions, and the budget allocated to education. For this reason, a common view of the minimum standards for implementing inclusive education is needed, so that each institution can improve and develop its implementation in ways that are appropriate and considered appropriate to facilitate each child's diversity.

Despite the policy and attention to inclusive education in Southeast Asia, empirical evidence describing the design and management of inclusive learning environments in practice remains very limited. Furthermore, there is no comparative research using a standardized assessment framework, such as the CICS, to assess inclusive early childhood education in Indonesia and Malaysia. This study aims to address this gap by surveying educational institutions, particularly early childhood education institutions that accept children with special needs.

The CIRCLE Inclusive Classroom Scale (CICS) (Renfrewshire, 2023) provides a comprehensive framework for reflection and capacity-building regarding the implementation of inclusive education. This instrument encompasses domains such as the physical environment—including spatial organization, sensory considerations, and visual aids—the social environment, and the structuring of routines. The CICS scale enables holistic evaluation of individual learners' needs by assessing ability alongside environmental factors that foster readiness and engagement. For instance, children's seating preferences vary—some may prefer seating near walls or exits for observation or comfort, while others prefer seating in the center. To mitigate stress and enhance organization, especially for students requiring additional support, a high degree of predictability, structure, and routine is widely recognized as effective.

Within this context, the CICS serves as an essential preliminary tool for both classroom planning and individualized assessment. An inclusive early learning environment is characterized by practitioners who systematically integrate key supports and strategies into daily practice. Such strategies emphasize the customization of physical and social environments, the establishment of well-designed structures and routines, and the implementation of learner-centered instructional approaches that promote motivation and engagement (Lee & Lee, 2021; Suparno et al., 2022; Alnahdi et al., 2024; Goyibova et al., 2025).

Despite these advances, there remains a shortage of comprehensive information on the implementation of inclusion in accordance with established standards. Utilizing the CICS enables educators and policymakers to identify elements of current practice that are effective and those requiring further development, thereby informing targeted improvements in inclusive education delivery (Maciver et al., 2020; Parker & Bickmore, 2023). The findings of this study thus have the potential to shape policy and practice, guiding enhancements to the processes underpinning inclusive education in both Indonesia and Malaysia.

A substantial body of research – spanning Asia and Europe – continues to grapple with policy development and the myriad challenges associated with the realization of inclusive education (Maciver et al., 2021; Losberg & Zwozdiak-Myers, 2024). Nonetheless, in-depth analyses of the concrete impacts of inclusion on teaching, learning, and classroom dynamics for all students remain limited.

The application of the Inclusive Learning Environment Scale, particularly in early childhood education settings in Indonesia and Malaysia, is not yet widely established as an analytical tool for evaluating inclusion. This study's utilization of the CIRCLE Inclusive Early Learning Environment Scale (CICS) is intended to provide a comprehensive overview and to address key questions, including: how do teachers perceive and operate supportive environments in inclusive education? Furthermore, how is inclusive education implemented and assessed in early childhood education in Indonesia and Malaysia through the lens of the inclusive education framework?

2. Literature Review

2.1 Inclusive Education in ECE

Inclusive education is an approach that places all learners, including those with special needs, within the regular education system while providing adequate support to enable their full participation. This concept is rooted in the principles of human rights, social justice, and the Sustainable Development Goals (SDG) 4, which emphasize access to quality education for all children without discrimination.

In practice, inclusion is not merely about physical placement but also about ensuring access, participation, and meaningful learning outcomes (Nelson & Kauffman, 2025; Mihajlovic, 2025). Inclusion must be understood as a dynamic process that removes barriers to learning through curriculum adaptation, responsive pedagogical strategies, and cross-sectoral collaborative support. This understanding shifts the traditional perspective that focused solely on integrating students into regular classrooms without addressing the quality of support provided (Navas-Bonilla et al., 2025).

The conceptual framework of this study positions inclusive education policies and macro-level resource allocation as determinants of teachers' professional capacity and school infrastructure at the meso level (Duke et al., 2016; Woulfin & Jones, 2024). Teacher capacity, in turn, shapes the implementation of Universal Design for Learning (UDL), differentiation, and the use of educational technology in classrooms (at the micro level), thereby affecting student participation and learning outcomes. Moderating factors that require attention include access to technology, school culture, and family support.

Inclusive education in early childhood plays a crucial role in helping children learn about diversity from an early age (Love & Horn, 2018). Studies of inclusive early childhood education models have highlighted that the key to inclusive education lies not only at the teacher level but also at the child, family, government, and community levels (Nelis et al., 2023). The foundation of

development lies in early childhood, so interventions for developmental disorders and obstacles are more effective and optimal during this period.

Research shows that children with special needs who receive inclusive interventions and services early on demonstrate greater progress in language, social-emotional, cognitive, and independence skills than those who receive them later (Lee et al., 2015; Kuutti et al., 2022; Sheppard & Moran, 2022). Furthermore, inclusive education practices at an early age are crucial to ensure that every child, including children with special needs and children from diverse backgrounds, has a fair opportunity to develop (Hanafi et al., 2023; Pratiwi et al., 2024; Raguindin, 2025). It is crucial to analyze and evaluate the implementation of inclusive education services to ensure optimal service delivery.

2.2 The CIRCLE Inclusive Early Learning Environment Scale (CICS)

Inclusive spaces depend on the physical and social environments, as well as structures and routines. All these factors influence learners' motivation, organization, and participation. Given the multidimensional nature of environments, their impact can vary either positively supporting learners or negatively hindering their participation.

The CIRCLE Inclusive Early Learning Environment Scale (CICS) (Renfrewshire, 2023) provides benchmarks for evaluating how these environmental aspects affect learners. CICS enables institutions to assess each component, thereby facilitating the identification of existing practices and those that remain underdeveloped and require further improvement.

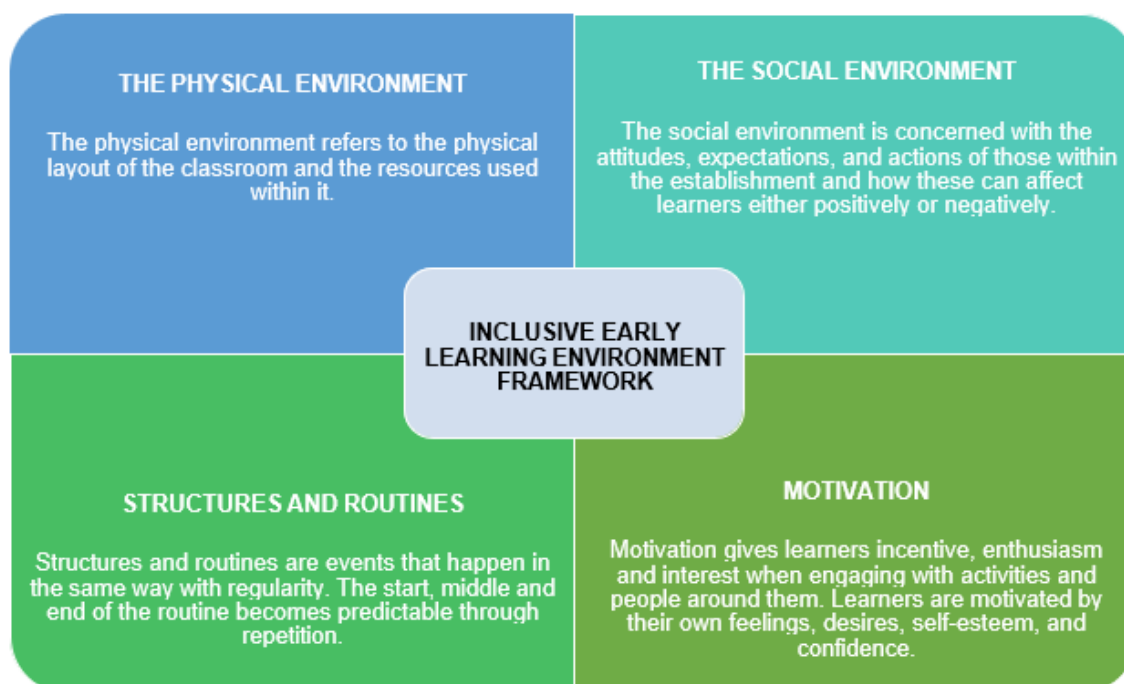


Figure 1: Inclusive Early Learning Environment Framework

The CICS consists of three assessment tables: one assessing the physical environment, one assessing the social environment, and one assessing the school's structure and routines. Physical environmental support and availability include accessibility, adequate space, sensory space, visual support, and equipment availability. Social environmental support and availability include staff and peer attitudes, expert and staff support and facilities, social relationships and interactions, information provision, and empowerment. Structure and routines are measured through levels of participation, standards and boundaries, and the attractiveness of experiences and routines.

Maciver (2021) conducted research using the CICS to analyze the needs of children in inclusive classrooms specifically. The use of this Circle will provide a foundation for developing teachers' knowledge and skills to support the provision of educational services to children during their time at school.

3. Methodology

This research adopted a quantitative approach, using a survey as the primary method of data collection, while the qualitative data were collected through a cross-sectional survey. Survey research designs are procedures in quantitative research in which investigators administer a survey to a sample or to the entire population to describe the population's attitudes, opinions, behaviors, or characteristics. In cross-sectional surveys, data are collected from a sample of a predetermined population. Qualitative data from interviews and observations on inclusive ECE in Malaysia and Indonesia will be analyzed using thematic analysis.

3.1 Data Source and Materials

In line with the two research questions listed in the previous section, the proposed study will collect data and information on teachers' understanding of environmental support in inclusive education and on the analysis of the implementation of inclusive education using CICS in early childhood education in Indonesia and Malaysia. The information will also be generated from the school's documentation and publications.

Initially, data collection will be conducted using the CICS scale. A series of CICS scale administrations and virtual interviews with teachers and staff will follow this. An on-site administration survey will be conducted to the extent necessary accommodation is provided. Indirect observation via video conferencing will be carried out as an alternative if accommodation needs are insufficient.

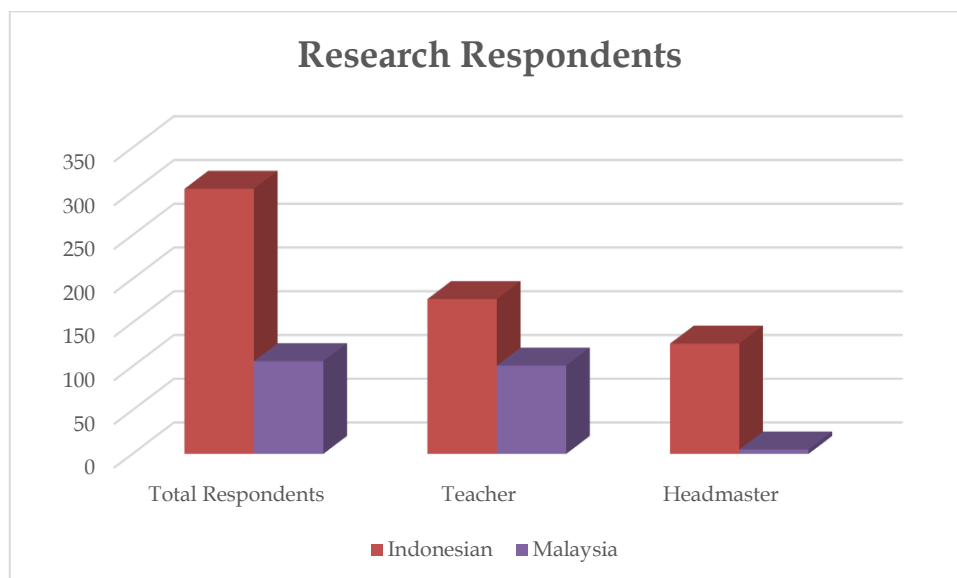


Figure 2: Research Respondents

Sampling in this study was conducted using a purposive sampling technique stratified based on administrative region. The Indonesian sampling frame was obtained from the National ECE Central Data from the Ministry of Primary and Secondary Education, as well as the ECE Directory, which contains approximately 1,250 inclusive ECE institutions that accept children with special needs. Meanwhile, the Malaysian sampling frame was obtained from the ECCE Directory of the Ministry of Education and Culture of Malaysia and JKM, comprising approximately 310 institutions.

This research instrument was given to institutions that provide services for children with special needs and have teachers and principals willing to complete the CICS instrument. Principals and teachers were involved in this study because they are directly involved in providing support and the implementation process in schools. The total number of respondents willing to complete the instrument in this study was 409, comprising 303 from Indonesia and 106 from Malaysia. Schools with locations as per the researcher's provisions continued the observation and interview process to cross-check the data collected through the previously conducted survey.

3.2 Data Analysis

The research method used is a mixed concurrent embedded research method. Mixed-methods research focuses on collecting, analyzing, and integrating quantitative and qualitative data within a single study or a series of studies. The central premise is that combining quantitative and qualitative approaches provides a better understanding of the research problem than either approach alone (Creswell & Creswell, 2017). Once collected, the materials will be classified and analyzed based on their nature. The data have been analyzed in Microsoft Excel to determine the scores and percentages of practices that are currently good and those that still need development. Interviews and supporting documentation will strengthen data from the CICS scale. The document-based information will

be analyzed using content analysis. The data and information gathered through interviews and observations will be analyzed using thematic analysis.

4. Results and Findings

Inclusive environments rely on physical setting, social context, and established systems and practices. Each of these elements affects learners' motivation, organization, and involvement. Due to the diverse aspects of the environment, the effect may vary whether it can either enhance learners' engagement or hinder their participation.

In practice, it will examine what happens and is practiced in and by inclusive early childhood education in Indonesia and Malaysia, using these countries as a guide for implementing inclusive education in accordance with established standards. Using the CICS Scale, it can identify areas of practice that are currently strong or still need development, as well as the improvements needed to implement inclusive education. In addition, the results of this study will later help inform policy improvements and changes in the implementation of inclusive education in Indonesia and Malaysia.

Here are the findings of a survey on inclusive environments carried out in Indonesia and Malaysia.

4.1 Part I: Physical Environment

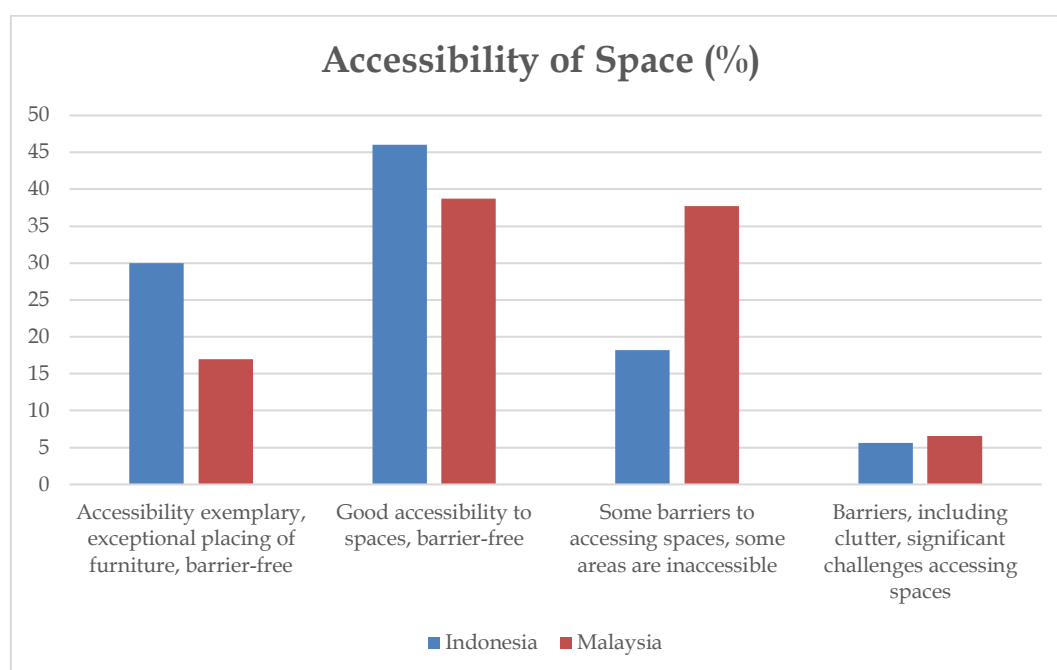


Figure 3: Accessibility of Space

Based on Figure 3, the physical environment in Indonesia demonstrates generally good accessibility with minimal barriers. The physical setting that supports inclusive education in Indonesia has shown considerable progress, particularly in accessibility that welcomes all, including children with special needs, in early

childhood education. Several studies report that schools and early childhood education centers (ECEs) in Indonesia have begun implementing the principles of Universal Design for Learning (UDL), paying attention to access pathways, lighting, flexible classrooms, and the provision of mobility aids (Ramadhan & Fauzi, 2023; Mansur et al., 2023; Muzdalifah et al., 2025). This reflects a commitment to upholding the right of every child to education free from physical barriers. Overall, such facilities enable children with special needs to actively participate in the teaching and learning process. Nevertheless, challenges persist in remote areas or regions that have yet to receive equitable policy attention (Rahmatullah, 2025).

In Malaysia, early childhood education institutions have also made significant efforts to provide inclusive physical environments. Generally, these institutions offer good accessibility, including wheelchair-friendly pathways and disability-accessible toilets. The adoption of MS 1184: Code of Practice on Access for Disabled Persons to Public Buildings underscores efforts to ensure equal access (Abd Samad et al., 2021). However, despite the availability of physical infrastructure, barriers persist in inclusive classrooms. Research indicates that many classrooms have not been fully adapted to the needs of children with disabilities—for instance, limited classroom space, a lack of adaptive learning aids, and insufficient arrangements to support both individual and group activities.

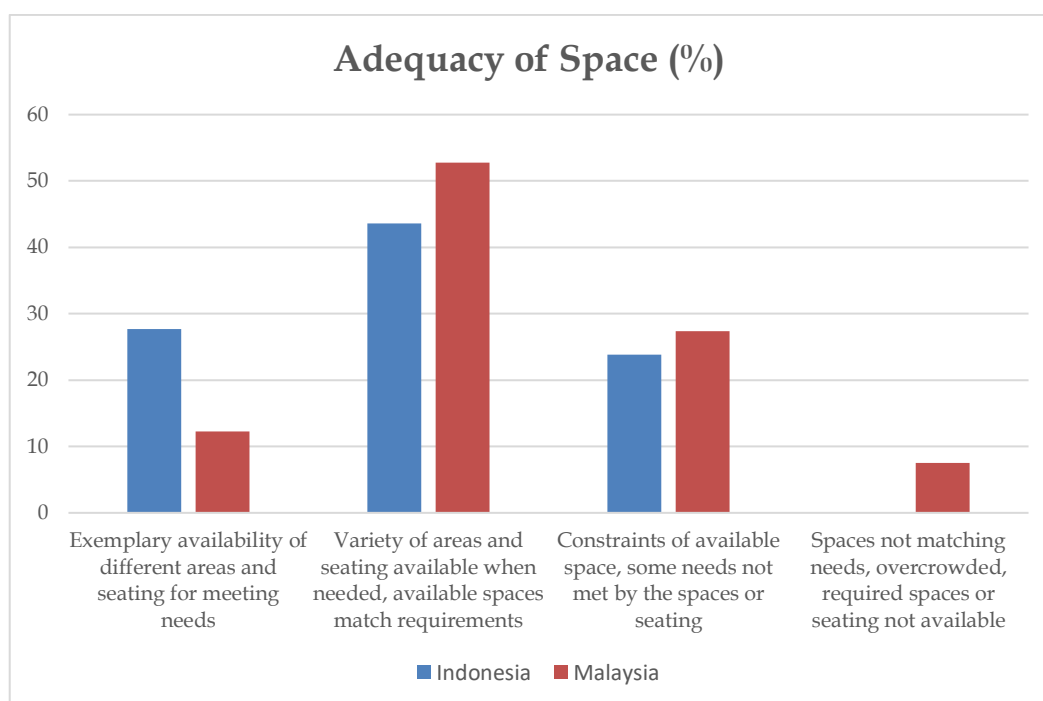


Figure 4: Adequacy of Space

The physical condition of classrooms in early childhood education institutions in Indonesia and Malaysia indicates that, in general, a variety of learning areas and seating arrangements have been adapted to meet children's needs, including those of children with special needs. In Indonesia, many institutions have

adopted principles of spatial flexibility and child-friendly furniture, such as height-adjustable tables and chairs, as well as safe play areas. These practices reflect an individualized learning approach that has increasingly shaped inclusive education. Cheung et al. (2023) reported that diverse learning areas, including sensory exploration spaces, reading corners, and gross motor activity areas, have been implemented in several inclusive early childhood education institutions to respond to learner diversity.

Nevertheless, despite these commitments, many institutions highlight limited classroom space as a significant challenge. Spatial constraints affect the flexibility of classroom arrangements, the management of small groups, and the provision of personal space for children with special needs who require less-crowded or less-noisy environments. Similar challenges are also evident in Malaysia, where early childhood institutions are generally equipped with thematic learning areas and adjustable seating. Research by Ackah-Jnr & Danso (2019) shows that the majority of classrooms have been furnished with child-friendly tables and chairs that are also accessible to children with disabilities.

However, institutions in Malaysia have similar barriers, using another term, report similar barriers; many teachers and administrators feel that the limited classroom size makes it challenging to arrange spaces optimally for inclusive purposes. Classrooms often need to be divided among play areas, group learning zones, and spaces for individual interventions. However, the available space is frequently insufficient to guarantee both comfort and safety for all children.

Therefore, in both Indonesia and Malaysia, the availability of appropriate learning areas and seating arrangements represents an important achievement in supporting inclusive education. However, to achieve optimal effectiveness, further efforts in classroom design and infrastructure investment are required, particularly to expand and adapt spaces to the evolving needs and number of children.

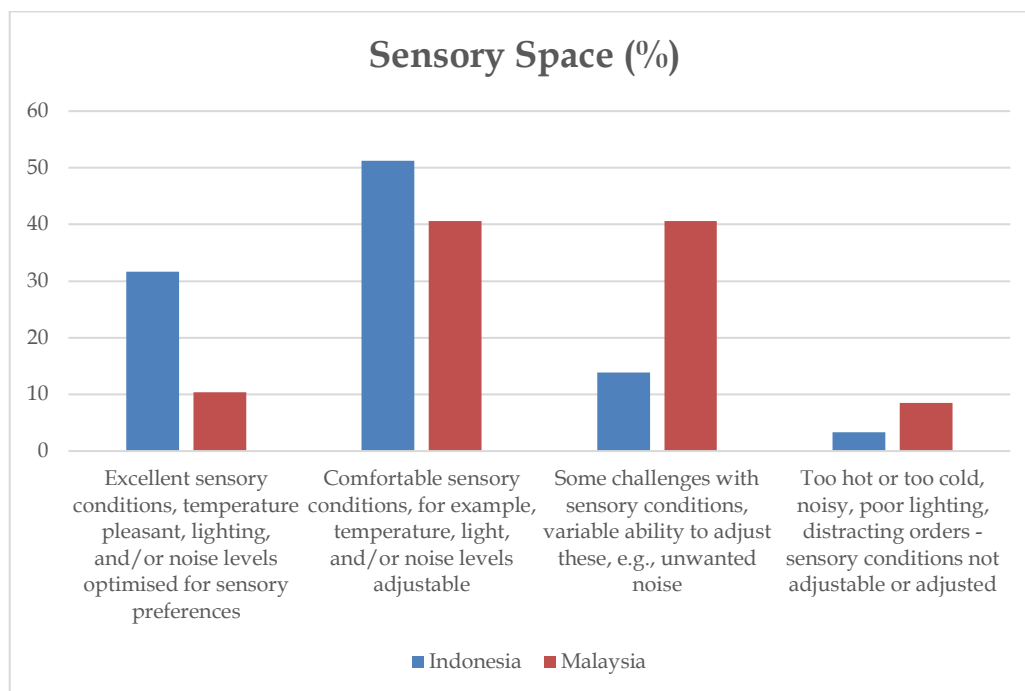


Figure 5: Sensory Space

Institutions in Indonesia generally provide sensory rooms with adequate conditions, including adjustable temperature, lighting, and noise levels. In Malaysia, while some institutions have achieved satisfactory sensory conditions, many still report significant challenges in fulfilling sensory room requirements. Sensory spaces are a critical component in supporting inclusive learning processes in early childhood education, particularly for children with special needs such as autism, ADHD, or other sensory processing disorders (Unwin et al., 2022; Marwati et al., 2023).

In Indonesia, the development of inclusive early childhood education institutions demonstrates a growing awareness of the importance of sensory rooms as an element of a responsive learning environment. Several institutions now offer sensory rooms with well-designed features, including comfortable temperature settings, adjustable lighting (such as dimmable lights or natural light), and noise control to create a calming atmosphere for children (Love & Horn, 2021; Patel et al., 2022).

In contrast, although some institutions in Malaysia have incorporated sensory rooms into their child-centered learning strategies, many educators and administrators note that limited funding, space, and teacher training hinder the optimal availability and use of these facilities. Persistent barriers – including high noise levels, unstable room temperatures, and inadequate lighting – continue to impede efforts to create supportive sensory environments for children.

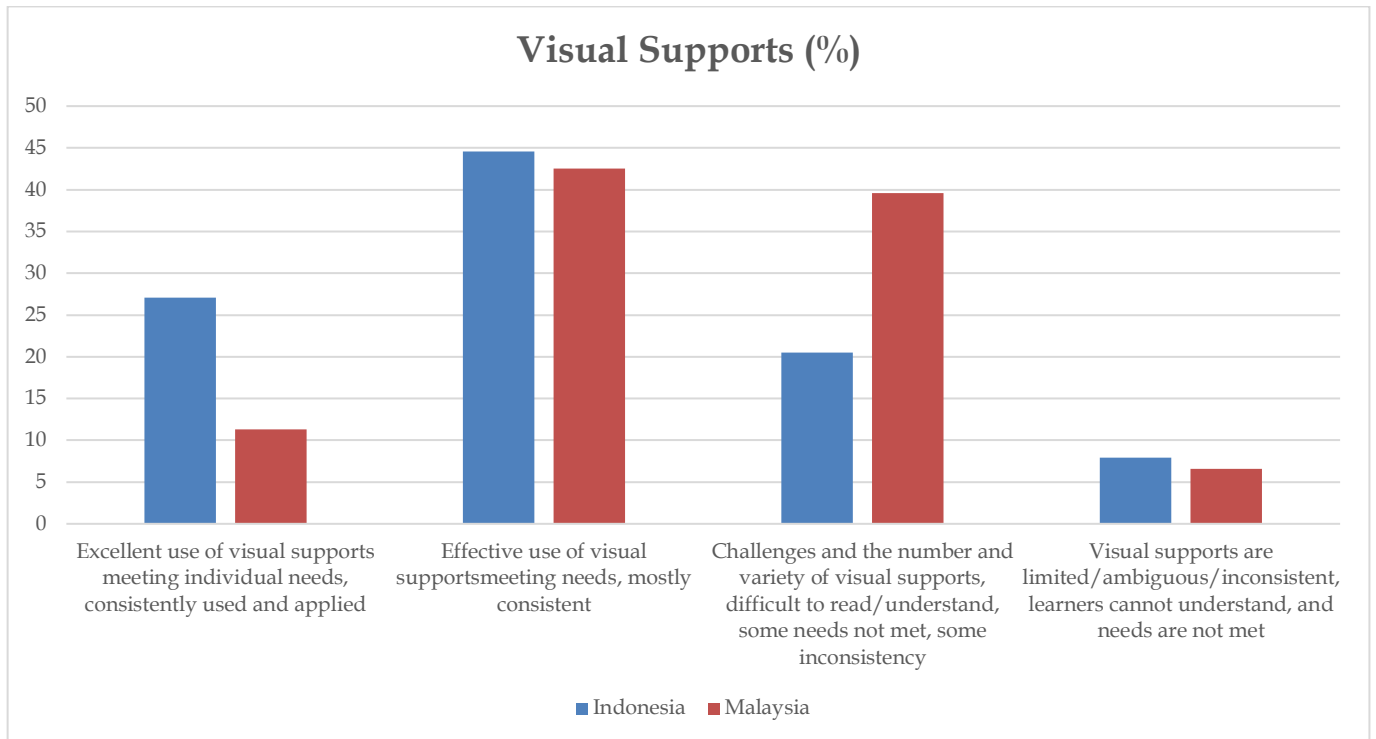


Figure 6: Visual Supports

Visual support refers to the use of appropriate visual aid within the learning environment to address students' needs. Conditions vary, but visual support is generally implemented consistently. Malaysia demonstrates similar trends to Indonesia; however, a larger proportion of institutions in Malaysia report limitations and inconsistencies in the provision of visual support compared to Indonesia. Visual aids are most impactful when used regularly and incorporated across different contexts (classroom, home, and transitions between tasks).

When utilized infrequently or in a singular situation, their efficiency is diminished (French et al., 2020; Alali & Al-Barakat, 2023). Numerous studies highlight that visual aids must be customized to meet each child's unique requirements, capabilities, and preferences (e.g., comprehension level, sensory preferences). In research on visual supports at home, parents note that "not every approach is suitable for all children" and that trying different methods is essential to identify the most effective ones (Rutherford et al., 2023).

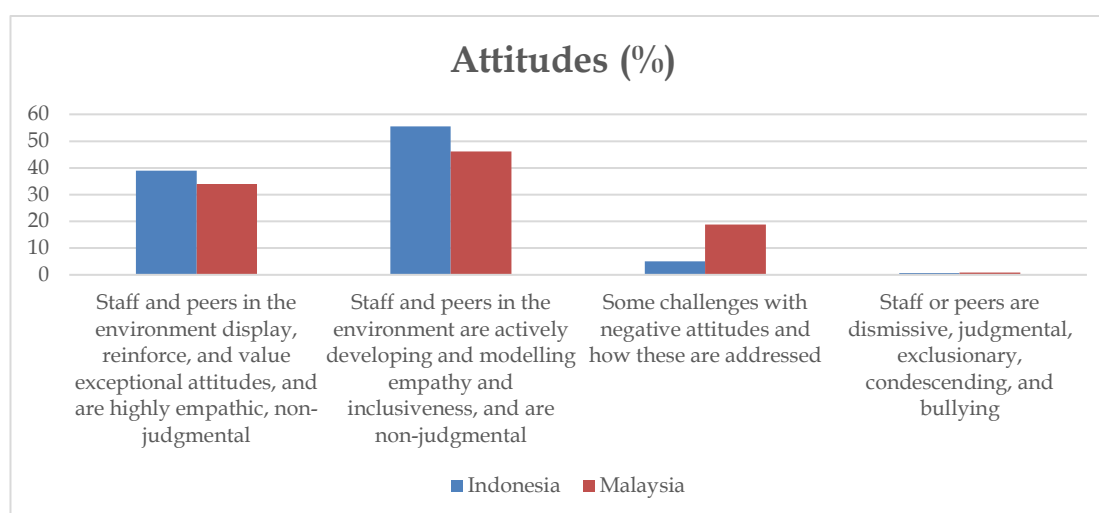
Table 1: Availability of Objects

Question	Indonesia	Malaysia
Availability of objects exemplary, storage in proximity, objects match to characteristics/needs/cultures of learners, independently accessible, well maintained	26.7%	22.6%
Ease of access to all needed objects when desired, storage adequate, matched to personal characteristics and needs of learners, and well-maintained	43.2%	43.4%
Challenges accessing objects, variable storage, and some objects not matched to the personal characteristics or needs of learners	16.5%	27.4%
Some objects are not available, objects are not accessible, objects are not adequate for personal characteristics or needs of learners, or poorly maintained	13.5%	6.6%

The availability of equipment aligned with students' needs in Indonesia and Malaysia tends to be comparable overall. Both countries provide relatively easy access to appropriate materials and adequate storage that responds to learner requirements. Nevertheless, Indonesia has more institutions without access to educational equipment than Malaysia.

Based on these findings, a comparison between Indonesia and Malaysia reveals that, despite both countries' commitment to inclusive education and the general provision of adequate physical environments, key challenges remain in the detailed implementation within classrooms and the equitable distribution of infrastructure quality (Ackah-Jnr & Danso, 2019; Ng, 2021). Therefore, improving physical environments should incorporate not only accessible entry to institutions but also functional, adaptive learning spaces (Zhu et al., 2016; Kariippanon et al., 2020), which are crucial to the success of inclusive education in both countries.

4.2 Part II: Social Environment

**Figure 7: Attitudes**

Overall, the data indicate that the social environment in inclusive education institutions in Indonesia and Malaysia is generally conducive and characterized by predominantly positive attitudes. Nevertheless, Malaysia faces greater challenges in overcoming negative attitudes, whereas Indonesia shows advantages in the proportion of staff and peers actively fostering empathy and inclusive dispositions. Therefore, strengthening attitude-building programs, empathy training, and anti-discrimination strategies remain essential in both countries to foster a more inclusive and supportive learning environment.

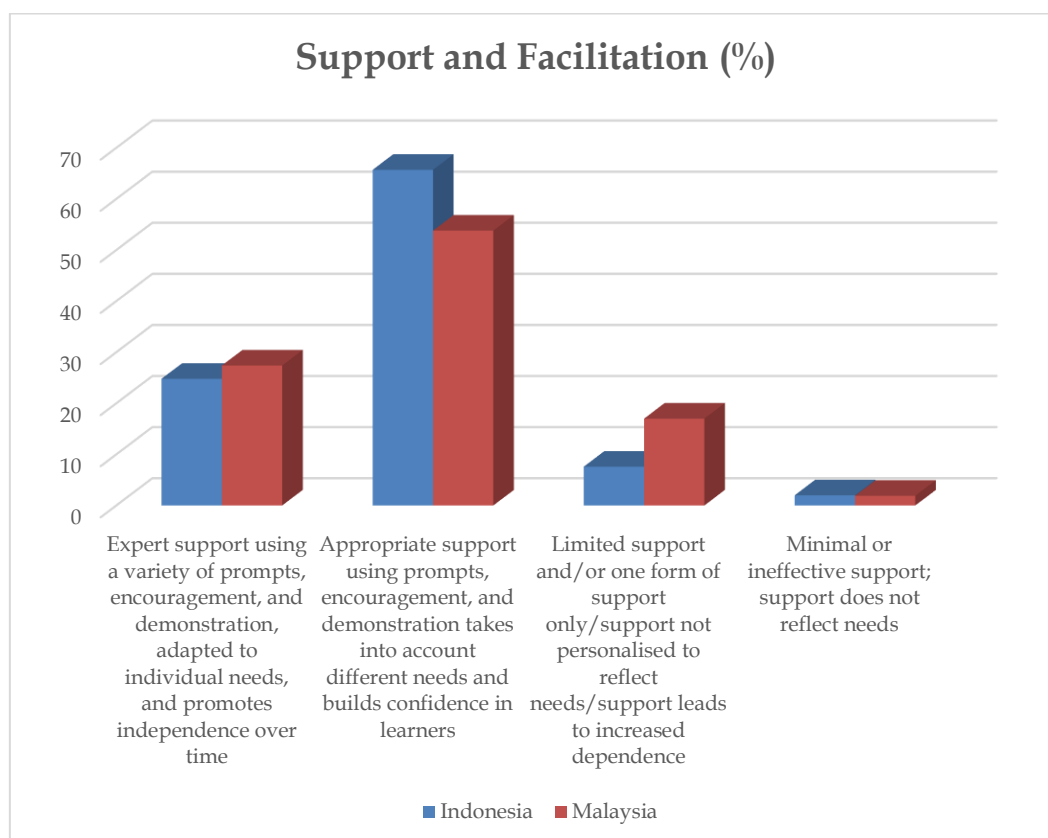


Figure 8: Support and Facilitation

In terms of support and facilities, institutions in Indonesia and Malaysia are similar. Institutions have provided appropriate support through guidance, encouragement, and demonstrations, taking into account individuals' varying needs and fostering learners' confidence. This data indicates that the social atmosphere in inclusive educational settings in Indonesia and Malaysia is pretty supportive, featuring a predominant number of positive attitudes. Nevertheless, Malaysia faces greater challenges in changing negative perceptions, whereas Indonesia benefits from a higher proportion of employees and colleagues who promote empathy and inclusive mindsets.

Therefore, enhancing attitude development programs, empathy initiatives, and anti-discrimination measures are essential elements that must be consistently advanced in both nations to foster a more inclusive and supportive educational atmosphere (Jia et al., 2024)

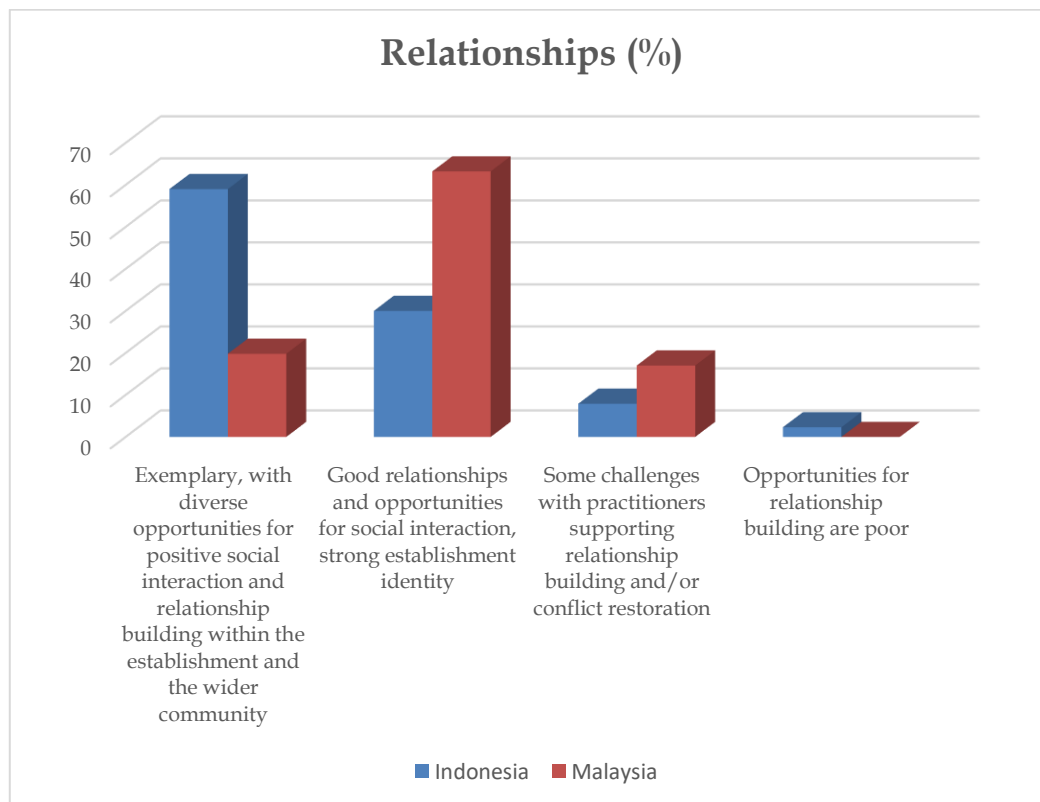


Figure 9: Relationships

Social relationships within Indonesian early childhood education institutions are generally well established, supporting positive social interactions both within the institutions and the broader community. In Malaysian institutions, most relationships and opportunities for social interaction are adequate, and institutional identities are strong.

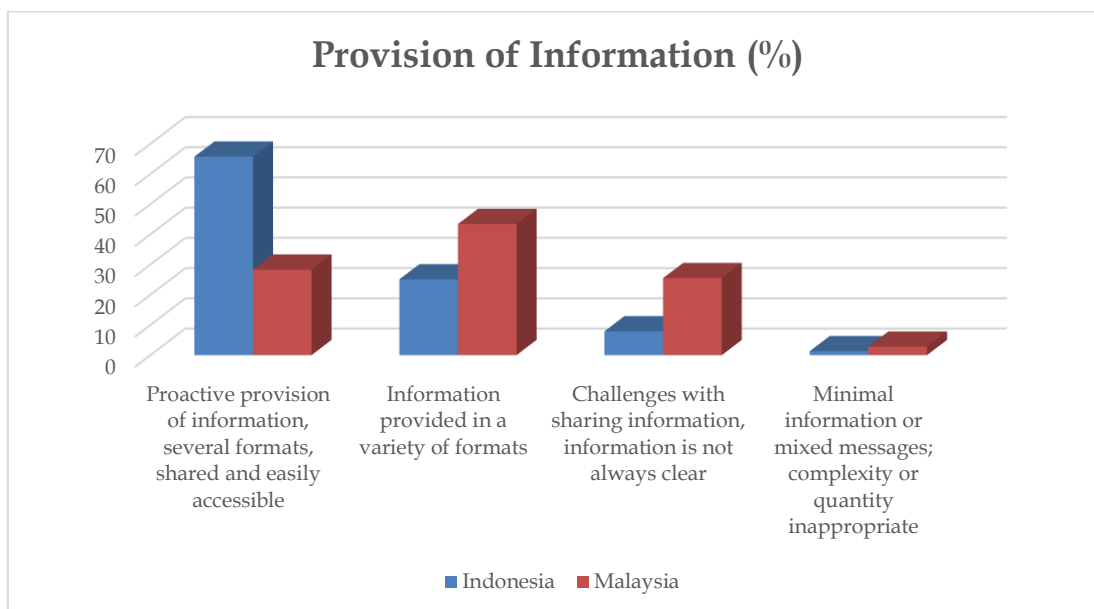


Figure 10: Provision of Information

Regarding the provision of proactive information, 65% of institutions in Indonesia offer information in multiple formats that is readily shared and easily accessible to parents and students. In Malaysia, 43.4% of institutions have provided information in various formats for parents and learners.

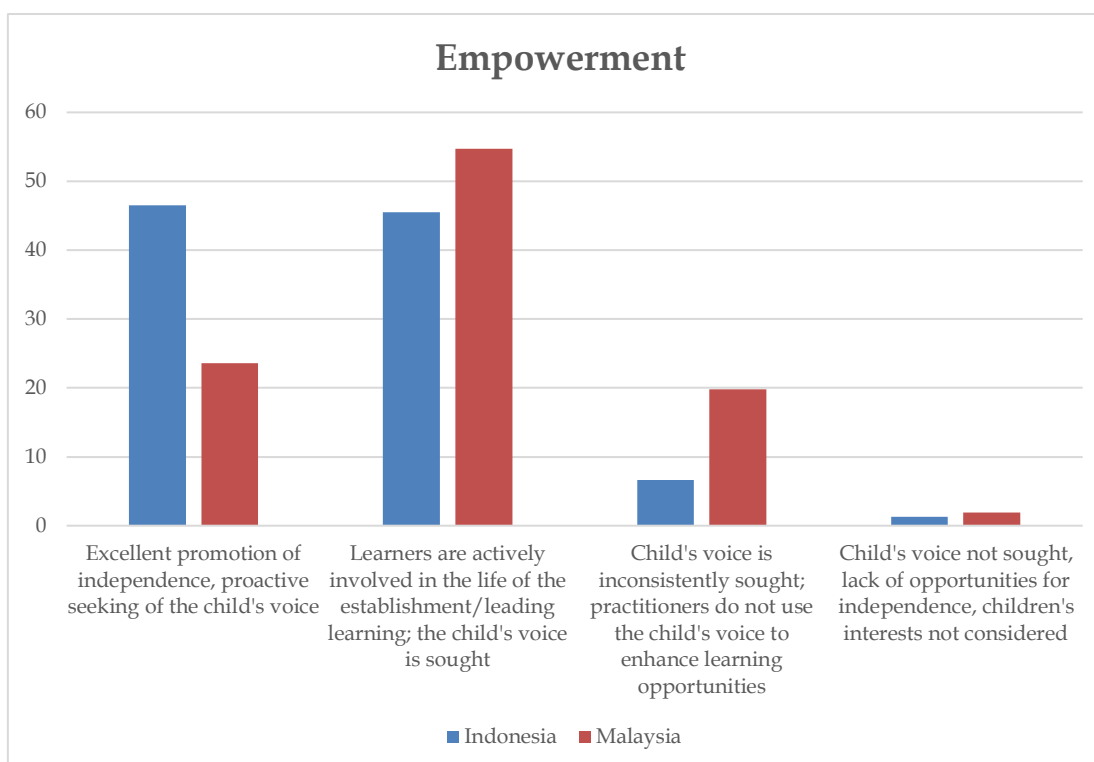


Figure 11: Empowerment

The data in Figure 11 show that 46.5% of institutions in Indonesia have strongly encouraged independence and have proactively listened to children's opinions.

In Malaysia, 54.7% of institutions have offered opportunities for students to be actively involved in institutional life or to lead learning; their voices are heard. This is further supported by interview data from Malaysian teachers, reinforcing the survey findings:

"Teachers make various efforts to create a comfortable social environment for children, such as reflecting on student feedback." (WN, participant)

"I often reflect on my practice with the school counsellor, the discipline teacher, and fellow Bahasa Melayu (Malay Language) or Cultural Club teachers." (DF, participant)

In summary, regarding the social environment, Indonesia excels in positive attitudes, appropriate support, broad social relationships, and proactive information provision. Malaysia is notably stronger in consistently involving students in institutional life, yet faces challenges with negative attitudes, limited individual support, and clear information dissemination. Both countries have significant potential to foster inclusive social environments. Strengthening empathy, offering more personalized support, and empowering student voice are crucial strategies to create truly supportive, inclusive, and participatory learning environments (Cook-Sather, 2020; Agbenyega & Klibthong, 2025).

4.3 Part III: Structures and Routines

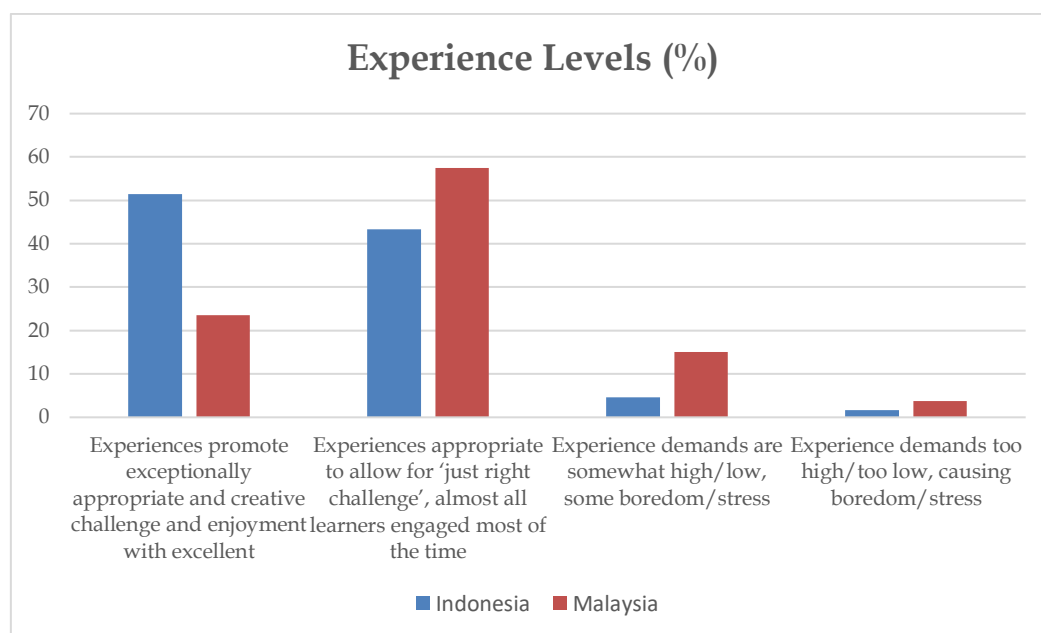


Figure 12: Experience Levels

A total of 51.5% of institutions in Indonesia have provided learning experiences that balance challenge and enjoyment, fostering high student participation. In Malaysia, 57.5% of institutions offer suitably engaging experiences that present appropriate challenges, with nearly all students frequently participating. These findings indicate that more than half of educators and education personnel have

begun implementing differentiated instruction, adjusting teaching processes, content, and methods based on students' needs, interests, and readiness levels. Adapting and modifying activity formats are also necessary to facilitate play and learning activities for every child, including those with special needs (Almulla et al., 2025).

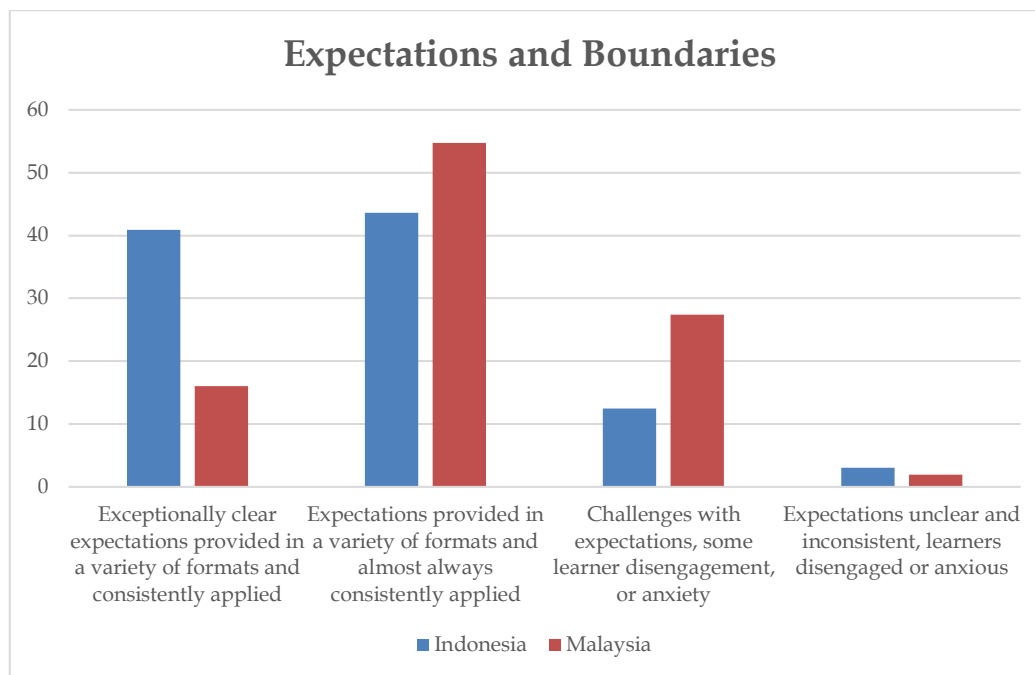


Figure 13: Expectations and Boundaries

Based on Figure 13, Indonesia generally stands out for obvious and consistent expectations, while Malaysia is stronger in the category of reasonably clear but less consistent expectations. This suggests that Indonesia tends to emphasize firmness and clarity of rules, whereas Malaysia occupies a middle ground and still requires reinforcement of consistency. Inclusive education policies, teacher preparedness, and school culture in each country may influence these differences. Establishing clear, structured, and consistent expectations and boundaries is essential to creating a safe, supportive, and inclusive environment that encourages children's engagement. By applying contextually relevant strategies, both countries have the potential to achieve more balanced educational practices—namely, expectations that are clear, consistent, and capable of sustaining students' emotional involvement.

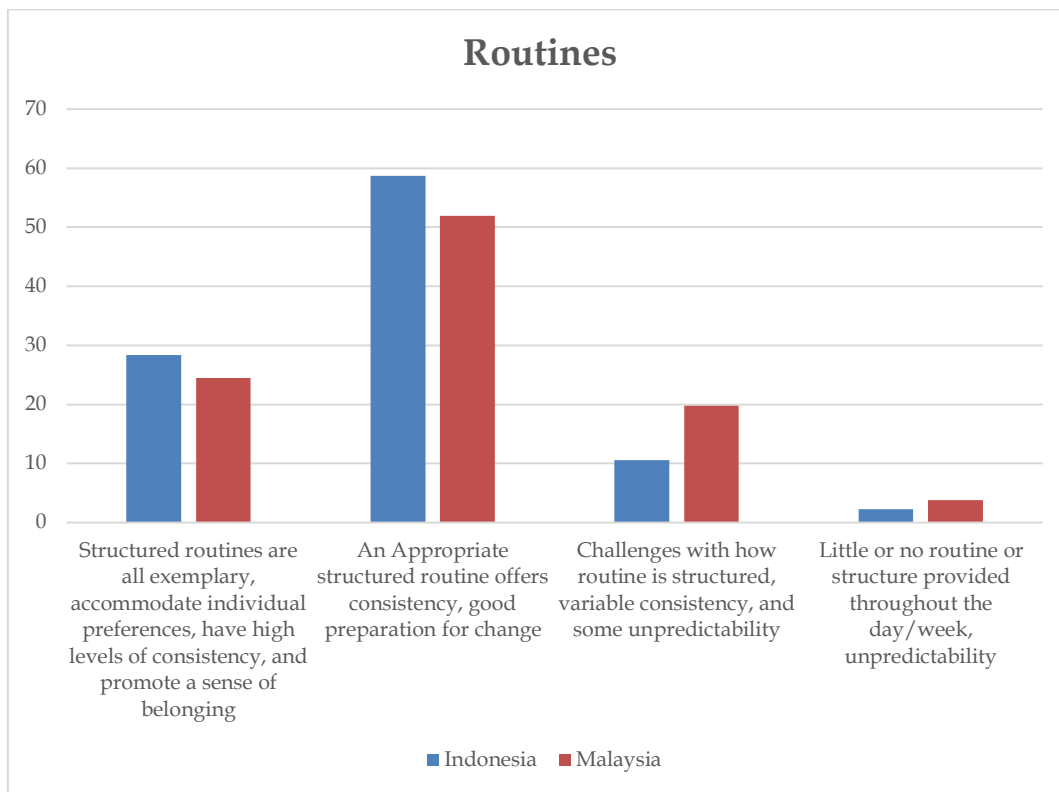


Figure 14: Routines

Conditions in Indonesian and Malaysian institutions are generally similar in this aspect. Most institutions have implemented well-structured routines, offering consistency and good preparation for transitions. Individual student assessment can provide learning experiences tailored to children's needs.

"To understand individual learners better, I conduct ongoing informal assessments, classroom observations, and maintain open communication with students, parents, and the school counsellor." (DF, participant)

This statement underscores the importance of continuous assessment and open communication in designing routines that align with individual needs (Kasari et al., 2018). Accordingly, structured routines not only ensure stability but can also serve as a means of adapting the learning experience to each learner's unique needs and characteristics.

5. Discussion

Research findings indicate that the implementation of inclusive education in Indonesia and Malaysia has shown relatively positive outcomes, despite variations across different aspects. In the domain of the **physical environment**, Indonesia stands out for spatial accessibility, the adequacy of learning areas, sensory conditions, and the consistency of visual support. These findings are consistent with Gopan (2025), who emphasized that barrier-free and sensory-friendly design is essential for enhancing children's participation in inclusive learning environments. Conversely, Malaysia continues to face significant challenges, particularly regarding spatial accessibility (37.7%) and sensory

conditions that cannot always be regulated (40.6%). This highlights the need for practical interventions, such as spatial zoning, the provision of calm corners, and acoustic and lighting management, to optimize learning comfort.

Social environmental aspects in both countries have also shown positive developments in attitudes, support, and facilitation. Most staff and peers in Indonesia and Malaysia exhibit empathy and a non-judgmental stance. However, Malaysia reports a higher incidence of negative attitudes (18.9% versus 5% in Indonesia). This is consistent with Khairuddin & Miles (2020), who found that many teachers, staff, and parents in Malaysia remain unreceptive to individual differences and inclusive settings, primarily due to limited skills in addressing the needs of children with special needs.

Educator support is relatively strong in both countries, in line with embedded instruction practices (Gulboy et al., 2023), which have proven effective in promoting children's independence. In terms of social relationships, Indonesia is ahead, with 59% of respondents rating opportunities for social relationship-building as "exemplary," compared to 19.8% in Malaysia. This underscores the importance of restorative practices for improving the quality of social interaction in school environments (Mas-expósito et al., 2022; Perrella et al., 2024).

In terms of structure and routines, Indonesia excels at providing creative learning experiences (51.5% "exemplary") and at exceptional clarity in expectations and boundaries (40.9%). Malaysia, on the other hand, shows greater strength in delivering appropriate challenges and in maintaining consistent expectations (54.7%). Well-structured routines are characteristic of both countries, though there is still room for improvement in accommodating individual preferences. Consistent yet flexible routines are confirmed by studies (Jhuo & Chu, 2025; Orhan et al., 2024; Wallo et al., 2024) to be critical for successful inclusive preschool education. Overall, this research shows that Indonesia tends to be stronger in physical and relational aspects, while Malaysia excels in structural consistency. This suggests that both countries possess complementary strengths that can be leveraged to enhance inclusive education practices.

The practical implications derived from this study underscore the critical need for collaborative strategies that unite educators, policymakers, and community stakeholders, particularly to fortify the physical, social, and structural dimensions of inclusive education in Malaysia. At the same time, Malaysia may benefit from adopting effective spatial management, sensory regulation, and social relationship frameworks already established in Indonesia. Such reciprocal, contextually tailored collaboration stands to enhance the overall quality of inclusive education in both countries, fostering equitable, sustainable, and responsive environments that meet the diverse needs of all learners.

6. Conclusion

A descriptive analysis of inclusive education practices in Indonesia and Malaysia, conducted using the CICS Scale, provides a comprehensive overview of how both countries implement inclusive values in early childhood education settings. The

results indicate that each context has distinct areas of strength, with Indonesia excelling in spatial accessibility, the use of visual and sensory supports, and the fostering of positive relationships. Malaysia, on the other hand, demonstrates a more substantial alignment between clear instructional expectations and the provision of appropriate learning activities that challenge students with diverse needs. These patterns directly address the research question by illustrating how the environmental, structural, and relational components of inclusive education are implemented differently in their respective education systems.

Similarly, persistent gaps, such as the persistence of physical and sensory barriers in Malaysian settings and the limited availability of instructional resources in Indonesia, indicate where both systems need to strengthen their efforts. Overall, these findings confirm that effective inclusion is not solely determined by the physical environment but rather the result of a sustained commitment to policy, adaptive teaching, and professional capacity development. This study emphasizes that realizing inclusive early childhood education requires a sustainable, integrated strategy that balances structural readiness, social responsiveness, and pedagogical competence. Achieving optimal outcomes requires the equitable implementation of policy, continuous professional development for educators, and sustained investment in inclusive education infrastructure across both nations.

7. Conflict of Interest

There is no conflict of interest in this research

8. Acknowledgments

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