Teaching Deaf Students in Polytechnic Malaysia: Identifying Constraints Faced by Educators

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ABSTRACT

Inclusive education has gained significant attention in Malaysia, yet its implementation within technical and vocational institutions remains underexplored, particularly for students with hearing disabilities. This qualitative study investigates the constraints faced by educators teaching deaf students in one Malaysian Polytechnic. Using a phenomenological approach, semi-structured interviews were conducted with three lecturers who have experience teaching deaf students. Thematic analysis revealed four major challenges: (1) language and communication barriers, (2) inadequacy of instructional materials, (3) memory and retention difficulties, and (4) emotional sensitivity of deaf students. Although one educator demonstrated proficiency in Bahasa Isyarat Malaysia (BIM), the others had limited fluency, which affected content delivery and student engagement. Additional challenges included English-only teaching materials, inappropriate visuals, lack of post-class resources in sign language, and unaddressed emotional needs. The study underscores the gap between inclusive education policy and classroom practice and calls for systemic reforms in teacher training, curriculum adaptation, technological support, and emotional care. These findings offer valuable insight into the lived experiences of educators and contribute to efforts toward building more inclusive and effective polytechnic learning environments.

Keywords: inclusive education, deaf students, Bahasa Isyarat Malaysia (BIM), teacher challenges, technical and vocational education

INTRODUCTION

Inclusive education is a global movement that emphasizes equal learning opportunities for all students, regardless of physical, sensory, or cognitive differences. In Malaysia, this commitment is embedded in policies such as the Persons with Disabilities Act 2008 and the Malaysian Education Blueprint 2013 – 2025, which promote access to education for students with disabilities. One specific group that often faces considerable barriers within the education system is deaf students. While the national agenda supports their inclusion, actual practices, especially in higher education settings like polytechnics, are still evolving and, in many cases, insufficient to meet the needs of deaf students.

Smith, S.R., & Jones, T.W. (2023) discusses key instructional methods such as differentiated instruction, collaborative learning, and the integration of visual and tactile resources to support deaf students' learning experiences as an important method to help deaf students felt motivated in classroom. In other hand, a study conducted by (Khoo, C. H., & Tan, P. L., 2021) explores the effectiveness of accommodations such as sign language interpreters, captioned materials, and accessible course designs, providing recommendations for improving institutional support structures for deaf student's teaching and learning environment.

Polytechnic Malaysia, as a provider of technical and vocational education, is responsible for preparing students with practical and professional skills needed for employment. However, the instructional design, delivery methods, and classroom expectations in polytechnics typically rely on auditory and verbal modes of communication. This creates a disconnect for deaf students who depend largely on visual and signed

communication, such as Kod Tangan Bahasa Melayu (KTBM) and Bahasa Isyarat Malaysia (BIM). Although some effort has been made to support inclusive education in secondary schools, implementation at the post-secondary level remains inconsistent. In these environments, the lack of structured support for both students and educators contributes to learning inequalities.

Malaysian polytechnics offer experts in their fields. However, the necessity for education for deaf students requires the acquisition of additional skills by teaching personnel, including sign language proficiency, deaf student teaching assistants, and support aid, such as interpreters in hands-on classes. Politeknik Ibrahim Sultan (PIS), Politeknik Sultan Salahudin Abdul Aziz Shah (PSA), Politeknik Ungku Omar (PUO), Politeknik Tuanku Syed Sirajuddin (PTSS), Perlis, and Politeknik Kota Kinabalu (PKK) are the five polytechnics in Malaysia that provide programs appropriate for deaf students.

The challenge is not only technological or procedural but also involved its pedagogical and emotional. Educators in polytechnics often do not receive formal training in special education or sign language. Most are expected to deliver the same lesson content to diverse student groups with minimal adjustments. This places immense pressure on teachers who must intuitively adapt their teaching styles while also managing class expectations. As a result, many teachers report feeling underprepared and unsupported when working with deaf students, which can impact both teaching efficacy and student outcomes (Khairuddin & Miles, 2020).

While some research has explored inclusive practices in primary and secondary settings, very little attention has been given to the experiences of educators at the tertiary level, particularly in technical institutions. Polytechnic classrooms often operate under time constraints, content-heavy syllabus, and performance-based assessments. These factors can limit the flexibility needed to incorporate inclusive strategies, especially for deaf students who may require more visual, repetitive, and linguistically accessible content. Therefore, teachers are required to compensate for institutional shortcomings using their own creativity, patience, and personal initiative, which can be emotionally and professionally taxing.

Communication is one of the most commonly reported barriers in the education of deaf students. Teaching materials are often not designed with deaf students in mind. Resources are typically presented in English, which may not be the students' first language, and visual aids sometimes fail to convey accurate or culturally appropriate meanings. Without access to sign language interpreters or instructional materials adapted into KTBM or Bahasa Isyarat Malaysia (BIM), both comprehension and engagement can suffer. This is particularly problematic when students are expected to grasp technical or abstract content requiring precise language and rich visual representation (Ow, S. H., et.al. (2007).

Another layer of complexity involves the emotional and psychological needs of deaf students. Teachers have noted that deaf students often exhibit emotional sensitivity that, if unaddressed, can affect classroom dynamics (Bincy, P., 2023). For example, when academic results are not perceived as "equal" among peers, students may experience feelings of disappointment or discouragement. Therefore, educators must not only focus on lesson delivery but also navigate students' emotional well-being, which are rarely trained to handle.

This study seeks to understand the constraints faced by educators in one Polytechnic institution in Malaysia who teach deaf students. Using a qualitative approach, the study captures the voices and experiences of three lecturers, each of whom has taught deaf students in their respective classes. Through in-depth interviews, the research explores how these educators perceive the challenges they encounter, how they adapt their methods, and what support they feel is lacking in their efforts to deliver inclusive education.

While this study is limited in scope, by focusing on just one institution, it offers valuable insight into the ground realities of inclusive education in technical and vocational settings. By amplifying teacher experiences, it seeks to bridge the gap between inclusive education policy and day-to-day teaching practice. The findings aim to inform future improvements in teacher training, curriculum design, and institutional policies to better support both educators and deaf students.

Ultimately, inclusive education is not achieved through policies alone. It requires a collective effort that includes proper teacher preparation, relevant teaching materials, accessible communication tools, and emotional support

mechanisms. This study contributes to the growing recognition that effective inclusion must begin with understanding the lived realities of those directly involved: the educators who shape the learning environment, and the students whose potential depends on it.

LITERATURE REVIEW

Inclusive education in Malaysia has evolved significantly over the past two decades, shaped by both international commitments and national policy frameworks. Central to this evolution is the recognition of the rights of students with disabilities to access quality education alongside their peers. Documents such as the Persons with Disabilities Act 2008 and the Malaysian Education Blueprint 2013 – 2025 lay the groundwork for inclusive education, setting goals for greater integration of students with special needs into mainstream institutions. However, despite these policy advancements, the practical challenges of implementing inclusive education remain, particularly for deaf students in post-secondary and technical settings such as polytechnics.

Communication Barriers and Sign Language Use

Among the most widely reported challenges in teaching deaf students is the communication gap between educators and students. In Malaysia, Bahasa Isyarat Malaysia (BIM) is the official language of the deaf community. However, many teachers in mainstream and even special education settings are not proficient in BIM, resulting in significant barriers to instruction and classroom engagement. Kamaluddin and Rashid (2024) found that while some educators possess basic knowledge of BIM, few are fluent or confident in using it effectively in teaching. This deficiency compromises the clarity of content delivery and restricts the participation of deaf students in classroom discussions.

Khairuddin, Miles, and McCracken (2018) similarly identified communication challenges as a central barrier to inclusion, noting that deaf learners often struggle to access lessons when instruction is not accompanied by visual aids or sign language interpretation. Their study emphasised that effective inclusive education must begin with structured and consistent teacher training in BIM and accessible communication strategies.

Ow, S. H., et.al. (2007) provide further insight, noting that traditional classroom structures often hinder visibility and comprehension for deaf students. Their research showed that in classrooms relying on visual cues alone, messages were frequently missed due to line-of-sight limitations, further highlighting the need for more interactive, accessible classroom layouts and teaching methods that prioritise visibility and direct communication.

Limitations of Teaching Materials and Resources

Another major constraint lies in the unsuitability of instructional materials. Most textbooks, notes, and digital resources are developed with hearing students in mind, often presented in English and lacking visual or bilingual (BIM and Kod Tangan Bahasa Melayu) support. This becomes particularly problematic in polytechnic settings, where technical subjects require precise, conceptually clear explanations. Kamaluddin and Rashid (2024) reported that even when educators were familiar with BIM, they lacked the appropriate tools to effectively apply it in classroom instruction, especially when materials were not designed with inclusivity in mind.

Kamarudin, Yasmin, and Ridzuan (2018) further complicated the issue by noting that some classrooms in Malaysia use both Kod Tangan Bahasa Melayu (KTBM) and BIM, often without consistency. This dual-system approach can confuse both students and teachers, leading to miscommunication and an incomplete understanding of subject matter. The lack of standardised, culturally relevant visuals in educational materials further weakens deaf students' grasp of content.

Sulaiman, R., & Hamzah, A. (2021) also investigates communication challenges in TVET institutions in Malaysia, particularly for deaf students. It highlights the difficulty deaf students have in understanding technical terminology, lack of sign language interpreters, and the absence of accessible teaching materials which affect communication in the classroom.

Additionally, the lack of sign language interpreters, particularly in tertiary institutions, means that even simplified materials cannot always be reinforced through live explanation. Khairuddin and Miles (2020) observed that deaf students are often reliant on real-time interpretation to understand technical content, and when this is not available outside the classroom, retention and academic performance suffer. This points to a larger institutional gap in providing sustained learning support beyond the classroom environment.

Educator Preparedness and Training Gaps

Effective inclusive education depends heavily on educators being prepared and empowered to work with diverse learners. Unfortunately, most lecturers in Malaysian polytechnics are not equipped with the training needed to support deaf students. Kamaluddin and Rashid (2024) found that even special education teachers showed varying levels of BIM proficiency and lacked formal certification. This gap is more pronounced in technical institutions where inclusive education is often not integrated into teacher training or professional development programs.

Khairuddin and Miles (2020) also noted that many educators lacked knowledge about managing assistive devices, such as cochlear implants or hearing aids, and did not fully understand how deaf students process language and information. This lack of pedagogical awareness forces many lecturers to rely on trial-and-error methods, which can lead to inconsistency and emotional exhaustion. These conditions not only affect teaching quality but also impact the confidence and well-being of educators.

To address these issues, a systemic shift in training policies and institutional commitment is necessary. Universities and teacher education programmes must incorporate deaf pedagogy, visual learning strategies, and cultural competence related to the Deaf students into their curricula. Moreover, technical educators in polytechnics should be offered continuing professional development opportunities specifically tailored to inclusive technical and vocational education. As Nordin et al. (2015) advocate, these measures are not supplementary, but foundational, if institutions are to fulfill their promise of equitable and accessible education for all.

Emotional and Social Challenges in Deaf Education

Deaf students' emotional well-being is another area often neglected in inclusive education discourse. Several studies have shown that deaf learners are particularly vulnerable to emotional sensitivity, which can manifest in classroom settings as anxiety, withdrawal, or heightened reactions to perceived inequality. Bakar, Hamdani, and Alias (2019) explored similar patterns in their study of Muslim deaf learners, where they found that social isolation and a lack of self-confidence were common due to communication barriers and limited peer interaction. These feelings, if unaddressed, can negatively influence classroom behaviour and reduce motivation. The need for emotionally responsive teaching strategies is therefore crucial in maintaining a supportive and productive learning environment.

A study by Wan Ying et al. (2017), found that hearing peers' lack of understanding about deafness often created exclusionary dynamics, reinforcing feelings of inferiority or disconnection among deaf learners. This leads to a greater need for inclusive awareness campaigns and socio-emotional training not only for teachers but also for students.

Technology and Innovation in Deaf Education

As educational technology evolves, there are growing opportunities to enhance deaf students' learning experiences through digital innovation. Mohamed et al. (2022) developed a mobile learning application called 3D Sign Language, featuring 3D animations and interactive elements aimed at helping children with hearing impairments, as well as parents and the broader community, to learn basic sign language. The application was developed using the ADDIE model and tested positively among users for its ease of use, engagement, and effectiveness. The majority of respondents in the study agreed that 3D animations made the application more helpful and interesting, demonstrating its potential to bridge communication gaps and promote inclusive education through accessible digital tools.

More recently, Hii et al. (2024) introduced an AI-powered two-way sign language communication system aimed at improving BIM access in Malaysian classrooms. Their system was positively received in early testing and has the potential to transform how deaf students engage with content and educators (Hii et al., 2024). However, despite their promise, such technologies remain underutilised in polytechnic settings due to funding limitations, lack of infrastructure, and resistance to change.

METHODOLOGY

Research Design

This study employed a qualitative research design to explore the constraints faced by educators teaching deaf students in a Malaysian Polytechnic. A phenomenological approach was selected to uncover the lived experiences of lecturers who have directly interacted with deaf students in their classrooms. Phenomenology is well-suited for this study as it focuses on understanding how individuals interpret and make sense of their personal and professional experiences within a specific context.

By focusing on educators' voices, this approach allows for deep exploration of the emotional, communicative, and pedagogical challenges associated with inclusive teaching in technical and vocational education. Unlike quantitative methods that aim for generalisability, qualitative research prioritises contextual depth, narrative richness, and the subjective perspectives of participants. This is particularly relevant given the relatively small population of deaf students in polytechnics and the limited number of lecturers with relevant experience.

Sampling and Informant Selection Criteria

The study used homogeneous purposive sampling, where participants were selected based on specific criteria to ensure they had shared experiences relevant to the research objectives. Three lecturers from one Polytechnic institution in Malaysia were invited to participate as informants. All had a minimum of five years of teaching experience and had directly taught students with hearing disabilities in mainstream certificate and diploma-level courses.
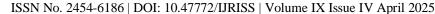
Participation was entirely voluntary, and informed consent was obtained prior to data collection. Each participant came from a different academic department, offering a diverse yet focused perspective on the challenges faced in inclusive teaching. This approach enabled the researcher to identify both common themes and individual variations in experience, thus enriching the overall understanding of the phenomenon.

Educators' Demographic

Table 1 provides detailed demographic information about the three educator participants involved in the study. Respondent 1 has 11 years of teaching experience and holds a Bachelor of Education with Honours in Special Education, indicating a strong foundation in inclusive pedagogy and learner diversity. Respondent 2 has 6 years of teaching experience and an academic background in Computer Science and Networking, suggesting familiarity with technical and digital systems relevant to BIM-related instruction. Respondent 3, with 5 years of teaching experience, holds a Bachelor of Arts and Design with Honours, bringing a creative and design-oriented perspective to teaching. The educators' varied academic specialisations and teaching experience contribute to a diverse set of insights regarding the implementation of BIM in education. However, it is important to note that these profiles are self-reported, and the findings may be influenced by individual biases and contextual interpretations.

Table 1 Educators' Demographic

Respondents	Years of Teaching	Background of Study
Respondent 1	11 years	Bachelor of Education with Honours (Special Education)
Respondent 2	6 years	Bachelor of Computer Science & Networking
Respondent 3	5 years	Bachelor of Arts and Design with Honours

Data Collection

Data were collected through semi-structured interviews, which allowed for a flexible yet focused exploration of each lecturer's experiences. An interview guide was developed to ensure consistency across interviews, with open-ended questions addressing the following areas:

1. Teaching practices used with deaf students,

2. Communication strategies and challenges,

3. Use and effectiveness of instructional materials,

4. Emotional and behavioural responses of deaf students, and

5. Perceived institutional support and coping mechanisms.

Interviews were conducted in Bahasa Malaysia to ensure comfort and ease of expression for participants. Each session lasted between 45 to 60 minutes and was held in a private setting, either face-to-face or via a secure online platform, depending on participant preference. With the participants' permission, interviews were audio-recorded and later transcribed verbatim for analysis.

This method provided space for participants to express themselves authentically, while also allowing the researcher to probe deeper into emerging themes or clarify ambiguous responses. The flexibility of semi-structured interviews was particularly valuable for capturing the complexity of inclusive teaching experiences in technical education contexts.

Ethical Approval

This research strictly adhered to ethical principles as outlined in the Malaysian Code of Responsible Conduct in Research, with ethical clearance obtained from the institution's research ethics committee. Prior to data collection, all participants received a detailed information sheet outlining the study's purpose, procedures, and the intended use of the data. Written informed consent was obtained, with participants assured that their involvement was entirely voluntary, they could withdraw at any point without consequence, and their identities would remain confidential. Interviews were audio-recorded solely for transcription purposes, and all data were securely stored on a password-protected device for academic use only. To maintain anonymity, pseudonyms (e.g., Respondent 1, Respondent 2) were used in all transcripts and reporting, and institutional details were generalised to prevent identification.

DATA ANALYSIS AND FINDINGS

Data collected through semi-structured interviews with three lecturers were analysed using thematic analysis. Thematic analysis enabled the identification of recurring patterns across the participants' experiences, which were grouped into four main themes, as in Figure 1: (1) Language and Communication Barriers, (2) Inadequacy of Instructional Materials, (3) Memory and Retention Challenges, and (4) Emotional Sensitivity of Deaf Students. The excerpts presented below have been translated into English, with minor editing for clarity, while preserving the participants' intended meaning.
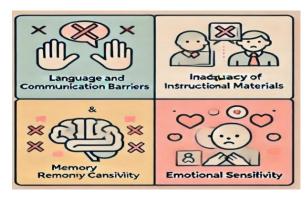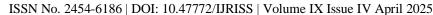

Figure 1 Main Themes of Interview

Language and Communication Barriers

Communication emerged as a central challenge, though experiences varied among lecturers depending on their level of proficiency in Bahasa Isyarat Malaysia (BIM). One lecturer was relatively fluent in BIM, which enabled clearer communication and a smoother teaching process. However, the other two respondents had only basic or moderate proficiency, which affected their ability to explain complex or abstract content.

"I can only do basic signs. So sometimes when I explain, I'm not sure if the student really understands or just nods out of politeness. It slows everything down." – Respondent 3

"During class, I try my best to explain with hand gestures and simple BIM. But when it comes to deeper concepts, it's hard. The student will understand a bit, but I know I can't cover the full depth." – Respondent 2

These challenges are consistent with research by Kamaluddin and Rashid (2024), who noted that while some educators possess moderate BIM knowledge, many lack the fluency required for effective content delivery. Khairuddin et al. (2018) also emphasised that communication gaps can hinder comprehension and disengage students when teachers are not equipped with adequate sign language skills.

The varying levels of fluency among lecturers suggest that while some educators are making efforts to learn and use BIM, the absence of formal training or interpreter support still presents a significant barrier. This inconsistency also affects how equitably deaf students can access and participate in learning.

Inadequacy of Instructional Materials

All three lecturers raised concerns about the lack of adapted instructional materials for deaf students. They reported that most resources were in English, without translations into Bahasa Melayu or support in BIM or KTBM, creating a dual-language barrier for students who already struggle with written text.

"The references are all in English. I try to translate as much as I can, but the students still have difficulty because there's no BIM support in the slides or books." – Respondent 1

In addition, visual aids used in class were often reported to be ineffective or poorly designed:

"Some visuals are just not suitable. The meaning is either not clear, or sometimes the pictures are too abstract. Worse, they can even be distracting." – Respondent 1

These findings echo those of Kamarudin et al. (2018), who found that the inconsistent use of visual language and dual sign systems (KTBM and BIM) can confuse students and lead to misunderstandings. For deaf students, clear, culturally appropriate visuals and multilingual content are essential for comprehension.

The issue is further compounded by the absence of post-lesson resources, such as sign-supported summaries or captioned recordings which could help students reinforce what they learned in class. In the absence of such support, learning becomes isolated to the live classroom session, limiting long-term understanding.

Memory and Retention Challenges

Another notable theme was the difficulty deaf students faced in retaining information after class, especially when content was not reinforced through visual or signed materials. One respondent stated that while students could follow lessons during class, particularly when BIM was used, they seemed to be unable to retain the material afterwards.

"I use PowerPoint in class, but once class ends, it's like everything is forgotten. The student remembers only what I explain with BIM. If there's no interpreter after class, they struggle to recall." – Respondent 2

This aligns with Khairuddin and Miles (2020), who found that consistent multimodal reinforcement is critical for deaf learners. In technical subjects, where knowledge is cumulative and often abstract, the absence of

recorded materials or visual references significantly limits knowledge retention.

The findings indicate a pressing need for accessible post-class content, such as videos with BIM interpretation, infographics, or digital summaries tailored for visual learning. Without this, students are left with fragmented understanding, which can negatively impact their performance and confidence.

Emotional Sensitivity of Deaf Students

The final theme concerned the emotional well-being and sensitivity of deaf students. Lecturers noted that some students responded emotionally to comparisons or perceived inequalities in academic achievement.

"Deaf students can be very emotional. For example, if one student gets an A, the others feel pressured that they must get an A too. If not, they become upset or discouraged." – Respondent 3

Such emotional responses may stem from long-standing feelings of exclusion or underachievement, exacerbated by communication difficulties and social barriers. This finding is consistent with Bakar et al. (2019), who observed that deaf students often face emotional isolation and lack confidence due to limited participation in classroom interactions.

In addition, Wan Ying et al. (2017) noted that negative attitudes from peers and lack of deaf awareness among staff can further contribute to these emotional dynamics. These findings highlight the need for teachers to be not only content experts but also emotionally attuned and empathetic practitioners who can support students' mental well-being alongside academic growth.

The interviews revealed that educators are committed to supporting deaf students but face systemic barriers in doing so. While one participant demonstrated relatively strong BIM communication skills, the other lecturers reported challenges due to limited fluency and a lack of supporting resources. The use of English-only materials, ineffective visuals, and the absence of accessible post-class content further limited deaf students' learning. In addition, lecturers had to manage complex emotional dynamics in the classroom, as it is a state where most had no formal training.

Collectively, these findings point to the need for institutional and policy-level reforms that include structured BIM training, curriculum redesign, emotional support mechanisms, and the integration of assistive technologies. Without such efforts, inclusive education for deaf students in polytechnics will remain limited to isolated efforts rather than becoming embedded practice.

DISCUSSION

This study explored the challenges faced by educators in teaching deaf students within a Malaysian Polytechnic. Through thematic analysis of interviews with three lecturers, four key themes were identified: language and communication barriers, inadequacy of instructional materials, memory and retention challenges, and emotional sensitivity of deaf students. These findings highlight the gap between inclusive education policy and classroom practice, particularly in technical and vocational institutions. While efforts toward inclusion exist, educators continue to operate within a system that offers limited support, requiring them to adapt through personal resourcefulness and emotional resilience.

Language and Communication Barriers

The findings confirm that communication remains one of the most significant challenges in teaching deaf students. While one lecturer demonstrated relative fluency in Bahasa Isyarat Malaysia (BIM), the others reported only basic or moderate proficiency, which impacted the clarity and effectiveness of instruction. This inconsistency illustrates the broader issue of insufficient formal training in sign language among educators in post-secondary institutions. Without institutional support in the form of interpreters or professional BIM development, educators are left to rely on limited personal knowledge and ad hoc strategies.

This is consistent with the work of Khairuddin et al. (2018 and 2021), who reported that many deaf students in

Malaysian schools experience limited access to meaningful communication due to teachers' lack of sign language skills. Similarly, Kamaluddin and Rashid (2024) found that while some special education teachers are familiar with BIM, many lack the fluency and confidence to use it as an instructional tool. The variability in BIM proficiency among educators leads to uneven educational experiences for deaf students, undermining the goals of inclusive education.

In polytechnic environments, where content is often technical and abstract, the need for precise communication becomes even more critical. When educators are unable to fully explain key concepts through sign language, students are at risk of partial understanding or complete disengagement. This highlights the urgent need for structured BIM training and the inclusion of qualified interpreters in classroom settings.

Inadequacy of Instructional Materials

All participants reported that teaching materials were not designed with deaf students in mind. Resources were predominantly in English, with little to no translation into Bahasa Melayu or BIM, creating linguistic barriers for students who rely on visual or signed content. Furthermore, the visuals used in materials such as slides and textbooks were often described as inappropriate, abstract, or confusing.

These findings align with Kamarudin et al. (2018), who observed that the simultaneous use of multiple sign systems and poorly designed visual content can create confusion and hinder comprehension. In polytechnic education, where visualisation of concepts is a major key, particularly in science, engineering, and technology courses, the lack of relevant and accessible visuals greatly compromises the learning experience of deaf students.

Moreover, the absence of adapted materials does not only affect students but also impedes educators, who must spend extra time translating, reformatting, or simplifying content, often without training or support. As Khairuddin and Miles (2020) argue, inclusive teaching materials must be designed with the needs of diverse learners in mind from the outset, rather than relying on post-hoc modifications.

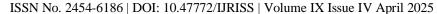## Memory and Retention Challenges

A unique insight from this study was the issue of knowledge retention among deaf students. While they were generally able to follow lessons during live instruction, especially when accompanied by BIM, they struggled to retain information after class due to the lack of accessible, sign-supported post-lesson materials. This finding supports earlier work by Khairuddin and Miles (2020), who emphasised the importance of multimodal reinforcement for deaf students. Without repeated exposure through visually accessible resources, students cannot effectively consolidate their understanding. In the polytechnic setting, where subjects build on prior knowledge, this gap has significant implications for academic success.

It also reflects a deeper issue on the reliance on oral and written modes of learning in mainstream education systems. When content is not available in formats that cater to deaf students' learning preferences such as captioned videos, signed recordings, or visual summaries, they are unable to review or revisit lessons independently. This highlights the need for institutions to invest in inclusive digital tools and assistive technologies that support continuous learning beyond the classroom.

Emotional Sensitivity of Deaf Students

The emotional dimensions of teaching deaf students also emerged as a critical theme. Educators described students as emotionally sensitive, particularly in contexts of academic comparison or when they perceived unequal treatment. These emotional responses, while understandable, were challenging for lecturers who were not trained in handling the psychological aspects of inclusion.

This echoes the findings of Abu Bakar et al. (2019), who reported that deaf students often experience feelings of exclusion and emotional isolation due to communication barriers and limited social integration. Emotional sensitivity, if left unaddressed, can affect motivation, engagement, and peer relationships, further compounding educational disadvantages.

Additionally, Wan Ying et al. (2017) noted that the attitudes of hearing peers can significantly influence the emotional well-being of deaf students. Without school-wide awareness and support, deaf learners may continue to feel marginalised, even in settings that are nominally inclusive. These findings reinforce the importance of training educators not only in content and communication, but also in emotional intelligence and inclusive classroom management.

RECOMMENDATIONS

Based on the findings of this study, several key recommendations are proposed to improve the teaching and learning experience for deaf students in Malaysian polytechnic institutions. Firstly, educators should be provided with structured and continuous training in BIM to enhance communication and ensure effective content delivery. This training should also include exposure to deaf culture and inclusive pedagogy. Secondly, teaching materials must be revised to include bilingual content in Bahasa Melayu and BIM, supported by appropriate visuals and simplified explanations to accommodate diverse learning needs. The integration of assistive technologies, such as captioned videos, sign language applications, and AI-powered interpretation tools, is also essential to enhance access and engagement. Additionally, institutions should prioritise the emotional and social support of deaf students by appointing trained counsellors or inclusion officers and equipping teachers with emotional literacy skills. Sufficient institutional funding and policy enforcement are necessary to support interpreter services, inclusive material development, and infrastructure upgrades. Finally, collaboration with the deaf community and relevant organisations should be encouraged to ensure that institutional practices are informed by real-life experiences and needs. These recommendations aim to support the creation of an inclusive, equitable, and empowering educational environment for deaf students in polytechnic settings.

Future Research

A significant subject of research is examining the challenges educators have when instructing deaf students, particularly in Malaysian polytechnic settings. However, in order to gather the educators' perspective on the obstacles they encounter, this study only looks at one area. Future researchers could look at a number of areas, such as:

a) How teaching training affects the achievement of deaf students

b) How classroom technology supports the teaching and learning of deaf students.

c) Language and Cultural Barriers for Deaf Students as well as educators in Malaysian Polytechnics

d) An Institutional and Educator Perspective on Deaf Students' Support Systems

e) The Effects of Collaboration and Peer Support on Teaching Deaf Students

f) How Policies Affect Deaf Students' Educational Experiences

g) Examining Teachers' Views on the Needs and Learning Styles of Deaf Students

These studies can help future researchers to further explore the learning environment for deaf students, whether at the primary or higher education level. With these more in-depth studies, it will be possible to help improve the academic performance, emotional well-being and success of deaf students in a more conducive learning environment and prevent them from falling behind in academic and technical aspects, in particular. Furthermore, a study on contextual details, such as institutional support, policy environment, and student demographics, would enhance the analysis of their experiences and challenges.

CONCLUSIONS

This study explored the lived experiences of lecturers teaching deaf students in a Malaysian Polytechnic, focusing on the practical constraints they encounter in delivering inclusive education. The findings revealed four key challenges: language and communication barriers, inadequacy of instructional materials, memory and

retention difficulties, and the emotional sensitivity of deaf students. While the presence of inclusive education policies at the national level signals a progressive intent, their implementation at the institutional level remains inconsistent and underdeveloped, which particularly in technical and vocational education settings.

The study found that although one lecturer demonstrated relative fluency in BIM, others had limited proficiency, making it difficult to communicate complex academic concepts effectively. This variability reflects a broader systemic issue: the lack of structured, compulsory BIM training for educators. In a polytechnic environment where technical terminology and abstract concepts are common, effective communication is not just helpful, but obviously, it is essential.

Equally concerning is the inadequacy of instructional materials. Teaching resources were often found to be in English, with limited visual or BIM-based adaptations. Without accessible materials that support bilingual and visual learning, deaf students face an uphill battle in understanding and engaging with the curriculum. Additionally, the absence of post-class learning tools such as signed video recaps or captioned slides, limits the students' ability to retain and revisit the material after lessons, further widening the learning gap.

Beyond cognitive and linguistic challenges, the study highlighted the emotional burden carried by deaf students. Participants noted that these students often exhibited emotional sensitivity, particularly in relation to academic comparisons and perceived inequality. This dimension of inclusion frequently overlooked, at the points to the need for emotional and psychological support mechanisms within polytechnic institutions. Educators also require training in emotional intelligence and inclusive classroom management to provide a holistic approach to their students.

Overall, this research underscores the pressing need for systemic reforms to support inclusive education in Malaysia's technical and vocational institutions. The findings suggest that while lecturers show commitment and adaptability, they are constrained by a lack of institutional training, appropriate materials, technological tools, and emotional support frameworks. These fundamental gaps must be addressed, to ensure that Malaysia is able to achieve the full potential of its inclusive education policies, particularly within the polytechnic system.

Inclusion is not achieved merely by placing deaf students in mainstream classrooms. It requires an intentional and sustained effort to ensure that both students and educators are supported through clear communication, effective pedagogy, and compassionate engagement. By understanding and responding to the real challenges educators face, this study contributes to the growing body of knowledge needed to bridge the gap between policy and practice in inclusive higher education.

REFERENCES

1. Abu Bakar, A. I., Hamdani, N.., & Alias, N. A. (2019). Challenges Faced by Malaysian Muslims' Deaf Community in Learning Akidah: Discussions and Suggestions. *Journal of Quran Sunnah Education & Special Needs*, *3*(2), 22–27. https://doi.org/10.33102/jqss.vol3no2.45
2. Bincy, P. (2023). *Self acceptance and socio-emotional adjustment in relation to level of aspiration among hearing impaired secondary school students in inclusive and special schools* (Doctoral dissertation, Department of Education, University of Calicut).
3. Hii, V. Z. L., Lo, A. K. K., Lee, I. P. X., Abuan, A. V. G., Lee, S. H., & Then, P. (2024). Two-way Malaysian Sign Language communication system for inclusive education. *Proceedings of APSIPA Annual Summit and Conference*. https://doi.org/10.1109/APSIPAASC63619.2025.10848883
4. Jamaluddin, N. I., Haizal, K. H., Amin, N., & Mohamed, J. (2022). 3D Sign Language: The Development of Mobile Learning Application. Multidisciplinary Applied Research and Innovation, 3(1), 146-152.
5. Kamaluddin, A. A. @, & Rashid, S. M. M. (2024). Use of Malaysian Sign Language for Special Education Teachers in Teaching Deaf Students. International Journal of Academic Research in Business and Social Sciences, 14(8), 2288–2299.
6. Kamarudin, D., Yasmin, H., & Ridzuan, D. M. (2018). Bahasa Melayu Kod Tangan (BMKT) and Bahasa Isyarat Malaysia (BIM): Two different hand signal codes for the hearing impaired in Malaysian education. *Malaysian Journal of Learning and Instruction, 15*(2), 23–32.
7. Khairuddin, K., Miles, S., & McCracken, W. (2018). Deaf learners' experiences in Malaysian schools:

Access, equality and communication. *Social Inclusion, 6*(2), 46–55. https://doi.org/10.17645/si.v6i2.1345

8. Khairuddin, K., & Miles, S. (2020). School staff members' and parents' experiences of the inclusion of deaf children in Malaysian mainstream schools. *Education 3–13, 48*(3), 273–287. https://doi.org/10.1080/03004279.2019.1664403

9. Khairuddin, K. F., & Miles, S. (2021). School staff members' and parents' experiences of the inclusion of deaf children in Malaysian mainstream schools. In *Policy, Provision and Practice for Special Educational Needs and Disability* (pp. 79-99). Routledge.

10. Khoo, C. H., & Tan, P. L. (2021). "Enhancing accessibility and support for deaf students in polytechnic education in Malaysia." International Journal of Inclusive Education, 25(7), 728-741. DOI: 10.1080/13603116.2020.1795374

11. Nordin, N., Yunus, M. M., Zaharudin, R., Salehi, H., Mohd Yasin, M. H., & Embi, M. A. (2015). Identifying the challenges and barriers hearing-impaired learners face with using ICT education courses. Journal of Theoretical and Applied Information Technology, 78(3), 327–335.

12. Ow, S.H., Mokhtar, S., & Zainuddin, R. (2007). A Review on the teaching and learning resources for the deaf community in Malaysia. *CMU. Journal*, *165*.

13. Smith, S.R., & Jones, T.W. (2023). "Pedagogical strategies for inclusive education of deaf students: An international review of research." Disability and Society, 38(3), 355-370. DOI: 10.1080/09687599.2023.2171982

14. Sulaiman, R., & Hamzah, A. (2021). "Communication barriers in TVET: A study on the challenges faced by deaf students in Malaysia." Journal of Technical Education and Training, 13(2), 34-45. DOI: 10.1108/JTET-04-2021-000

15. Wan Ying, T., Tan, C. S., & Siah, P. C. (2017). Attitude towards deaf people among Malaysian secondary school students. *Proceedings of the SEAMEO SEN International Conference on Special Education, 27*, 42–51.