

Systematic Literature Review: Sensory Teaching to Students with Special Needs

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Abstract

Sensory-based learning represents a vital pedagogical approach in special education, aimed at enriching the learning experiences of students with special needs, particularly those experiencing sensory, developmental or learning disorders. This systematic review explores contemporary literature to identify the key challenges, the role of technology, and innovative strategies in sensory instruction. The analysis reveals several prominent challenges, including the lack of appropriate sensory materials, non-inclusive classroom design, limited teacher expertise, and insufficient technological support. The study highlights that new technologies like augmented reality (AR) and sonification narratives can help make learning more engaging and inclusive, although challenges to implementation remain. Innovative classroom concepts such as multisensory rooms have been shown to enhance students' focus, attention, and social interaction. In the context of multisensory instruction, collaborative approaches involving educators, researchers, and stakeholders are identified as crucial for the successful execution of inclusive educational strategies. Overall, this systematic literature review underscores the significant potential of sensory instruction within special education and emphasises the need for continuous innovation, adequate resource allocation, and comprehensive teacher training to address existing obstacles. The findings offer practical insights and recommendations for building a more inclusive and responsive special education system that better meets the diverse needs of students with disabilities.

Keywords: Sensory Instruction, Special Education, Learning Technology, Inclusive Design, Systematic Literature Review

Introduction

Sensory-based learning is increasingly recognised as a pivotal pedagogical strategy in special education, particularly for students with sensory, developmental, or learning disorders. This approach aims to create enriched learning experiences that cater to the unique needs of these students, thereby facilitating better educational outcomes. Despite its potential, sensory teaching faces numerous challenges that hinder its widespread and effective implementation. This systematic literature review explores contemporary research to identify key challenges, the role of technology, and innovative strategies in sensory instruction.

The importance of sensory teaching lies in its ability to transform traditional educational environments into dynamic, inclusive spaces that accommodate diverse learning profiles. Students with special needs often encounter significant barriers in conventional classroom settings, which typically lack the necessary adaptations to support their sensory requirements. Research has shown that sensory-focused approaches can help these students process information more effectively and adapt better to their learning environments (Marcham & Tavassoli, 2023; Patel et al., 2023). For instance, autistic students with atypical sensory reactivity may exhibit behavioral challenges that impede their learning, making sensory-based instruction crucial for their educational development.

Moreover, the integration of technology in sensory teaching offers promising avenues for enhancing learning experiences. Innovations such as augmented reality (AR) and sonification narratives can make learning more engaging and accessible for students with various disabilities (Mokmin, 2023; He, 2023). However, the implementation of these technologies is not without challenges, including a lack of empirical research and difficulties in customizing technological tools to meet individual student needs.

Collaboration among educators, researchers, and stakeholders is another critical factor for the successful execution of sensory-based educational strategies. Effective sensory interventions often require a multidisciplinary approach, combining insights from various fields to create comprehensive and meaningful learning activities (Nikolarazi et al., 2023; Pilar Ribate et al., 2023). This collaborative effort is essential for developing inclusive educational programs that address the diverse needs of students with disabilities.

Despite the growing recognition of the benefits of multisensory approaches, significant obstacles remain. These include a lack of appropriate sensory materials, non-inclusive classroom designs, limited teacher expertise, and insufficient technological support. Addressing these challenges is crucial for building a more inclusive and responsive special education system that can better meet the diverse needs of students with disabilities.

This study aims to underscore the significant potential of sensory instruction within special education and emphasize the need for continuous innovation, adequate resource allocation, and comprehensive teacher training. By exploring these dimensions, the review offers practical insights and recommendations for enhancing the effectiveness of sensory teaching strategies, ultimately contributing to a more inclusive educational landscape.

Methodology

This systematic literature review was conducted using the PRISMA method (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The PRISMA approach serves as a high-quality guideline for conducting systematic reviews due to its rigorous, structured processes and the capacity to handle a large volume of data. Reports produced using this method are widely recognized for their transparency, consistency, and reproducibility (Flemming et al., 2018). The methodology provides clear procedural steps, a systematic process, and a comprehensive scope that encompasses all relevant references. It also allows for replication by other researchers seeking to explore similar topics using the same structured approach (Okoli, 2015).

Applying PRISMA in social science research offers distinct advantages. It ensures that findings are derived from credible and peer-reviewed sources, facilitates identification of study limitations through keyword-based filtering, and helps researchers streamline the review process by establishing a threshold for sufficiency in literature coverage (Okoli, 2015). PRISMA is designed to help researchers retrieve high-quality, relevant literature in alignment with the research objectives through its four-step process: identification, screening, eligibility, and inclusion (Gillath & Karantzas, 2019; Shafrill et al., 2020). In this review, the primary database used for literature retrieval was Scopus. The four stages of the PRISMA process are identification, screening, eligibility, and inclusion. These steps were rigorously applied to ensure that selected articles align closely with the review's focus and research objectives. The article selection process is visually summarised in Figure 1 as follows:

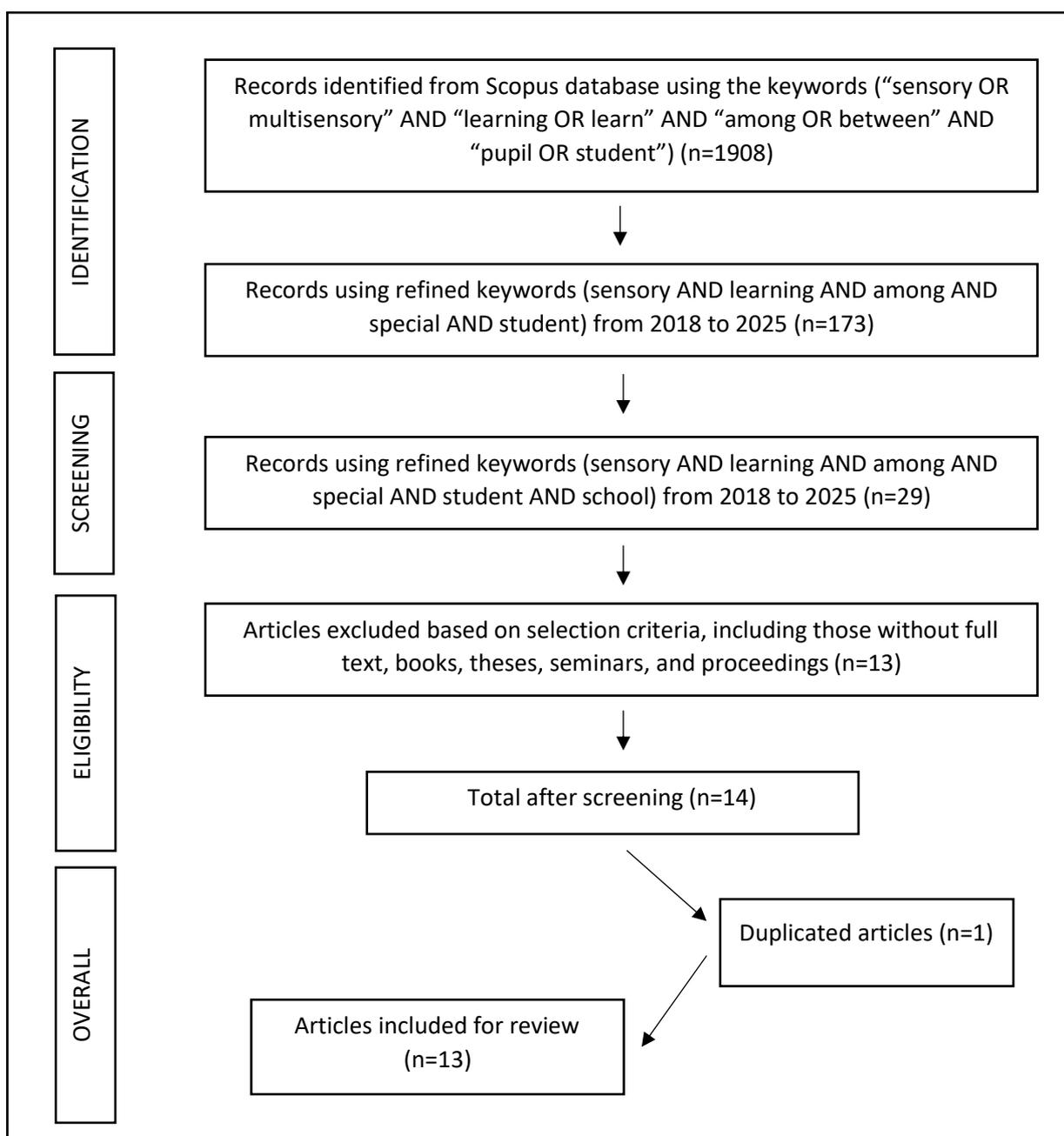


Figure 1. PRISMA Flowchart of the SLR Process on Sensory-Based Learning for Students with Special Needs

Table 1

Database Source and Search Strategies

Database	Keyword Sequence and Boolean Operators
Scopus	TITLE-ABS-KEY TITLE-ABS-KEY (sensory AND learning AND among AND special AND student AND school) AND PUBYEAR > 2018 AND PUBYEAR < 2025

Table 2

Article Selection Criteria (Scopus)

Criteria	Eligibility	Exclusion
Type of Literature	Journal articles (Quantitative, Qualitative, and Mixed Methods)	Book chapters, books, project papers, review papers, and conference proceedings
Language	Malay and English	Languages other than Malay and English
Field	Islamic Education and Special Education	Fields other than Islamic Education and Special Education
Time Frame	2018-2025	Before the year 2018
Geographical Coverage	Worldwide	None

Identification Process

The identification stage involves the process of locating articles that align with the research focus. The researcher selected Scopus as the sole database for this study, as it is one of the largest bibliographic databases in the world, encompassing over 25,000 peer-reviewed journals, including leading journals also indexed in the Web of Science and other major repositories. Scopus offers comprehensive bibliometric features such as citation tracking, keyword mapping, and author profiling, which facilitate robust synthesis and analysis of research data. Full institutional access further ensures that the search process is both consistent and comprehensive. Moreover, prior studies have demonstrated that Scopus is a reliable and widely utilised source for conducting systematic reviews in the fields of education and social sciences (Burnham, 2006; Falagas et al., 2008; Mongeon & Paul-Hus, 2016).

The first step involved retrieving articles from Scopus using the keywords: (sensory AND learning AND among AND student) within a six-year publication window from 2018 to 2025. This search initially returned 1,908 articles related to "sensory", "learning", and "student". To refine the results, a more specific search string was applied using: (sensory AND learning AND among AND special AND student), which yielded 173 articles. A final refinement was made using the extended search string: (sensory AND learning AND among AND special AND student AND school), resulting in a narrowed list of 31 articles, which were then selected as the preliminary reference pool for further screening and analysis.

The Screening Process

At this stage, the researcher applied more specific criteria to ensure that the selected articles were closely aligned with the research questions. Initially, empirical studies, regardless of their methodology (qualitative, quantitative, or mixed-method), were incorporated. Articles such as book chapters and books had already been excluded during earlier stages. Second, only articles that directly addressed the use of sensory approaches in

teaching were retained. Third, the publication date range was limited to 2019 to 2025, as research on sensory-based teaching in Malaysia began to emerge around 2019 (see Table 2). Following this screening process, 11 articles were excluded from the initial 31, resulting in a refined selection of 20 articles. However, some of the excluded articles were retained for use as supplementary references.

Eligibility and Inclusion Summary

After the screening process, 20 articles were deemed eligible for inclusion in the study's core analysis. At this stage, the researcher also assessed for duplicate entries, resulting in the exclusion of one duplicate, leaving a final total of 19 articles for full review. The eligibility process ensures that all selected articles are clearly aligned with the research focus.

Inclusion

After completing the eligibility assessment, only 13 articles were fully included in the final review. These articles specifically discuss the implementation of sensory-based teaching for students with special needs in school settings.

Data Analysis Process

All the selected articles were entered into the Mendeley software to identify the key themes based on the research questions:

1) What are the challenges in implementing sensory-based instruction for students with special needs?

Findings Analysis

The researcher provides a detailed analysis of the challenges associated with implementing sensory-based instruction for students with special needs. This analysis is presented through both descriptive and thematic approaches, based on the systematic review of selected articles.

Descriptive Analysis

According to the search results, thirteen (13) empirical studies, including quantitative, qualitative, and mixed-method studies, were identified as focusing on the problems of adopting sensory-based education for students with special needs in school settings. The findings show that scholarly attention to this topic has increased notably in 2023, as reflected across numerous publications by researchers such as Zulkifli et al. (2023), Agostine et al. (2023), Fanchamps et al. (2023), Patel et al. (2023), Pilar Ribate et al. (2023), He (2023), Marcham and Tavassoli (2023), Rodrigues et al. (2023), Nikolarazi et al. (2023), Vinoliya and Ponniah (2023), Humam et al. (2023), Mutlu (2023), Opoku et al. (2023), Othmani et al. (2023), and Mokmin (2023). This descriptive analysis is further illustrated in Figure 3. The review did not apply any restriction based on country of origin or study location. In terms of methodological design, nine (9) studies were conducted using qualitative approaches, including those by Zulkifli et al. (2023), Agostine et al. (2023), Patel et al. (2023), Pilar Ribate et al. (2023), He (2023), Nikolarazi et al. (2023), Vinoliya and Ponniah (2023), Othmani et al. (2023), and Mokmin (2023). Meanwhile, three (3) articles employed quantitative research designs, authored by Marcham and Tavassoli (2023), Rodrigues et al. (2023), and Opoku et al.

(2023). In addition, one (1) study conducted by Humam et al. (2023) utilised a mixed-methods approach. The detailed source data for all reviewed articles are presented in Table 3.

Table 3

Summary of Reviewed Articles and Data Sources

Author	Year of Publication	Study Location	Design	Data Source
Zulkifli et al.	2023	Malaysia	Qualitative	Interview
Agostine et al.	2023	USA	Qualitative	Observation
Patel et al.	2023	-	Qualitative	Literature Review
Pilar Ribate et al.	2023	-	Qualitative	Observation
He	2023	China	Qualitative	Observation and interview
Marcham and Tavassoli	2023	United Kingdom	Quantitative	Observation
Rodrigues et al.	2023	Portugal and Sweden	Quantitative	Questionnaire
Nikolarazi et al.	2023	Greece	Qualitative	Observation
Vinoliya and Ponniah	2023	India	Qualitative	Interview
Humam et al.	2023	Indonesia	Mixed method	Observation and response
Opoku et al.	2023	United Kingdom	Quantitative	Questionnaire
Othmani et al.	2023	Malaysia	Qualitative	Interview
Mokmin	2023	Malaysia	Qualitative	Interview and observation

Thematic Analysis*Challenges in Sensory-Based Instruction*

The primary challenges in implementing sensory-based instruction for students with special needs often revolve around a lack of learning materials, inappropriate learning environments, and limited teacher competencies. Zulkifli et al. (2023) highlighted the scarcity of sensory stimulation materials, insufficient teacher knowledge, and continued reliance on outdated teaching methods. Agostine et al. (2023) and Patel et al. (2023) emphasised how non-inclusive classroom design and passive daily routines inhibit meaningful learning for students with sensory or developmental disorders. Marcham and Tavassoli (2023) pointed to the issue of hyporeactivity in autistic children, which often results in behaviour that obstructs the learning process. In the context of deaf and hard-of-hearing students, Rodrigues et al. (2023) and Nikolarazi et al. (2023) identified difficulties related to visual attention, distractions, and the lack of comprehensive inclusive education programs. Humam et al. (2023) noted the absence of "deaf space" principles in classroom design, while Othmani et al. (2023) highlighted the importance of natural environments, such as sensory gardens, in helping special needs students adjust while enhancing their cognitive and social abilities. Together, these studies underline the need for holistic, inclusive, and responsive sensory-based teaching approaches tailored to individual learner needs.

The Role of Technology

Although technology holds significant potential to support the learning of students with special needs, several studies have identified key challenges in its implementation. Mokmin (2023) reported limitations in the application of augmented reality (AR) within adaptive physical education due to insufficient research and difficulties in aligning the technology with individual student needs. Study 5 (2020) highlighted the lack of screen readers and alternative text tools in visual-based education for students with visual impairments. Pilar Ribate et al. (2021) also noted the challenges of delivering sensory stimulation activities via remote communication during the COVID-19 pandemic, especially for students with intellectual disabilities. These findings illustrate that, while technology can bridge sensory and communication gaps, it still requires design adaptation, teacher training, and further research to ensure genuine inclusivity and effectiveness.

Innovative Approaches

Contemporary research has introduced various innovative strategies in response to the ongoing challenges in special education. Vinoliya and Ponniah (2023) proposed the OPARI intervention, which integrates therapeutic and neurocognitive principles to support students with dyslexia. Study 5 (2020) highlighted the development of learning aids based on tactile data and sonification, providing alternative sensory modalities for improved accessibility. Pilar Ribate et al. (2023) contended that multidisciplinary collaboration in service-learning facilitates the creation of comprehensive and meaningful learning activities for students with special needs. Humam et al. (2023) introduced classroom design based on the "deaf space" concept to support the learning of deaf students, while Othmani et al. (2023) recommended sensory gardens as a therapeutic and integrative approach. Meanwhile, Nikolarazi et al. (2023) emphasised multi-stakeholder collaboration to ensure that disaster risk reduction (DRR) education programs are genuinely inclusive. These approaches illustrate a shift from conventional pedagogy to more dynamic, responsive, and learner-friendly strategies suited to special education contexts.

Article Analysis

Following the general review of articles, the researcher conducted a detailed analysis based on the specific findings of each study. Several key elements were identified as recurring challenges in teaching students with special needs. These elements are summarised in Table 4, which also categorizes the reviewed articles according to the thematic components present in each.

Table 4

Summary of Challenges in Sensory-Based Instruction

No.	Author	Main Theme	Discussion/ Findings
1.	Zulkifli et al.	Lack of materials, teacher training, and continued use of traditional methods	The main challenges in teaching the Quran to students with special educational needs include a shortage of sensory stimulation materials, limited teacher knowledge, insufficient instructional time, difficulties managing student behaviour, reliance on outdated traditional teaching methods, low parental involvement, and physical disabilities that hinder access to learning.
2.	Agostine et al.	Inappropriate classroom design and lack of interactive teaching approaches	This study identified several key challenges faced by students with severe disabilities in special education classrooms, including limited sensory experiences, passive daily routines, and teaching methods that lack interactivity, often resulting in long waiting times. These factors collectively hinder students from engaging in rich and meaningful learning experiences.
3.	Patel et al.	Non-inclusive classroom design	A major challenge in classrooms for students with special needs, such as those with autism spectrum disorder (ASD), intellectual disability (ID), and emotional disturbance (ED), is the lack of classroom designs that accommodate students' sensory needs. Most classrooms are arranged temporarily and fail to address these unique requirements, making it difficult for students to focus, interact, and engage in the learning process. The lack of comprehensive design principles further worsens the situation, highlighting the urgent need to establish well-structured, inclusive educational spaces that address the diverse sensory and learning needs of students with disabilities.
4.	Pilar Ribate et al.	Limitations in teaching methods and the need for interdisciplinary collaboration	In a service-learning project, a key challenge involved conducting sensory and physical stimulation activities for children with intellectual or developmental disabilities via remote communication, such as video calls, due to health-related constraints. Furthermore, coordinating university students from diverse disciplines such as pharmacy and education required effective collaborative strategies. Special education teachers also faced difficulties in ensuring that these activities were truly beneficial for special needs students, underscoring the need for stronger interdisciplinary collaboration.
5.	He	Lack of learning aids and alternative instructional design	A central issue in visual education for students with visual impairments is the lack of access to standard visual literacy education, as tools such as alternative texts and screen readers are insufficient to bridge the learning gap. This study highlights the challenge of developing suitable learning approaches through alternative sensory channels, including the need for assistive learning tools such as interactive storytelling prototypes that incorporate tactile data and sonified narratives. Additionally, ensuring the effectiveness of such tools remains difficult, requiring

			<p>further research and customisation to promote educational equity.</p>
6.	Marcham and Tavassoli	Sensory reactivity and the need for tailored therapy	<p>A key challenge identified in this study is the variation in sensory reactivity among children with autism, which significantly influences their behaviour in classroom settings. Specifically, hyporeactivity was found to be strongly associated with behaviours that hinder learning, while less supportive of behaviours that facilitate engagement. In contrast, hyperreactivity and sensory-seeking behaviours did not show a significant correlation with classroom behaviour. These findings underscore the need for customised occupational therapy approaches that specifically address the needs of students with hyporeactive sensory profiles.</p>
7.	Rodrigues et al.	Teacher perceptions and challenges in visual attention among deaf students	<p>A major challenge in teaching deaf and hard-of-hearing (DHH) students lies in the mixed perceptions held by teachers regarding the students' visual abilities and attention processes. While teachers often believe that DHH students possess superior visual skills compared to their hearing peers, they also report significant difficulties related to visual attention, distractions, cognitive load, and classroom communication barriers. These misperceptions underscore the importance of targeted teacher training, the dissemination of evidence-based knowledge, and stronger collaboration between researchers and educators as essential steps toward improving the quality and effectiveness of special education practices.</p>
8.	Nikolarazi et al.	Need for collaboration and inclusivity in exceptional education programs	<p>This study identified the central challenge of ensuring access and participation for children with sensory disabilities, such as DHH and visually impaired (VI) learners, in disaster risk reduction (DRR) education. The design and implementation of inclusive DRR learning programs require effective collaboration among teachers, researchers, schools, informal learning centres, and various organisations. This underscores a critical need for interdisciplinary approaches and collaborative practices to ensure the development of education programs that are both inclusive and accessible to all learners.</p>
9.	Vinoliya and Ponniah	Insufficient instructional strategies for students with dyslexia	<p>A key challenge in addressing dyslexia within Indian public schools is the inadequacy of teaching strategies for students with reading difficulties, alongside a lack of suitable special education provisions and limited teacher awareness of student needs. Educators face constraints in delivering effective pedagogy and providing supportive facilities for intervention. The study advocates for the adoption of targeted reading interventions such as the Occupational Participation and Adaptation to Reading Intervention (OPARI), which integrates therapeutic principles and neurocognitive activation to enhance classroom learning outcomes.</p>

10.	Humam et al.	Classroom design that does not reflect “deaf space” principles	For deaf students, one of the main challenges in mainstream classrooms is the difficulty in communication caused by environments not tailored to their needs. Classrooms that neglect “deaf space” principles, such as furniture arrangement, sensory access, lighting, and colour choices, can hinder both learning and oral communication. This study demonstrates that adapted classroom designs, including the use of calming green tones and seating arrangements that support “deaf space” concepts, can significantly improve comfort, focus, and learning motivation for deaf students.
11.	Opoku et al.	Lack of resources for inclusive education	A significant challenge in implementing inclusive education in mainstream schools in Ghana is the shortage of adequate resources to support students with sensory impairments, including hearing and visual disabilities. Although students reported relatively positive perceptions of available resources, differences emerged based on the type of disability, gender, and grade level. This study calls on policymakers to expedite resource provision to ensure the effective implementation of inclusive practices.
12.	Othmani et al.	Need for appropriate sensory learning environments (e.g., sensory gardens)	This study identified a major challenge concerning the need to provide suitable learning environments for special education students requiring sensory integration support. At Sekolah Rendah Kebangsaan Bukit Payong, educators faced difficulties in creating learning spaces designed to meet the unique needs of these students. The absence of natural elements and designated areas such as sensory gardens deprived students of essential sensory therapy needed to enhance focus, cognitive ability, language development, gross motor skills, and social interaction. The study advocates for the design of sensory gardens as a therapeutic approach to support students in overcoming learning challenges.
13.	Mokmin	Limitations in the application of augmented reality (AR) in special education	A primary challenge in integrating augmented reality (AR) into adaptive physical education (APE) for students with specific learning disabilities (SLDs) lies in the lack of research and practical application of AR in special education contexts. Students with learning disabilities require adaptive learning experiences that resemble those of their peers. However, difficulties in customising AR to accommodate their specific needs have limited its potential as a learning tool. This study seeks to examine how augmented reality (AR) influences learning experiences in adaptive physical education (APE), with the goal of identifying inclusive and engaging teaching approaches that better support both students with learning disabilities and their teachers

Discussion

Special education continues to face a range of complex challenges, reflecting an urgent need for more inclusive, innovative, and learner-centred approaches. These challenges encompass

instructional materials, classroom design, technology, and sensory behaviour, each of which collectively influences the effectiveness of learning for students with special needs. Despite growing awareness of the importance of inclusive education, the gap between policy and practice remains wide, especially in accommodating the diverse needs of learners with disabilities. Furthermore, inconsistencies in teacher preparation, limited access to specialised resources, and the absence of collaborative systems exacerbate educational inequities. Addressing these multifaceted issues requires a strategic blend of pedagogical innovation, environmental adaptation, technological advancement, and coordinated support from all educational stakeholders.

Lack of Materials and Instructional Strategies

Zulkifli et al. (2023) identified a lack of sensory stimulation materials and insufficient teacher knowledge as major barriers in teaching the *Quran* to students with special educational needs. Teachers struggle to prepare appropriate teaching materials to support the unique needs of these learners, and low parental involvement further compounds the difficulty. In the context of foundational education, Vinoliya and Ponniah (2023) emphasised that inadequate instructional strategies hinder effective intervention for students with dyslexia. They proposed the Occupational Participation and Adaptation to Reading Intervention (OPARI) as a possible solution to enhance students' learning capacity; however, its implementation would require additional training and resources. These findings underscore the need for comprehensive teacher training and the development of relevant teaching materials to ensure pedagogical strategies are truly responsive to the needs of special learners.

Inadequacy of Learning Environment Design

A lack of well-designed learning environments remains a critical barrier to students' academic and developmental progress. Patel et al. (2023) noted that temporary classroom arrangements often fail to account for the sensory needs of students with autism spectrum disorder (ASD) and intellectual disability (ID), resulting in difficulties with concentration and interaction. Additionally, Humam et al. (2023) emphasised the importance of integrating "deaf space" elements, such as strategic furniture arrangement, appropriate lighting, and calming colour choices, to improve the learning experience for deaf students. Othmani et al. (2023) further highlighted that sensory gardens serve as a therapeutic approach that supports focus, social interaction, and motor skill development. Sensory-friendly and inclusively designed environments are fundamental in supporting both the well-being and learning effectiveness of special needs students, thereby reinforcing the foundation for comprehensive education policy.

Challenges in the Implementation of Technology

Technology plays a crucial role in enhancing the learning experience, yet its application in special education remains limited. Mokmin (2023) found a lack of research on the use of augmented reality (AR) in adaptive physical education (APE) for students with learning disabilities. While AR presents opportunities to create more engaging learning experiences, its implementation requires adaptation and access to appropriate technological resources. In the context of visual learning, He (2023) highlighted challenges in developing learning aids such as interactive storytelling prototypes with sonified narratives for students with visual impairments. These challenges highlight a broader need for innovation and

continued research to develop tools that are genuinely inclusive and adaptable to diverse learner needs. The integration of technology in special education thus requires innovative strategies and investment in research and development.

Sensory Behaviour and Communication Challenges

Sensory behaviour differences and communication limitations remain key obstacles in special education. Marcham and Tavassoli (2023) found that hyporeactivity among autistic students is closely associated with behaviours that obstruct learning, emphasising the need for tailored occupational therapy interventions. In the case of deaf students, Rodrigues et al. (2023) reported that inconsistent teacher perceptions of students' visual capabilities lead to difficulties in managing distractions and communication within the classroom. These studies emphasise the critical need for comprehensive teacher training to effectively support students with sensory differences. Addressing the needs of learners with sensory and communication challenges demands a deep understanding of their unique profiles, intensive professional development, and the implementation of targeted intervention strategies to foster meaningful interaction and effective learning within the classroom.

Need for Collaboration and Resource Support

Collaboration among stakeholders is a critical element in the success of special education. Nikolarazi et al. (2023) stressed that effective disaster risk reduction (DRR) programs for students with sensory disabilities require cooperation among teachers, researchers, and informal organisations. Pilar Ribate et al. (2023) added that implementing effective remote learning for students with intellectual disabilities demands strong interdisciplinary collaboration. At the global level, Opoku et al. (2023) called for enhanced resource provision to ensure that inclusive education can be effectively realised in mainstream schools. The implementation of effective special education relies heavily on cross-sector collaboration and adequate resource allocation to support learners with special needs in a sustainable and holistic manner.

In conclusion, the above discussion highlights the multifaceted challenges of special education, including deficiencies in materials, inadequate environment design, limitations in technology integration, sensory-related behavioural issues, and the need for collaborative support systems. Addressing these challenges requires innovative, student-centred, and inclusive approaches, supported by policy reforms, sufficient resources, and multi-stakeholder cooperation to establish an educational system that truly meets the diverse needs of all learners.

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