



Multisensory learning adaptation for totally blind preschool student at SLBN A Citeureup

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ABSTRACT

Preschool children with total blindness require adaptive learning approaches that optimize nonvisual sensory modalities to compensate for limited visual access. Although multisensory learning is widely recommended in special education, empirical research on its implementation among young children with total blindness remains limited. This study describes multisensory learning adaptation for preschool children with total blindness at SLBN A Citeureup Cimahi, focusing on learner characteristics, instructional adaptation, teacher roles, the learning environment, and implementation challenges. Using a qualitative instrumental case study design, data were collected through classroom observations, an in-depth teacher interview, and document analysis, then analyzed thematically. Findings show that integrating tactile, auditory, and kinesthetic stimulation was the primary approach supporting concept development, engagement, and independence, with the teacher acting as a sensory mediator through concrete materials and a structured environment. This study affirms multisensory learning as a primary, not merely supplementary, instructional approach for early childhood education of children with total blindness.

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ABSTRAK

Anak tunanetra total pada jenjang taman kanak-kanak memerlukan adaptasi pembelajaran yang mampu menggantikan keterbatasan visual melalui pemanfaatan indera nonvisual secara optimal. Meskipun pembelajaran multisensori telah lama direkomendasikan dalam pendidikan khusus, kajian empiris mengenai implementasinya pada anak tunanetra total usia dini masih terbatas. Penelitian ini bertujuan untuk mendeskripsikan adaptasi pembelajaran multisensori bagi anak tunanetra total pada jenjang taman kanak-kanak di SLBN A Citeureup Cimahi, yang meliputi karakteristik peserta didik, bentuk adaptasi pembelajaran, peran guru, lingkungan belajar, serta tantangan dalam implementasinya. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus instrumental. Data dikumpulkan melalui observasi pembelajaran, wawancara mendalam dengan guru, serta telaah dokumentasi, kemudian dianalisis menggunakan analisis tematik. Hasil penelitian menunjukkan bahwa integrasi stimulasi taktil, auditori, dan kinestetik menjadi pendekatan pedagogis utama untuk mendukung pemahaman konsep, keterlibatan belajar, serta pengembangan kemandirian anak tunanetra total. Guru berperan sebagai mediator sensori yang merancang pengalaman belajar secara sistematis dengan memanfaatkan media konkret serta lingkungan belajar yang terstruktur. Penelitian ini memberikan bukti empiris bahwa pembelajaran multisensori perlu diposisikan sebagai pendekatan utama, bukan sekadar strategi pendukung, dalam pendidikan anak usia dini bagi anak tunanetra total.

Kata Kunci: adaptasi pembelajaran multisensori; anak prasekolah; tunanetra

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INTRODUCTION

Learning for children with total blindness requires a curriculum and instructional approach that accommodates their developmental characteristics and sensory needs. At the preschool level, learning experiences are primarily developed through direct interaction with the surrounding environment using multiple sensory modalities. However, children with total blindness cannot rely on visual perception to acquire information, making instructional adaptation an essential pedagogical requirement. The absence of functional vision can constrain opportunities for incidental learning and concept development that are commonly supported by visual observation and exploration. Research on differentiated instruction for students who are blind or have low vision further emphasizes the need to adapt instructional practices according to learners' individual access needs rather than relying on uniform instructional procedures (Vaughn et al., 2023).

Consequently, learning activities should be designed to maximize tactile, auditory, and kinesthetic experiences, enabling children to construct meaningful concepts despite the absence of visual input (Hatira & Sarac, 2024; Kachur, 2025). The implementation of adaptive learning for children with visual impairments has become increasingly important in promoting equitable and inclusive education. Curriculum implementation should accommodate learners' developmental characteristics and functional access needs rather than rely on standardized instructional procedures. For preschool children with total blindness, adaptive learning should extend beyond curriculum content to include adjustments to instructional methods, learning environments, educational materials, and assessment strategies. Such adaptations are important because accessible learning experiences can support children's participation and engagement while reducing barriers associated with visual access.

Recent research on preschool children with visual impairment similarly emphasizes the importance of developmentally appropriate instructional materials and specialized pedagogical support in early learning contexts (Awang et al., 2024). Previous studies have consistently reported that multisensory learning enhances learning engagement, concept acquisition, and information retention among learners with visual impairment. Tactile teaching aids have been demonstrated to support learning among children with blindness (Wu, 2023). Similarly, integrating tactile and auditory modalities can provide alternative pathways for accessing information that is conventionally presented visually, particularly when instructional materials are designed to meet the sensory access needs of learners with visual impairments (Wegwerth et al., 2023).

Recent research has also explored multisensory technologies to provide accessible experiences for young children with visual impairment, particularly by integrating multiple sensory cues during early intervention (Gori et al., 2025). In addition, auditory representations and sonified learning environments have demonstrated potential for supporting conceptual learning among learners who are blind by complementing or compensating for visual information (Peleg et al., 2024). These findings provide evidence that multisensory learning can facilitate access to learning experiences by providing opportunities for learners to receive and process information through multiple sensory modalities. However, existing studies have predominantly focused on elementary and

secondary education and have generally examined multisensory learning as an instructional technique rather than as a comprehensive adaptive approach in early childhood education. Despite the increasing body of literature, limited empirical research has examined how multisensory learning is systematically adapted for preschool children with total blindness in authentic classroom settings.

Existing studies have addressed tactile learning, accessible instructional materials, and educational support for children with visual impairments. However, fewer have examined how learner characteristics, instructional strategies, teacher practices, learning environments, and instructional media interact in everyday preschool learning. This gap is particularly important because early childhood learning requires developmentally appropriate experiences that support the formation of foundational concepts through direct sensory interaction. Therefore, further investigation is needed to understand how multisensory learning can be adapted to the characteristics and sensory needs of preschool children with total blindness in actual special-school settings. This study addresses this gap by investigating the adaptation of multisensory learning and positioning it not only as a teaching strategy but also as an adaptive pedagogical framework that supports curriculum implementation for children with total blindness.

The novelty of this study lies in providing contextual empirical evidence on how tactile, auditory, and kinesthetic experiences are systematically integrated into learning activities through the interplay among teachers, learning environments, instructional media, and classroom practices. Furthermore, the study highlights the role of teachers as sensory mediators who facilitate meaningful learning experiences by adapting instructional processes according to children's developmental characteristics. Accordingly, the objective of this study is to describe the implementation of multisensory learning adaptation for preschool children with total blindness at SLBN A Citeureup Cimahi by examining learner characteristics, instructional adaptations, teacher roles, learning environments, and implementation challenges. The findings are expected to contribute to the development of adaptive curriculum implementation and provide practical recommendations for improving instructional practices in early childhood special education.

LITERATURE REVIEW

Multisensory Learning for Children with Total Blindness

Multisensory learning facilitates learning by integrating tactile, auditory, kinesthetic, and other relevant sensory experiences rather than relying primarily on visual input. For children with total blindness, these modalities provide accessible pathways to information and concept development through touch, hearing, movement, and direct interaction with concrete objects. Recent research demonstrates that tactile and auditory strategies can support concept learning and connect bodily experiences with emerging abstract concepts among learners with visual impairment (Marlair et al., 2024; Tipi et al., 2023). Multisensory learning therefore involves not only the use of multiple sensory modalities but also the intentional organization of sensory experiences according to learners' characteristics, learning objectives, and contexts (Guarisch et al., 2025).

Multisensory learning should be implemented as an adaptive process rather than a fixed instructional technique. Teachers need to consider children's characteristics, learning objectives, available materials, and responses to sensory stimulation when determining appropriate modalities and instructional strategies. This adaptive orientation is important because learners with visual impairment may have different access requirements and responses to instructional materials (Tuttle & Carter, 2024). For preschool children, such adaptation is particularly relevant because learning is closely associated with direct experience, object manipulation, environmental exploration, movement, and social interaction. For children with total blindness, these experiences need to be intentionally organized through tactile exploration, auditory information, movement, and repeated interaction with meaningful objects and situations (Peltokorpi et al., 2024).

Learning Adaptation for Preschool Children with Total Blindness

Learning adaptation involves systematic modifications to instructional planning and implementation to accommodate learners' characteristics while maintaining intended educational objectives. In special education, adaptation may include teaching strategies, learning materials, classroom environments, accessibility features, assessment, and individualized support. For learners with visual impairment, effective adaptation requires attention to the relationship between functional characteristics and accessible instructional and environmental conditions. Recent evidence emphasizes adaptive learning environments, multisensory approaches, assistive technology, and collaborative support as important components of equitable educational access (Diasse & Kawai, 2024). For preschool children with total blindness, learning adaptation needs to integrate developmental and sensory characteristics.

Concepts commonly presented visually need to be transformed into meaningful tactile, auditory, and kinesthetic experiences that enable active participation in classroom activities (Tipi et al., 2023). A supportive environment is also essential because classroom organization, movement pathways, material placement, and environmental predictability influence children's opportunities to explore and participate safely. Inadequate resources, limited accessibility, and inflexible pedagogical practices may constrain meaningful participation among learners with visual impairment (Negash & Gasa, 2022). Instructional media provide additional pathways for adapting learning content to nonvisual access. Tactile graphics, concrete objects, manipulatives, audio resources, and multimodal technologies can support access to information through sensory pathways that do not depend primarily on vision (Wu, 2025).

Recent developments have combined tactile graphics with auditory feedback and other sensory cues to provide alternative routes for experiencing and interpreting information (Welewatta et al., 2024; Wu, 2025). However, technological sophistication does not necessarily guarantee accessibility, as digital resources may remain inaccessible when interfaces rely heavily on visual information or lack compatibility with assistive technologies (Kerdar et al., 2024). Therefore, instructional media should be selected according to accessibility, developmental appropriateness, instructional relevance, and children's ability

to interact meaningfully with the resources. Overall, learning adaptation for children with visual impairment should be understood as an integrated process involving instructional strategies, sensory experiences, learning environments, instructional media, accessibility features, and individualized support. Its effectiveness depends not only on the sensory modalities used but also on how teachers organize and adjust these experiences according to children's characteristics and responses.

The Role of Teachers and Learning Environment in Multisensory Learning

Teachers play a central role in multisensory learning as instructors, facilitators, and mediators of children's sensory experiences. For children with total blindness, teachers transform curricular content into meaningful nonvisual experiences through verbal descriptions, guided tactile exploration, movement activities, and interactions with concrete materials. Recent studies emphasize the importance of teacher-mediated multisensory instruction and accessible learning environments in supporting concept development, participation, and independence among learners with visual impairment (Diasse & Kawai, 2024; Guarischi et al., 2025; Tipi et al., 2023).

The effectiveness of multisensory learning also depends on the interaction between supportive environments, adaptive materials, and systematic teacher guidance. Structured classrooms and appropriately adapted materials can facilitate engagement and provide opportunities for children to develop concepts through meaningful sensory experiences (Diasse & Kawai, 2024; Toor & Paterson, 2026). Concrete objects, tactile graphics, audio resources, manipulatives, and real-life experiences are particularly relevant because they allow children to construct knowledge through direct interaction. Thus, effective multisensory learning depends not simply on the number of sensory modalities used, but on how teachers organize the environment and adapt instructional materials to learners' characteristics and needs.

Previous Studies on Multisensory Learning for Children with Visual Impairment

Previous studies have examined tactile strategies, accessible instructional media, assistive technologies, and alternative sensory pathways to facilitate learning and participation among learners with visual impairment. These approaches have shown potential for supporting conceptual understanding, literacy, engagement, independent participation, and access to learning information (Micheletti et al., 2025; Nordin et al., 2024; Toor & Paterson, 2026). However, much of the existing research has focused on specific educational domains, technologies, or instructional materials rather than examining multisensory learning as an integrated pedagogical process. This limitation is particularly evident in research involving young children with total blindness.

Although early childhood is a critical period for developing foundational concepts through direct interaction with people, objects, and the environment, limited research has examined how multisensory experiences are adapted within authentic preschool classroom practices. Research has addressed bodily-tactile intervention, tactile learning, accessible technologies, and instructional adaptations, but these studies have generally focused on individual components of accessibility rather than their interaction within everyday preschool

instruction (Awang et al., 2024; Marlair et al., 2024; Peltokorpi et al., 2024). Another gap concerns the relationship among learner characteristics, teacher practices, learning environments, and instructional media.

Recent evidence emphasizes coordinated adaptation of instructional practices, learning environments, accessibility features, and support systems for learners with visual impairment (Diasse & Kawai, 2024; Kerdar et al., 2024). Nevertheless, limited attention has been paid to how teachers dynamically coordinate these components in response to children's developmental characteristics, sensory responses, and classroom participation. In particular, further evidence is needed regarding how tactile, auditory, and kinesthetic experiences are selected, combined, and modified during learning for preschool children with total blindness. The present study addresses this gap by conceptualizing multisensory learning as an integrated adaptive pedagogical process rather than a single instructional technique, sensory intervention, or technological application.

It examines the interaction among learner characteristics, teacher mediation, instructional strategies, learning environments, instructional media, and classroom implementation within an authentic preschool setting at SLBN A Citeureup Cimahi. The study therefore provides contextual empirical evidence concerning how multisensory learning is adapted to support access, participation, and concept development among preschool children with total blindness. Accordingly, this study aims to examine: 1) The adaptation of multisensory learning for preschool children with total blindness by analyzing children's characteristics and sensory learning needs; 2) Adaptations of instructional methods and strategies; the roles of teachers, learning environments, and instructional media; and 3) The challenges and solutions encountered during implementation.

METHODS

This study employed a qualitative approach, using an instrumental case study design, to examine the implementation of a multisensory learning adaptation for preschool children with total blindness. The study focused on the processes and contexts of multisensory learning adaptation in an early childhood special education setting. The research examined learner characteristics, instructional adaptations, teacher roles, learning environments, instructional media, and challenges encountered during the implementation of multisensory learning. The study was conducted at SLBN A Citeureup Cimahi, West Java, Indonesia, a public special school providing educational services for learners with visual impairment, including preschool education.

The research site was purposively selected because the school consistently implements nonvisual sensory-based instructional practices and has extensive experience in providing educational services for preschool children with total blindness. Participants were selected through purposive sampling based on their direct involvement in multisensory learning. The study involved one preschool teacher responsible for implementing multisensory learning and two preschool children with total blindness who participated in daily classroom activities. The teacher served as the primary informant, while the children were observed to examine their learning processes, participation, and responses during multisensory instruction. Data

were collected through classroom observations, semi-structured interviews, and document analysis.

Classroom observations were conducted to examine the adaptation of instructional methods, strategies, teaching techniques, learning media, and classroom environment during multisensory learning activities. Semi-structured interviews were undertaken with the preschool teacher to explore instructional experiences, pedagogical considerations, and challenges encountered in implementing multisensory learning for preschool children with total blindness. Document analysis included lesson plans, children's developmental records, instructional media, and documentation of classroom activities. Data were analyzed through data condensation, data display, and conclusion drawing and verification. The trustworthiness of the findings was ensured through source and methodological triangulation, member checking with the preschool teacher as the primary informant, and the use of field notes and documentary evidence to support data interpretation.

RESULTS AND DISCUSSION

Characteristics of Preschool Children with Total Blindness

The findings showed that preschool children with total blindness at SLBN A Citeureup Cimahi relied primarily on auditory, tactile, and kinesthetic modalities during learning. Classroom observations indicated that they required concrete, repetitive, and direct sensory experiences to engage with learning content. When concepts such as objects, shapes, textures, quantities, and sequences were presented mainly through verbal explanations, the children had difficulty forming clear representations without opportunities for tactile or physical exploration.

The children showed greater engagement when teachers combined real objects, structured verbal descriptions, repetition, and simple movement activities. These observations indicate that learning for preschool children with total blindness needs to connect verbal information with concrete sensory experiences that can be directly explored. The combination of developmental characteristics and total blindness therefore provided the basis for adapting instruction through accessible multisensory experiences.

Adaptation of Multisensory Learning Methods, Strategies, and Techniques

The teacher adapted learning by integrating tactile, auditory, and kinesthetic stimulation through experiential and thematic approaches. Activities included exploration of real objects through touch, structured verbal explanations, repetition, and simple movement. At the same time, strategies involved tactile-auditory integration, concrete demonstrations, guided tactile exploration, audio modeling, and play-based multisensory activities.

Multisensory instruction was implemented flexibly rather than through a fixed model. The teacher adjusted the intensity, duration, and combination of sensory stimulation based on children's responses and participation, providing repeated, meaningful experiences while avoiding excessive stimulation. This flexibility enabled instructional activities to remain responsive to individual sensory and developmental needs.

The Role of Teachers, Learning Environment, and Instructional Media

The findings demonstrated that the teacher played a central role as a sensory mediator, transforming instructional content into learning experiences accessible via nonvisual sensory pathways. Beyond providing instruction, the teacher designed sensory experiences, offered detailed verbal descriptions, and guided children's tactile exploration in a safe, structured manner. These practices enabled children to interact with learning content through tactile, auditory, and kinesthetic experiences while receiving continuous guidance throughout the learning activities.

The classroom environment was organized to be safe, structured, and predictable through consistent classroom layouts, tactile markers, and minimal auditory distractions. Instructional media included real objects, simple tactile teaching aids, audio recordings, educational songs, and movement-based learning activities. For example, real objects and tactile materials were used to support children's exploration of shapes, textures, and quantities. At the same time, audio recordings, songs, and movement activities provided auditory and kinesthetic experiences that complemented tactile exploration.

Challenges and Solutions in Implementing Multisensory Learning

This study identified several challenges in implementing multisensory learning at the preschool level, including the limited availability of specialized tactile instructional materials, differences in children's sensory characteristics, and limited instructional time. These conditions required the teacher to adapt learning activities according to the children's individual needs and the resources available in the classroom. The teacher also faced challenges in designing multisensory activities that were systematic, developmentally appropriate, and sufficiently flexible to accommodate differences in children's responses to sensory stimulation.

To address these challenges, the teacher developed simple tactile instructional materials using readily available objects and everyday materials as tactile teaching media. Flexible and repetitive instructional practices were also implemented to provide children with repeated opportunities to explore and understand learning content through sensory experiences. Collaboration among teachers and continuous reflection on instructional practices further supported the development of more appropriate multisensory learning activities and improved the quality of implementation.

Discussion

The findings demonstrate that multisensory learning adaptation played an important role in supporting learning among preschool children with total blindness at SLBN A Citeureup Cimahi. The integration of tactile, auditory, and kinesthetic experiences provided accessible pathways for children to interact with learning content and develop concepts through direct sensory exploration. This finding is consistent with research showing that multisensory approaches can combine haptic, auditory, and other sensory modalities to create accessible learning experiences for learners with visual impairment (Diasse & Kawai, 2024). Research

on multisensory training has also demonstrated that linking auditory feedback with bodily movement can strengthen spatial representation and support functional interaction with the environment among individuals with blindness (Senna et al., 2024).

In the present study, this approach was particularly relevant at the preschool level because learning required concrete, repetitive, and developmentally appropriate experiences rather than reliance on verbal explanations alone. Tactile experience was particularly important through the use of real objects and concrete exploration. Children were able to touch, manipulate, and explore objects while receiving verbal explanations and teacher guidance, thereby connecting sensory experiences with emerging concepts. This finding corresponds with evidence that tactile strategies can support conceptual understanding by connecting bodily actions with learning processes (Marlair et al., 2024), while bodily-tactile interaction has also been shown to support participation and reciprocal interaction among young children with visual impairment (Peltokorpi et al., 2024).

Recent research further demonstrates that tactile instructional resources can facilitate the representation and exploration of otherwise abstract content for blind and low-vision learners (Fuentes, 2025). Evidence on tactile exploratory strategies also indicates that active touch can help learners examine object properties and construct knowledge through kinesthetic reasoning (Papazafiri & Argyropoulos, 2025). Thus, tactile learning in the present study functioned not merely as a replacement for visual information but as an active pathway for exploration and meaning-making. Multisensory learning was also implemented through continuous instructional adjustment rather than a fixed sequence of activities. The teacher modified methods, strategies, repetition, duration, and combinations of sensory stimulation according to children's participation and responses.

This finding is consistent with evidence emphasizing individualized instructional practices and accessible learning environments for learners with visual impairment (Diasse & Kawai, 2024; Juma & Ntulo, 2024), as well as research highlighting the importance of differentiated instruction and classroom adaptations for students who are blind or have low vision (Vaughn et al., 2023). Recent research likewise demonstrates that instructional activities may require systematic adaptation to accommodate the access needs of learners with visual impairment (Fanshawe et al., 2024). Beyond providing instruction, the teacher served as a sensory mediator by guiding exploration, offering verbal descriptions, organizing movement, and connecting sensory experiences to learning objectives. Such teacher mediation is important because accessible materials alone do not necessarily ensure meaningful learning, particularly when learners require guidance in interpreting and connecting sensory information (Hayes & Proulx, 2024).

The accessibility of the learning environment and instructional media also supported the implementation of multisensory learning. The integration of tactile and auditory experiences in the present study is also consistent with recent research on auditory-haptic learning among individuals with visual impairment. This demonstrated the potential of combining tactile and auditory feedback to create multisensory learning experiences for individuals with blindness. In the present study, a similar principle was observed through the combination of tactile exploration, verbal explanations, songs, and audio materials. However, these experiences were implemented using simple classroom resources rather than specialized technology (Föcker et al., 2025). This finding suggests that multisensory learning can be

adapted to available resources when teachers intentionally coordinate different sensory modalities to meet children's learning needs.

The use of instructional media further reflected this adaptive approach. These practices correspond with research demonstrating the potential of haptic and multimodal resources to provide alternative access to information for learners with visual impairment (Alimovic, 2024; Wu, 2025), while multisensory adaptations have also been used to transform conventionally visual activities into more accessible learning experiences (Begeske et al., 2023). Effective instructional media do not necessarily require sophisticated technology; rather, accessibility, relevance, and developmental appropriateness are more important considerations. The challenges identified in the study further demonstrate that contextual conditions influenced adaptation to multisensory learning.

Limited specialized tactile materials, differences in children's sensory characteristics, and limited instructional time required the teacher to modify available resources and provide flexible and repetitive activities. Similar challenges related to resources, accessibility, and instructional support have been reported in studies involving learners with visual impairments (Juma & Ntulo, 2024; Negash & Gasa, 2022). Although technology can expand access through combinations of tactile, auditory, and other sensory cues (Welewatta et al., 2024), its use should remain responsive to learners' actual access needs, as digital resources may still present accessibility barriers (Kerdar et al., 2024). In the present context, therefore, everyday materials and teacher creativity provided practical alternatives when specialized resources were unavailable.

Taken together, the findings suggest that multisensory learning adaptation should be understood as an integrated instructional process rather than a single teaching technique. This process involves children's sensory and developmental characteristics, teacher mediation, accessible learning environments, instructional media, and continuous adjustment during classroom implementation. This interpretation extends previous research by bringing together dimensions that have often been examined separately, including multisensory resources, instructional adaptation, environmental accessibility, and assistive technologies (Toor & Paterson, 2026; Yektyastuti, 2026). The present study demonstrates that these components operate together in everyday preschool instruction and are continuously adjusted in response to children's responses.

The contribution of this study lies in its contextual description of multisensory learning adaptation within an authentic preschool special education setting. Rather than examining a single instructional technique or technological intervention, the study integrates learner characteristics, instructional adaptation, teacher mediation, learning environment, instructional media, and implementation challenges within a single classroom context. This perspective provides empirical insight into how multisensory learning can function as an adaptive pedagogical process for preschool children with total blindness. Nevertheless, the findings are contextually bounded because the study involved one preschool teacher and two children with total blindness at SLBN A Citeureup Cimahi. Therefore, future research involving multiple teachers, schools, and learners is needed to examine the transferability of these findings.

CONCLUSION

This study addressed the research objectives by examining the characteristics of preschool children with total blindness, the adaptation of multisensory learning, the roles of teachers and learning environments, the use of instructional media, and the challenges encountered during implementation at SLBN A Citeureup Cimahi. The findings indicate that multisensory learning adaptation was implemented by integrating tactile, auditory, and kinesthetic experiences and adjusting instructional practices to the children's developmental and sensory needs.

The findings further demonstrate that effective multisensory learning involved the interaction of adaptive instructional practices, teacher mediation, accessible learning environments, and appropriate instructional media. The teacher played an important role in facilitating children's access to learning through meaningful nonvisual sensory experiences, while flexible use of available materials supported participation and concept development. These findings highlight that multisensory learning adaptation in preschool special education is an integrated instructional process rather than the mere use of multiple sensory modalities.

The study therefore provides practical implications for teachers and special schools by emphasizing the need for flexible instructional adaptation and accessible, developmentally appropriate learning experiences for preschool children with total blindness. Although the study was conducted with one preschool teacher and two children with total blindness at SLBN A Citeureup Cimahi, the findings provide contextual evidence that can inform the development of multisensory learning practices in similar special education settings.

AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author confirms that the data and content of the article are free from plagiarism.

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