



# Multisensory approaches in Indonesian language learning for children with special needs: A literature review on inclusive and adaptive pedagogy

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## ABSTRACT

Indonesian language learning plays an important role in developing communication, literacy, and social participation among children with special needs. However, many students experience barriers in understanding vocabulary, recognizing letters and words, organizing written language, expressing ideas orally, and maintaining attention during language instruction. These challenges indicate the need for adaptive learning approaches that can make language more concrete, accessible, and meaningful. This study aims to examine the application of multisensory approaches in Indonesian language learning for children with special needs. Using a literature review method, this article analyzes relevant studies, books, and educational references related to multisensory learning, inclusive education, special education pedagogy, and language instruction. The review shows that multisensory approaches integrate visual, auditory, tactile, and kinesthetic modalities to support students' engagement and language development. In Indonesian language learning, multisensory strategies can be applied through picture cards, real objects, letter tracing, storytelling, interactive games, role play, audio-visual media, and movement-based activities. These strategies can support vocabulary acquisition, reading, writing, speaking, listening, and social communication skills. However, effective implementation requires teacher competence, appropriate learning media, classroom flexibility, and adaptation to different categories of special needs. This study highlights that multisensory learning is not merely a teaching technique, but an inclusive pedagogical approach that recognizes diverse learning pathways and supports more meaningful language learning for children with special needs.

## 1. Introduction

Language learning is a fundamental part of children's cognitive, social, and academic development. Through language, children learn to express ideas, understand information, build social relationships, and participate in classroom activities. In the Indonesian education context, Indonesian language learning plays an important role because it supports literacy development, communication skills, reading comprehension, writing ability, and participation in other subject areas. For children with special needs, however, language learning often requires more adaptive and individualized instructional strategies because they may experience various barriers in processing, understanding, and producing language [1, 2].

Children with special needs are not a homogeneous group. They may include children with intellectual disabilities, autism spectrum disorder, dyslexia, hearing impairment, visual impairment, speech and language difficulties, attention difficulties, or multiple disabilities. Each group may experience different challenges in Indonesian language learning. Some students may have difficulty recognizing letters and sounds, understanding vocabulary, following oral instructions, organizing sentences, writing words, expressing ideas, or participating in social communication. Others may require visual support, tactile materials, repeated practice, simplified instructions, structured routines, or assistive learning media. These diverse needs indicate that language instruction should not rely only on verbal explanation or written text [3–5].

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Conventional language teaching methods are often dominated by listening, reading, copying, and answering written questions. Although these methods may be effective for some students, they may not be sufficient for children with special needs who require concrete, repetitive, and sensory-rich learning experiences. When language concepts are presented only through abstract verbal explanation, students with special needs may find it difficult to connect words with meaning, sounds with symbols, or sentences with real-life communication. Therefore, Indonesian language learning for children with special needs requires an approach that can make language more visible, audible, touchable, movable, and meaningful [6, 7].

One approach that can respond to these needs is the multisensory approach. A multisensory approach is a learning strategy that involves more than one sensory modality in the learning process, including visual, auditory, tactile, and kinesthetic modalities. In language learning, visual input may include pictures, symbols, colors, letter cards, videos, and written words. Auditory input may include sounds, pronunciation, storytelling, songs, and verbal repetition. Tactile input may include touching letters, tracing words, using textured materials, or manipulating concrete objects. Kinesthetic input may involve movement, gestures, role play, body actions, and learning games. By combining several sensory channels, students are provided with multiple pathways to receive, process, remember, and express information [8–10].

The multisensory approach is particularly relevant for Indonesian language learning because language skills involve the integration of several processes. Vocabulary learning requires students to connect words with objects, actions, pictures, and meanings. Reading requires recognition of letters, sounds, syllables, words, and sentence meaning. Writing requires motor coordination, symbol recognition, spelling, and idea organization. Speaking and listening require attention, comprehension, pronunciation, memory, and social interaction. These skills can be strengthened when learning activities involve concrete materials, visual support, sound repetition, physical movement, and interactive communication [3, 11].

For children with special needs, multisensory learning can help reduce barriers in language instruction. For example, students with reading difficulties may benefit from tracing letters while pronouncing sounds. Students with intellectual disabilities may understand vocabulary more easily when words are connected to real objects and pictures. Students with autism may benefit from visual schedules, structured storytelling, and predictable language routines. Students with hearing impairment may rely more on visual and kinesthetic cues, while students with visual impairment may require tactile and auditory learning materials. This shows that multisensory learning is not a single fixed method, but an adaptive pedagogical approach that can be adjusted according to students' characteristics [12, 13].

Although the multisensory approach has been widely discussed in special education and literacy intervention, its application in Indonesian language learning for children with special needs still needs further conceptual synthesis. Many studies discuss multisensory learning in relation to reading difficulties, phonological awareness, or general literacy development. However, fewer discussions specifically connect multisensory strategies with Indonesian language learning domains such as vocabulary acquisition, reading, writing, speaking, listening, and social communication. In addition, teachers in special and inclusive education settings often need practical guidance on how multisensory strategies can be applied in classroom activities [6, 14, 15].

This gap is important because Indonesian language learning has specific characteristics. The language uses a phonemic writing system, syllabic word structures, affixes, sentence

patterns, and contextual meanings that may require different instructional strategies for children with special needs. Therefore, multisensory learning should not only be discussed as a general method, but also as an approach that can be adapted to the structure and objectives of Indonesian language instruction. A clearer conceptual understanding is needed to support teachers in designing language learning activities that are inclusive, concrete, interactive, and responsive to diverse learning needs.

This article aims to examine the application of multisensory approaches in Indonesian language learning for children with special needs through a literature review. The review focuses on how visual, auditory, tactile, and kinesthetic modalities can be used to support language development, particularly in vocabulary, reading, writing, speaking, listening, and communication skills. The article also discusses the benefits, challenges, and pedagogical implications of multisensory learning in special and inclusive education contexts.

Based on this focus, the article addresses the following research questions:

1. What multisensory strategies can be applied in Indonesian language learning for children with special needs?
2. How can multisensory approaches support vocabulary, reading, writing, speaking, listening, and communication skills?
3. What challenges may teachers face in implementing multisensory learning in special and inclusive classrooms?
4. What pedagogical principles should guide the use of multisensory approaches in Indonesian language learning for children with special needs?

The contribution of this article lies in its attempt to synthesize multisensory learning as an adaptive pedagogical approach for Indonesian language instruction. By connecting sensory-based learning strategies with specific language skills, this article is expected to provide conceptual and practical insights for teachers, special education practitioners, and researchers. It also emphasizes that effective language learning for children with special needs should not only focus on academic achievement, but also on accessibility, participation, communication, and meaningful learning experiences.

## 2. Materials and Methods

### 2.1. Research design

This study employed an integrative literature review to examine the application of multisensory approaches in Indonesian language learning for children with special needs. This design was selected because the study aims to synthesize theoretical perspectives, empirical findings, and pedagogical practices related to multisensory learning, special education, inclusive education, and language instruction. An integrative literature review allows the researcher to analyze diverse sources and develop a comprehensive understanding of how multisensory strategies can be applied to support language development among students with diverse learning needs.

The focus of this review was not limited to one disability category or one language skill. Instead, the study examined how multisensory approaches may support various domains of Indonesian language learning, including vocabulary acquisition, reading, writing, speaking, listening, and social communication. The review also considered how multisensory strategies can be adapted for different groups of children with special needs, such as children with dyslexia, intellectual disabilities, autism spectrum disorder, hearing impairment, visual impairment, speech-language difficulties, and attention-related difficulties [4, 16].

## 2.2. Sources of literature

The literature reviewed in this study consisted of peer-reviewed journal articles, academic books, conference papers, policy documents, and educational reports related to multisensory learning and language instruction for children with special needs. The sources were obtained from academic databases and search platforms such as Google Scholar, Science Direct, ERIC, Springer Link, Research Gate, and national journal databases. Additional references were identified from the reference lists of relevant publications.

The reviewed literature covered several major areas: multisensory learning, inclusive education, special education pedagogy, Indonesian language learning, literacy instruction, adaptive teaching strategies, Universal Design for Learning, and language development among children with disabilities. Sources related to reading intervention, vocabulary learning, assistive learning media, and classroom adaptation were also considered when they contributed to the focus of the study.

The literature search was conducted using combinations of Indonesian and English keywords. The Indonesian keywords included “*pendekatan multisensorik, pembelajaran multisensorik, pembelajaran Bahasa Indonesia, anak berkebutuhan khusus, pendidikan inklusif, pendidikan luar biasa, keterampilan membaca, keterampilan menulis, and media pembelajaran adaptif*”. The English keywords included multisensory learning, multisensory approach, children with special needs, special education, inclusive education, language learning, literacy instruction, adaptive pedagogy, reading intervention, and communication skills.

The search focused primarily on literature published within the last ten years to ensure relevance to current educational practices. However, several foundational sources were also included when they provided important theoretical or conceptual explanations of multisensory learning, inclusive education, or special education pedagogy.

## 2.3. Inclusion and exclusion criteria

Sources were included in the review when they met one or more of the following criteria:

1. Discussing multisensory learning or multisensory teaching strategies;
2. Focusing on children with special needs or students with disabilities;
3. Examining language learning, literacy development, reading, writing, speaking, listening, or communication skills;
4. Addressing inclusive or special education practices;
5. Providing theoretical, empirical, or practical insights relevant to Indonesian language learning.

Sources were excluded when they were unrelated to education, did not discuss children with special needs, focused only on general language learning without adaptive or inclusive elements, or lacked sufficient academic credibility. Literature that discussed medical or clinical aspects of disability without connection to educational practice was also excluded [17, 18].

## 2.4. Data analysis

The selected literature was analyzed using thematic synthesis. First, relevant information from each source was identified and organized based on its relationship to multisensory learning and language instruction. Second, the information was grouped into several thematic categories, including multisensory modalities, language-learning domains, benefits of multisensory learning, adaptation for different disability categories, implementation challenges, and pedagogical implications.

The analysis focused on identifying how visual, auditory, tactile, and kinesthetic modalities can support Indonesian language learning. The review examined how these modalities can be used in vocabulary learning, reading activities, writing practice, speaking and listening instruction, and social communication. The analysis also considered the role of teachers, learning media, classroom environment, and student characteristics in determining the effectiveness of multisensory learning [3, 6, 16].

## 2.5. Analytical framework

This study used a pedagogical framework that links sensory modalities with language-learning outcomes. The framework assumes that language learning becomes more accessible when students are provided with multiple pathways for receiving and expressing information. Visual input supports recognition of letters, words, pictures, symbols, and written texts. Auditory input supports listening, pronunciation, sound recognition, storytelling, and verbal repetition. Tactile input supports concrete learning through touching, tracing, manipulating objects, and feeling letter forms. Kinesthetic input supports learning through movement, gesture, role play, and body-based activities [7].

Through the integration of these modalities, multisensory learning is expected to increase student engagement, strengthen memory, make abstract language concepts more concrete, and support different learning profiles. This framework was used to interpret how multisensory approaches can contribute to Indonesian language learning for children with special needs [6, 14, 15].

## 2.6. Trustworthiness of the review

To improve the trustworthiness of the review, the study used literature from multiple fields, including language education, special education, inclusive pedagogy, literacy studies, and educational psychology. The analysis compared findings and ideas from different sources to identify consistent themes and avoid reliance on a single perspective.

The review also maintained conceptual consistency by connecting all selected literature to the central focus of the study: the application of multisensory approaches in Indonesian language learning for children with special needs. Claims were interpreted cautiously, especially when sources discussed different educational contexts or different disability categories. This approach was used to ensure that the synthesis remained relevant, balanced, and academically responsible.

This study was based entirely on published literature and did not involve human participants, classroom observations, interviews, or personal data collection. Ethical considerations were addressed by accurately representing the ideas of previous scholars, avoiding plagiarism, and acknowledging all sources used in the review.

## 3. Results and discussion

### 3.1. Multisensory learning as an adaptive pedagogical approach

The literature indicates that multisensory learning is highly relevant for Indonesian language instruction for children with special needs because language learning requires the integration of several cognitive, sensory, motor, and social processes. Indonesian language learning does not only involve memorizing vocabulary or reading written texts, but also understanding sounds, recognizing symbols, connecting words with meaning, expressing ideas, organizing sentences, and participating in communication. For many children with special needs, these processes may be difficult when learning is presented only through verbal explanation or written exercises [19–21].

A multisensory approach provides alternative pathways for students to access language. Through visual, auditory, tactile, and kinesthetic modalities, language concepts can be presented in more concrete and meaningful ways. For example, vocabulary can be introduced using real objects, pictures, gestures, sounds, and movement. Letters can be learned through visual cards, pronunciation practice, tactile tracing, and

body movements. Stories can be understood through pictures, role play, audio narration, and concrete props. These strategies help students connect language symbols with real experiences.

This approach is also consistent with the principle of adaptive pedagogy. Children with special needs may have different learning profiles; therefore, teachers need to provide varied instructional routes. Students who have difficulty processing oral information may benefit from visual materials. Students who have difficulty remembering written symbols may benefit from tactile and kinesthetic activities. Students who struggle with attention may be more engaged when learning involves movement, games, and concrete objects. Thus, multisensory learning is not merely an additional classroom activity, but a pedagogical strategy that supports accessibility and participation [14, 22, 23].

### 3.2. Visual, auditory, tactile, and kinesthetic modalities in language learning

The first important finding from the literature is that each sensory modality contributes differently to Indonesian language learning. Visual modality supports students in recognizing letters, words, pictures, symbols, colors, and written texts. In Indonesian language learning, visual support can be used through picture cards, word cards, illustrated stories, visual schedules, videos, posters, and graphic organizers. These media are especially useful for students who need concrete representations of abstract language concepts [24].

Auditory modality supports listening comprehension, pronunciation, phonological awareness, storytelling, and verbal repetition. Students can learn Indonesian sounds, syllables, words, and sentences through songs, rhymes, oral reading, teacher modeling, and audio recordings. For some students, repeated auditory exposure helps strengthen memory and pronunciation. However, auditory instruction should not stand alone, especially for students who have difficulty processing spoken language or hearing-related barriers [20, 21, 25].

Tactile modality supports students through touching, tracing, holding, arranging, and manipulating learning materials. In language learning, tactile activities may include tracing letters on sandpaper, arranging syllable cards, touching real objects related to vocabulary, forming letters with clay, or matching textured words with pictures. This modality is helpful because it makes language symbols more concrete and physically experienced.

Kinesthetic modality involves movement-based learning. In Indonesian language instruction, kinesthetic strategies may include gesture-supported vocabulary learning, role play, body movements to represent words, sentence-building games, moving to match words and pictures, and acting out stories. Kinesthetic learning can increase engagement and support students who learn better through physical activity.

The integration of these modalities creates richer learning experiences. Instead of receiving information through only one channel, students can see, hear, touch, move, and communicate. This integration may strengthen memory, attention, motivation, and comprehension.

### 3.3. Multisensory strategies for vocabulary acquisition

Vocabulary is a basic component of Indonesian language learning. Children with special needs may have difficulty understanding new words when vocabulary is taught only through verbal explanation. Abstract words, unfamiliar terms, and words with multiple meanings can be particularly challenging. Multisensory strategies can help students connect words with concrete experiences.

Vocabulary learning can be supported through real objects, picture cards, gestures, sounds, and contextual activities. For example, when teaching the word “*buah*” or “fruit,” the teacher can show real fruit, allow students to touch and smell it, say the word aloud, show the written word, and ask students to match the word with the object. This process connects visual, auditory, tactile, and experiential learning.

For students with intellectual disabilities, concrete objects and repetition are important because they help reduce abstraction. For students with autism, visual cards and structured routines may help them understand word meanings more predictably. For students with hearing impairment, visual and gesture-based vocabulary learning may be more effective. For students with visual impairment, tactile objects and auditory explanation become essential [16, 26, 27].

Multisensory vocabulary learning is also useful because Indonesian vocabulary is often learned in context. Students need to understand not only isolated words but also how words are used in sentences and daily

communication. Therefore, teachers should combine vocabulary instruction with storytelling, conversation, role play, and classroom routines [14, 22, 23].

### 3.4. Multisensory strategies for reading skills

Reading requires students to connect written symbols with sounds and meanings. For children with special needs, reading may be difficult because it involves letter recognition, syllable awareness, word decoding, fluency, and comprehension. Multisensory instruction can support reading by making the relationship between letters, sounds, syllables, and meanings more concrete.

In Indonesian language learning, teachers can use letter cards, syllable cards, picture-word matching, sound repetition, tactile letter tracing, and syllable games. For example, students can learn the syllable “*ba*” by seeing the written syllable, hearing the teacher pronounce it, tracing the syllable with their fingers, and forming the syllable using letter cards. This activity helps students connect visual symbols, sounds, and body movement [28, 29].

Reading comprehension can also be supported through illustrated texts, story sequencing cards, role play, and question-answer activities using pictures. Students may understand stories better when they can see characters, arrange events, act out scenes, and connect the story with real-life experiences. These activities are especially helpful for students who struggle with abstract comprehension or long written texts.

For students with dyslexia or reading difficulties, multisensory reading activities may help strengthen sound-symbol association and word recognition. For students with attention difficulties, interactive reading games may increase focus. For students with autism, structured story maps and visual sequences may support comprehension. Therefore, reading instruction should be adapted to students' specific needs [14, 22, 23].

### 3.5. Multisensory strategies for writing skills

Writing is a complex language skill that involves motor coordination, letter formation, spelling, vocabulary knowledge, sentence construction, and idea organization. Children with special needs may experience difficulty in one or more of these areas. Some students may have difficulty forming letters, while others may struggle to organize ideas into sentences or paragraphs [24].

Multisensory strategies can support writing by connecting visual, tactile, and kinesthetic experiences with written language. Students can practice letter formation by tracing letters on textured surfaces, forming letters with clay, writing in sand, arranging word cards, or using large body movements before writing on paper. These activities help students experience writing not only as a visual task but also as a physical and sensory activity [19–21].

Sentence writing can be supported through sentence-building cards, picture-based writing, guided writing, and sequencing activities. For example, students can arrange picture cards first, then match them with words, and finally construct simple sentences. This process helps students move gradually from concrete visual information to written expression.

For students with intellectual disabilities, writing activities should be broken into small steps and repeated consistently. For students with autism, structured writing templates and visual organizers may help them organize ideas. For students with motor difficulties, teachers may provide alternative writing tools, larger paper, assistive technology, or oral-to-written support. Thus, multisensory writing instruction should be flexible and responsive to individual barriers.

### 3.6. Multisensory strategies for speaking and listening skills

Speaking and listening are essential components of Indonesian language learning because they support classroom interaction and social participation. Children with special needs may experience difficulty understanding spoken instructions, expressing ideas, pronouncing words, maintaining conversation, or responding appropriately in social situations. Multisensory learning can support these skills by combining oral language with visual, tactile, and kinesthetic cues [19–21].

Listening activities can be supported through audio stories, songs, visual cues, picture sequences, and action-based responses. For example, after listening to a short story, students can arrange picture cards according to the story sequence or act out the events. This allows teachers to assess comprehension without relying only on verbal answers.

Speaking activities can be developed through role play, storytelling with puppets, picture description, dialog practice, and gesture-supported communication. Students can be encouraged to describe objects, answer simple questions, retell stories, or participate in structured conversations. These activities provide opportunities for students to practice oral language in meaningful contexts.

For students with speech-language difficulties, teachers may provide visual prompts, sentence starters, communication boards, or alternative response modes. For students with autism, predictable dialog routines and social stories can support communication. For students with hearing impairment, visual cues, written keywords, and gestures may help improve participation. Therefore, multisensory speaking and listening activities should be designed not only for language accuracy but also for communication confidence.

### 3.7. Multisensory learning and social communication

Indonesian language learning also has a social function. Students learn language not only to answer questions but also to interact with others, express emotions, ask for help, share ideas, and participate in classroom life. For children with special needs, social communication may require explicit instruction and structured opportunities for practice.

Multisensory activities such as group games, role play, storytelling, turn-taking activities, and cooperative tasks can support social communication. These activities allow students to practice listening, speaking, responding, waiting for turns, following instructions, and working with peers. In this sense, multisensory language learning contributes not only to academic literacy but also to social participation [19–21].

For example, a teacher may use a picture-based storytelling activity in which students take turns arranging story cards and explaining what happens next. This activity involves visual input, oral expression, social interaction, and sequencing skills. Another example is a vocabulary game in which students move to match objects with word cards, say the words aloud, and work in pairs. Such activities make language learning more interactive and socially meaningful [30].

### 3.8. Adaptation for different categories of special needs

A key finding from the literature is that multisensory learning must be adapted to the characteristics of each student. The same strategy may not be equally effective for all children with special needs. Therefore, teachers should understand students' sensory strengths, communication abilities, cognitive levels, attention span, and behavioral characteristics. For students with dyslexia or reading difficulties, multisensory strategies should emphasize sound-symbol relationships, letter tracing, syllable recognition, repeated reading, and word recognition. For students with intellectual disabilities, instruction should use concrete objects, short sentences, repetition, modeling, and step-by-step guidance. For students with autism spectrum disorder, teachers should use structured routines, visual schedules, predictable activities, and clear communication [3, 11].

For students with hearing impairment, visual and kinesthetic support should be emphasized. Teachers may use pictures, written keywords, gestures, facial expressions, and visual demonstrations. For students with visual impairment, tactile and auditory strategies become more important, such as textured letters, real objects, oral explanation, and audio-based learning. For students with attention difficulties, short activities, movement-based tasks, games, and varied media may help maintain engagement. This differentiation shows that multisensory learning should not be implemented as a uniform package. It must be individualized and adjusted according to learning goals and student characteristics [31–35].

### 3.9. Challenges in implementing multisensory approaches

Although multisensory learning has strong potential, its implementation is not without challenges. The first challenge is teacher preparedness. Many teachers may understand the general idea of multisensory learning but may not know how to design specific activities for Indonesian language skills. Teachers need training in selecting appropriate media, adapting tasks, managing classroom activities, and assessing student progress. The second challenge is the availability of learning media. Multisensory instruction often requires concrete objects, picture cards, tactile materials, audio-visual tools, and adaptive media. Some schools may have limited resources, especially in special

and inclusive education settings. Teachers may need to create low-cost materials, but this requires time, creativity, and institutional support.

The third challenge is classroom management. Multisensory activities often involve movement, games, interaction, and manipulation of materials. These activities may be more difficult to manage than conventional instruction, especially in classrooms with students who have diverse behavioral and sensory needs. Teachers must design structured activities with clear rules, predictable routines, and appropriate pacing. The fourth challenge is sensory overload. While multisensory learning can be beneficial, too much sensory stimulation may overwhelm some students, especially those with sensory sensitivity. Therefore, teachers should balance sensory input and observe students' responses carefully. Multisensory learning should be rich but not excessive [36].

The fifth challenge is assessment. Teachers need to assess whether multisensory activities actually support language development. Assessment should not rely only on written tests but should include observation, portfolio, performance tasks, oral responses, and documentation of progress. This requires teachers to use more flexible and individualized assessment methods.

### 3.10. Pedagogical implications

The findings suggest several pedagogical implications. First, Indonesian language learning for children with special needs should be designed using multiple sensory pathways. Teachers should avoid relying only on lectures, written texts, or worksheets. Instead, language instruction should include pictures, sounds, objects, movement, stories, games, and interaction. Second, multisensory learning should be connected to specific language skills. Teachers need to identify whether the learning objective is vocabulary acquisition, reading, writing, speaking, listening, or social communication. After identifying the objective, teachers can select appropriate sensory modalities and activities.

Third, teachers should adapt multisensory strategies to student characteristics. The same learning media may need modification depending on whether students have visual, hearing, cognitive, communication, behavioral, or attention-related needs. Adaptation is essential to ensure that multisensory learning remains inclusive. Fourth, schools should support teachers through training, collaborative planning, and learning media development. Multisensory learning requires creativity and preparation. Therefore, institutional support is needed so that teachers do not work individually without resources.

Fifth, future research should examine the effectiveness of multisensory approaches in Indonesian language learning through empirical studies. Classroom-based research, case studies, action research, and experimental studies are needed to understand how multisensory strategies affect vocabulary, reading, writing, speaking, listening, and communication outcomes among children with special needs [37–40].

### 3.11. Conceptual synthesis

Based on the literature review, the application of multisensory approaches in Indonesian language learning can be understood through a simple conceptual relationship. Visual, auditory, tactile, and kinesthetic modalities provide multiple access points to language. These sensory inputs increase engagement, attention, memory, and comprehension. When applied to language-learning domains, they can support vocabulary acquisition, reading, writing, speaking, listening, and social communication.

The effectiveness of this approach depends on teacher competence, learning media, classroom structure, and adaptation to student needs. Therefore, multisensory learning should be viewed as an inclusive pedagogical approach rather than a fixed method. Its main value lies in its flexibility and its ability to make language learning more accessible, concrete, interactive, and meaningful for children with special needs.

## 4. Conclusion

This study examined the application of multisensory approaches in Indonesian language learning for children with special needs through an integrative literature review. The findings show that multisensory learning is highly relevant for adaptive and inclusive language instruction because it provides multiple pathways for students to access, process, remember, and

express language. By integrating visual, auditory, tactile, and kinesthetic modalities, language learning can become more concrete, engaging, interactive, and meaningful for students with diverse learning needs.

The review indicates that multisensory approaches can support several domains of Indonesian language learning, including vocabulary acquisition, reading, writing, speaking, listening, and social communication. Visual media such as picture cards, word cards, videos, and illustrated stories can help students recognize symbols, words, and meanings. Auditory activities such as storytelling, songs, pronunciation practice, and verbal repetition can support listening comprehension and phonological awareness. Tactile activities such as letter tracing, object manipulation, and textured materials can make language symbols more concrete. Kinesthetic activities such as role play, movement games, gestures, and action-based storytelling can improve participation, communication, and engagement.

For children with special needs, multisensory learning should not be applied as a single uniform method. The approach must be adapted to students' characteristics, disability categories, sensory strengths, cognitive abilities, communication needs, and learning barriers. Students with reading difficulties may require structured sound-symbol activities, while students with intellectual disabilities may benefit from concrete objects, repetition, and simplified instructions. Students with autism may need visual routines and predictable learning sequences, whereas students with hearing or visual impairments may require specific visual, tactile, auditory, or kinesthetic adaptations.

The study also highlights several challenges in implementing multisensory approaches. These include limited teacher preparedness, lack of learning media, classroom management difficulties, time constraints, and the risk of sensory overload for some students. Therefore, successful implementation requires teacher training, institutional support, adaptive learning materials, collaborative planning, and flexible assessment practices. Teachers need to be able to select appropriate sensory modalities, design meaningful activities, and evaluate student progress using methods that are suitable for children with special needs. This article contributes to the discussion of Indonesian language learning by positioning multisensory learning as an inclusive and adaptive pedagogical approach. The approach does not only aim to improve academic language skills, but also supports accessibility, participation, confidence, and social communication. In this sense, multisensory learning can help transform Indonesian language instruction from a text-dominated and teacher-centered process into a more student-centered, concrete, and inclusive learning experience.

The limitation of this study lies in its literature-based design, which does not include direct classroom observation, teacher interviews, or empirical measurement of student learning outcomes. Future research is recommended to conduct classroom-based studies, action research, or experimental studies to examine the effectiveness of multisensory approaches in improving vocabulary, reading, writing, speaking, listening, and communication skills among children with special needs. Further research is also needed to develop multisensory Indonesian language learning models that are specific to different disability categories and educational settings. In conclusion, multisensory approaches have strong potential to improve Indonesian language learning for children with special needs when implemented thoughtfully and adaptively. By engaging multiple senses and recognizing diverse learning pathways, teachers can create language learning experiences that are more accessible, meaningful, and inclusive.

## CRedit authorship contribution statement

**Dalman:** Writing – review & editing, Writing – original draft, Supervision, Software, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Fitria Lestari:** Conceptualization, Writing – original draft, Supervision, Software, Resources, Methodology, Investigation, Formal analysis. **Berwyn Dzaky Radhitya:** Formal analysis, Writing – review & editing, Investigation.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

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