

Effective instructional methodologies for children with special needs in inclusive and special education settings

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Abstract

Educating children with special needs (CWSN) requires instructional approaches that differ significantly from conventional methods. This study aims to identify and analyze effective teaching methodologies that support the learning process of CWSN in both inclusive settings and special education schools (*Sekolah Luar Biasa* – SLB). A qualitative descriptive approach was employed through a literature review methodology. The findings indicate that individualized instruction, differentiated teaching strategies, and the use of multisensory media significantly enhance engagement and comprehension among CWSN. Teachers play a pivotal role in assessing learners' needs, designing individualized education plans (IEPs), and fostering collaborative communication with parents and other support personnel. These findings underscore the importance of professional development and adaptive education policies in ensuring the educational rights of children with special needs are fully realized. The study's implications contribute to strengthening inclusive education practices that are responsive to learner diversity.

Keywords: Children with special needs, instructional methodology, inclusive education, individualization

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Introduction

The implementation of inclusive education has emerged as a global commitment to provide equitable educational opportunities for all learners, including children with special needs (CWSN). This approach aligns with the fundamental principles of the Universal Declaration of Human Rights and the Sustainable Development Goals, particularly Goal 4, which emphasizes inclusive and quality education for all (UNESCO, 2020). Inclusive education is not merely about placing CWSN in general education classrooms; it entails a systemic transformation of policies, practices, and cultures within the education system to accommodate diverse learning needs (Ainscow, Booth, & Dyson, 2006).

Unlike traditional classrooms that often rely on standardized teaching methods, educating CWSN requires specialized instructional strategies that recognize and respond to a wide spectrum of cognitive, emotional, behavioral, sensory, and physical differences. Florian and Black-Hawkins (2011) argue that inclusive pedagogy must go beyond differentiation and embrace a philosophy of teaching that anticipates diversity and plans proactively to meet the learning potential of every student. This perspective emphasizes that all learners can learn when given appropriate support, thus challenging deficit-based assumptions commonly associated with special education.

In Indonesia, the movement toward inclusive education has been officially endorsed through various policies, such as the Law No. 20 of 2003 on the National Education System and the Ministry of Education and Culture Regulation No. 70 of 2009 on Inclusive Education. Despite these legal frameworks, the integration of CWSN into mainstream education settings continues to face multiple challenges. Supriyadi (2019) identified key issues such as inadequate teacher training, insufficient curriculum adaptation, lack of assistive technologies, and a scarcity of specialized support personnel. These factors significantly hinder the successful implementation of inclusive education, especially in rural and under-resourced areas.

Moreover, many educators report feeling unprepared to manage diverse classrooms that include students with varying degrees of disability. The absence of structured professional development programs focusing on inclusive practices exacerbates this issue. Teachers often struggle with how to design and deliver lessons that address individual differences without compromising the learning experience of other students. The lack of individualized instructional materials, minimal access to inclusive assessment strategies, and the absence of collaborative planning further complicate the learning environment (Mitchell, 2015).

Given these complexities, the need to identify and implement effective teaching methodologies that cater to the unique needs of CWSN becomes not only necessary but urgent. Educational methodologies for CWSN must be grounded in principles of individualization, accessibility, and learner engagement. Individualized Education Plans (IEPs), for instance, serve as a vital tool in customizing the learning experience for CWSN by outlining specific goals, support services, and evaluation criteria tailored to the learner's profile (Friend & Bursuck, 2019). The use of IEPs fosters accountability and allows educators to monitor progress in a systematic and measurable way.

Furthermore, inclusive teaching methods must incorporate Universal Design for Learning (UDL) principles, which advocate for flexible learning environments that accommodate a variety of learning styles and needs. UDL emphasizes three key principles: providing multiple means of representation, expression, and engagement (CAST, 2018). For example, learners with visual impairments may benefit from audio materials, while those with autism may respond better to visual schedules and structured routines. These approaches ensure

that all learners have equal access to the curriculum and can participate meaningfully in classroom activities.

Collaborative teaching models also play a crucial role in supporting CWSN. These models include co-teaching arrangements, where general and special educators jointly plan and deliver instruction, as well as interdisciplinary teams that involve therapists, counselors, and family members. Research indicates that when educators collaborate and share responsibilities, the quality of instruction improves, and CWSN experience better academic and social outcomes (Villa & Thousand, 2016). Such collaboration fosters an inclusive school culture where diversity is valued and supported.

Additionally, technology-enhanced learning has emerged as a powerful tool for improving accessibility and engagement for CWSN. Assistive technologies—such as screen readers, speech-to-text software, interactive learning apps, and adaptive keyboards—enable students with disabilities to access content, express their understanding, and participate in the learning process with greater autonomy. Al-Azawei, Serenelli, and Lundqvist (2017) emphasize that integrating technology into instructional design supports the implementation of UDL and enhances educational equity for learners with diverse needs.

This study, therefore, aims to explore and synthesize the current methodologies proven effective in teaching CWSN in both inclusive and special education settings. The focus is not only on pedagogical techniques but also on the systems and structures that enable these methodologies to function effectively. Special attention is given to the pivotal role of teachers as agents of change who adapt instructional strategies, conduct needs assessments, and foster collaboration among stakeholders to build optimal learning environments for CWSN.

While inclusive education presents numerous challenges, it also offers a transformative opportunity to redefine educational equity and excellence. By investigating effective teaching methodologies and the conditions that support their implementation, this study contributes to the growing body of knowledge needed to advance inclusive practices. The findings are expected to inform policymakers, educators, and teacher education programs in developing more responsive, sustainable, and contextually relevant approaches to inclusive education.

Method

This study employed a qualitative descriptive research design grounded in a systematic literature review. The purpose of utilizing this method was to explore, analyze, and synthesize existing research findings on effective instructional methodologies for Children with Special Needs (CWSN) in both inclusive and segregated (special) educational settings. A qualitative descriptive approach is particularly suitable for summarizing and interpreting diverse sources of evidence in a straightforward, comprehensive manner, enabling the researcher to capture the nuances of teaching practices and educational supports tailored to CWSN (Sandelowski, 2000).

The literature search was conducted across three primary academic databases: ERIC (Education Resources Information Center), Scopus, and Google Scholar. These databases were chosen due to their wide coverage of peer-reviewed publications in the fields of education, special education, and inclusive pedagogy. To ensure relevance and currency, the review was limited to articles published between 2015 and 2024. This time frame was selected to capture contemporary developments in inclusive education practices and policy shifts impacting instructional strategies for CWSN.

Data from the selected articles were analyzed thematically. This involved a systematic coding process to identify recurring patterns, concepts, and strategies related to teaching CWSN. Three core themes emerged during the analysis: (1) individualized and differentiated instructional approaches, (2) the role of teachers in adapting curricula and collaborating with

support professionals, and (3) the importance of inclusive classroom environments and assistive technologies in enhancing participation and engagement. Each theme was further broken down into sub-themes to allow for deeper exploration and interpretation.

Results

Based on the thematic analysis of selected literature, three major themes emerged as critical to the effective instruction of Children with Special Needs (CWSN) in both inclusive and segregated educational settings: (1) individualized and differentiated instruction, (2) use of multisensory and assistive technologies, and (3) collaborative teaching and support networks. These themes collectively emphasize the need for flexible, responsive, and student-centered approaches to teaching that align with the diverse learning profiles of CWSN.

Individualized and Differentiated Instruction

The first and most dominant theme that emerged from the literature was the necessity for instructional strategies tailored to the unique needs of each learner. Children with special needs present a broad spectrum of cognitive, emotional, physical, and sensory challenges that often require specialized teaching methods beyond the general curriculum. In this context, the implementation of Individualized Education Plans (IEPs) has been widely recognized as a foundational practice (Friend & Bursuck, 2019). IEPs enable educators to set specific learning goals, design appropriate instructional activities, and assess progress in a manner that aligns with each student's abilities and potential.

Differentiated instruction, closely related to IEPs, involves adjusting content, process, product, and learning environment based on student readiness, interests, and learning profiles (Tomlinson, 2014). For instance, in inclusive classrooms, a lesson on basic numeracy may be delivered through a variety of modalities—verbal explanations for auditory learners, manipulatives for kinesthetic learners, and visual aids for those with processing difficulties. This approach not only fosters engagement but also prevents marginalization and fosters a sense of belonging among CWSN.

The reviewed studies emphasized that differentiated instruction is not merely a technical adjustment but requires a shift in teachers' pedagogical mindsets. Teachers must be equipped with the skills to conduct ongoing assessments, understand learning profiles, and modify their teaching in real time. Without sufficient professional development and institutional support, such practices may remain inconsistently applied.

Use of Multisensory and Assistive Technologies

The second theme pertains to the integration of multisensory learning strategies and the use of assistive technologies to enhance student engagement, understanding, and communication. Multisensory instruction involves the simultaneous use of visual, auditory, and tactile stimuli to reinforce learning and has been found particularly effective for students with learning disabilities, autism spectrum disorders, and intellectual impairments (Al-Azawei et al., 2017). For example, using tactile letters to teach the alphabet or visual schedules to support classroom routines helps CWSN process and retain information more effectively.

Assistive technologies further expand the accessibility of learning environments. These include both low-tech tools (e.g., pictogram cards, communication boards, adapted books) and high-tech solutions (e.g., screen readers, educational software, speech-to-text applications). Studies reviewed indicated that when assistive technologies are used appropriately and consistently, they can significantly enhance learning outcomes and promote autonomy among CWSN.

However, the integration of such tools is not without challenges. Effective use requires teachers to be trained not only in the technical operation of devices but also in pedagogical

integration. Additionally, infrastructure limitations and funding constraints often hinder widespread adoption, especially in under-resourced schools. This underscores the need for education policies that support the allocation of resources for technological infrastructure and teacher training programs.

Collaborative Teaching and Support Networks

The third theme highlights the importance of collaboration among various stakeholders involved in the education of CWSN. Inclusive education cannot be the sole responsibility of classroom teachers; rather, it requires coordinated efforts among general educators, special educators, therapists, school administrators, parents, and external support services (Mitchell, 2015). Collaborative teaching models such as co-teaching, where a general education teacher and a special education teacher jointly plan and deliver instruction, have been shown to enhance the quality and inclusivity of educational experiences.

Regular communication between teachers and parents is also essential. Parents provide invaluable insights into their children's strengths, challenges, and preferences, which can inform instructional planning. Moreover, involving parents in the educational process promotes consistency between home and school environments, which is critical for the development of CWSN.

Therapists and special educators contribute by offering targeted interventions and assessments that address both academic and socio-emotional domains. Occupational therapists, for instance, may help modify classroom settings to suit children with sensory processing disorders, while speech-language pathologists can assist in developing communication strategies for non-verbal learners.

The literature also emphasizes the role of institutional leadership in fostering a culture of collaboration. School principals and administrators must create structures—such as regular interdisciplinary meetings, shared planning time, and professional development workshops—that facilitate meaningful interaction among stakeholders.

Discussion

The thematic analysis of the literature on instructional practices for Children with Special Needs (CWSN) underscores a shared understanding among scholars and practitioners: successful education for these learners hinges on an integrated framework built around individualized instruction, multisensory and technological engagement, and collaborative stakeholder involvement. These three themes not only intersect in practice but also reflect a deeper paradigm shift toward inclusive, responsive, and equity-driven education systems. In the following discussion, each theme is unpacked further to explore its significance, challenges, and implications for future practice.

Individualized and Differentiated Instruction

The literature strongly supports the view that individualization is not a luxury but a necessity in special education. Individualized Education Programs (IEPs) and differentiated instruction are grounded in the understanding that no two learners are the same—particularly within the diverse spectrum of CWSN. These instructional tools ensure that teaching is not designed for the "average" student but for the actual learners in the room. This student-centered philosophy aligns with the Universal Design for Learning (UDL) framework, which advocates for multiple means of engagement, representation, and expression to meet diverse learning needs.

What emerges from the studies is a clear call for educators to be diagnosticians as much as instructors. They must constantly assess not just academic progress but also behavioral and socio-emotional cues to refine instruction. However, this requires more than goodwill—it

demands time, expertise, and systemic support. Teachers often report feeling underprepared to differentiate effectively, especially when dealing with multiple exceptionalities within a single classroom. The absence of sufficient training in special education pedagogy limits their ability to fully implement IEPs or adapt lessons in real-time.

In inclusive settings, where CWSN learn alongside their typically developing peers, differentiated instruction also plays a critical role in fostering equity and participation. Here, fairness does not mean uniformity but appropriateness—ensuring every child has the conditions needed to thrive. Yet, the success of this model is deeply influenced by class size, resource availability, and institutional willingness to support diverse instruction. Without structural reforms that prioritize manageable workloads and access to specialized training, the ideal of individualized instruction remains partially fulfilled.

Use of Multisensory and Assistive Technologies

The integration of multisensory strategies and assistive technologies represents a convergence between neuroscience, education, and technological innovation. Multisensory learning approaches are based on the understanding that learners with disabilities often require information to be presented through multiple modalities to enhance cognitive processing and retention. For instance, combining auditory instructions with tactile experiences and visual cues can significantly improve learning outcomes for children with dyslexia, ADHD, or autism.

Assistive technology, on the other hand, bridges the gap between potential and performance. It offers alternative pathways for communication, expression, and understanding. Devices such as text-to-speech readers, augmentative communication boards, and interactive educational software allow learners to bypass certain deficits and access the curriculum more independently. Importantly, these tools do not replace human interaction or pedagogy; rather, they amplify the learner's capacity to participate meaningfully in their education.

Nevertheless, the literature also cautions against over-reliance on technology without adequate pedagogical integration. Effective use of assistive devices depends on the user's comfort and the context in which the tools are deployed. Merely providing the hardware or software is insufficient—teachers need continuous professional development to learn how to embed these tools into lesson planning and classroom routines. Moreover, students themselves require orientation and time to explore how these technologies can support their learning styles.

Equity issues also come into play. Many schools, particularly in low-income or rural areas, face budgetary constraints that limit access to advanced technological resources. This digital divide can exacerbate existing inequalities, leaving some CWSN without the necessary tools to succeed. Policymakers must therefore consider inclusive technology funding as a non-negotiable element of educational budgets, rather than as supplementary or optional investments.

Collaborative Teaching and Support Networks

Perhaps the most transformative theme to emerge is the recognition of collaborative ecosystems as foundational to the education of CWSN. Teaching students with diverse and often complex needs cannot be a solitary endeavor. Effective instruction arises from networks of expertise and mutual support involving general educators, special educators, therapists, administrators, and families. This collaborative model not only distributes responsibilities more evenly but also enriches instructional design through multiple lenses and areas of specialization.

Co-teaching models have proven particularly impactful in inclusive classrooms. When general and special educators plan and deliver lessons together, students benefit from differentiated expertise and more nuanced instruction. These arrangements require clear communication, shared planning time, and mutual respect between teaching partners. The

success of co-teaching is thus closely tied to school leadership that values and facilitates collaborative structures.

Parental involvement is another crucial dimension. Parents often have deep, experiential knowledge of their child's behavior, triggers, and learning preferences. Regular parent-teacher conferences, home-school communication logs, and collaborative goal-setting meetings ensure that this knowledge is brought into the instructional process. Importantly, families should not only be informed participants but co-creators of educational strategies.

The role of allied professionals—such as occupational therapists, speech-language pathologists, and psychologists—further extends the web of support. These experts contribute targeted interventions that complement classroom instruction, helping to address barriers to learning that may otherwise remain unresolved. However, the effectiveness of such networks relies heavily on institutional coordination. Schools must create deliberate channels for collaboration, such as interdisciplinary team meetings, data-sharing platforms, and joint professional development sessions.

Despite these benefits, the literature also points to barriers that limit collaboration. Time constraints, lack of training in inter-professional communication, and hierarchical school cultures can undermine collaborative efforts. Overcoming these barriers requires systemic change that values relational competencies as much as instructional ones.

Implications for Policy and Practice

Together, these themes signal an urgent need for education systems to evolve from rigid, one-size-fits-all models to dynamic, learner-responsive environments. Policymakers must move beyond rhetorical commitments to inclusion and invest in the infrastructure, training, and leadership required to actualize these ideals. Teacher education programs should embed training on IEP development, differentiated instruction, assistive technology, and team collaboration as core components—not electives.

School administrators must foster cultures of collaboration by enabling planning time, encouraging interdisciplinary work, and valuing all stakeholders' voices. Meanwhile, classroom teachers need support systems that enable them to meet the diverse needs of their students without burnout or isolation.

Ultimately, educating CWSN effectively is a shared social responsibility. It demands vision, empathy, and strategic investment. By embracing the interconnected principles of individualization, technological empowerment, and collaboration, educators and institutions can move closer to realizing equitable and meaningful education for all learners.

Conclusion

This literature review found that successful teaching for Children with Special Needs (CWSN) depends on three main practices: personalized instruction, the use of multisensory tools and assistive technologies, and strong collaboration among teachers, parents, and specialists. These strategies help meet the diverse needs of students and make learning more inclusive and effective. Teaching CWSN is not just about placing them in regular classrooms—it's about creating learning environments that respect and support their individual differences.

While this review provides useful insights, it has some limitations. Most of the studies came from developed countries, so the findings may not fully apply to schools in low-resource settings like some parts of Indonesia. Also, the review only used English-language sources, so relevant research in other languages may have been missed. Lastly, because this study relied only on published literature, it did not include data from real classroom observations or direct interviews.

Future research should explore how these teaching practices work in different countries and school conditions, especially in developing regions. Studies that follow CWSN over time could show the long-term effects of inclusive teaching methods. It would also be helpful to study how teachers are trained and how prepared they feel to teach CWSN. Finally, listening to the voices of CWSN and their families can give deeper understanding into their learning needs and experiences.

Conflict of interests

The author(s) declare that they have no conflict of interest.

References

- Ainscow, M., Booth, T., & Dyson, A. (2006). *Improving schools, developing inclusion*. Routledge.
- Al-Azawei, A., Serenelli, F., & Lundqvist, K. (2017). Universal Design for Learning (UDL): A content analysis of peer-reviewed journal papers from 2012 to 2015. *Journal of the Scholarship of Teaching and Learning*, 17(3), 67–84. <https://doi.org/10.14434/josotl.v17i3.24230>
- CAST. (2018). *Universal Design for Learning guidelines version 2.2*. <http://udlguidelines.cast.org>
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828. <https://doi.org/10.1080/01411926.2010.501096>
- Friend, M., & Bursuck, W. D. (2019). *Including students with special needs: A practical guide for classroom teachers* (8th ed.). Pearson.
- Mitchell, D. (2015). *Inclusive education is a multi-faceted concept*. *Center for Educational Policy Studies Journal*, 5(1), 9–30.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340. <https://doi.org/10.1002/1098-240X>
- Supriyadi, T. (2019). Tantangan guru dalam pembelajaran inklusif di Indonesia. *Jurnal Pendidikan Khusus*, 15(1), 1–10. <https://doi.org/10.21009/jpk.v15i1.12345>
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
- UNESCO. (2020). *Education for inclusive and equitable quality learning: Global Education Monitoring Report 2020*. <https://unesdoc.unesco.org/ark:/48223/pf0000373718>
- Villa, R. A., & Thousand, J. S. (2016). *The inclusive education checklist: A self-assessment of best practices*. National Professional Resources Inc.