

Inclusive Practices for Deaf Children in Elementary Education: Insights from a Literature Review

Anfal Zaeni Noor¹, Sriyanto²

¹SD Negeri Pesangkalan 01, Pagedongan, Banjarnegara

²Magister Pendidikan Dasar, Universitas Muhammadiyah Purwokerto

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ABSTRACT

Inclusive education seeks to ensure equitable access to learning for all students, including those who are deaf or hard of hearing. Despite its growing adoption, the implementation of inclusive practices in Indonesian elementary schools continues to face significant challenges, such as limited teacher competence, inadequate infrastructure, and minimal social support. This study aims to identify effective learning strategies for deaf students within inclusive education settings by conducting a systematic literature review with a qualitative approach. A total of 20 primary sources published between 2011 and 2024 were analyzed. The findings reveal that multisensory approaches, mnemonic techniques, and differentiated instruction significantly improve language acquisition and social skills among deaf students. However, the implementation is hampered by barriers such as insufficient teacher training in sign language, substandard acoustic classroom conditions, and low levels of parental engagement. To address these issues, this study recommends the integration of digital technologies, comprehensive teacher training initiatives, and the development of data-driven educational policies. The results align with Vygotsky's socio-emotional development theory, highlighting the critical role of social interaction in learning. This study contributes to advancing inclusive education theory and offers practical strategies to enhance the educational experiences of deaf students. Further research through longitudinal studies is suggested to evaluate the sustainability and long-term impact of these strategies.

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Corresponding Author:

Anfal Zaeni Noor

SD Negeri Pesangkalan 01, Pagedongan, Banjarnegara

Email: nooranfal27@gmail.com

1. INTRODUCTION

Inclusive education prioritizes equal opportunities for all children in learning environments, particularly for those with special needs like students with hearing impairments. In Indonesia, elementary school inclusive initiatives seek to create nurturing educational atmospheres. Nevertheless, challenges remain, including inadequate teacher training, limited resources, and a lack of awareness regarding the specific requirements of deaf students (Beno et al., 2022; Kusmaryono, 2023).¹ Inclusive education not only centers around the physical

¹ Beno, J., Silen, A. ., & Yanti, M. (2022). ANALISIS KEBIJAKAN PENDIDIKAN INKLUSI. *Braz Dent J.*, 33(1), 1–12.

Kusmaryono, I. (2023). Faktor berpengaruh, tantangan, dan kebutuhan guru di sekolah inklusi di Kota Semarang. *Jurnal Ilmiah Pendidikan Dasar*, 10(1), 12. <https://doi.org/10.30659/pendas.10.1.12-23>

² Ainu Ningrum, N. (2022). Strategi Pembelajaran pada Anak Berkebutuhan Khusus dalam Pendidikan Inklusi. *Indonesian Journal of*

incorporation of children with special needs into mainstream educational settings but also guarantees that they attain valuable and fair learning opportunities (Ainu Ningrum, 2022).²

The fundamental goal of inclusive education is to remove obstacles to learning and foster an environment that accommodates the varied needs of all students. For deaf students, the success of inclusive educational practices hinges on how well schools can facilitate effective communication, adjust teaching strategies, and nurture positive social interactions. Deaf students possess distinct needs during their educational journey, especially regarding language development and communication. They frequently struggle to understand spoken instructions and engage with their classmates, which can negatively impact their social and emotional growth (Bintoro, 2011).³

If these challenges are not addressed, they may impede the cultivation of self-identity, self-esteem, and teamwork capabilities critical for their future academic and social achievements. Consequently, it is vital to employ effective educational strategies to assist them in overcoming these difficulties and realizing their maximum potential. Moreover, as the push for more inclusive educational systems intensifies, there is a pressing need for educators, schools, and governmental bodies to enhance their ability to provide educational experiences that meet the requirements of deaf learners. This pursuit involves offering professional development opportunities, creating adaptable curricula, and fostering partnerships among educational institutions, families, and the broader community.

Arumsari (2022)⁴ also stressed that instructional strategies that emphasize visual and multisensory techniques have been successful in boosting literacy among deaf students, underscoring the necessity of modifying teaching methodologies. The aim of this study is to identify and evaluate effective educational strategies tailored to deaf learners within the framework of inclusive education in primary schools. By gaining insights into successful methods, the intention is to assist educators and other stakeholders in developing more inclusive educational programs. Additionally, this research will investigate the challenges that hinder the effective execution of these strategies, proposing more comprehensive solutions to enhance the educational quality available to deaf students.

2. METHOD OF THE RESEARCH

This study utilizes a systematic review of literature with a qualitative perspective. The systematic literature review was selected to acquire an all-encompassing picture of successful educational approaches for deaf children within inclusive education settings. Information was gathered from 20 primary references, consisting of 15 articles from academic journals, 3 academic books, and 2 dissertations, released between 2011 and 2024 and pertinent to the subject matter of the research.

The sources were chosen based on particular inclusion criteria that included: (1) focusing on educational approaches for children with special needs, especially those who are deaf; (2) emphasizing inclusive education at the elementary education level; and (3) providing either empirical data or theoretical analyses that bolster the formulation of learning methods. Resources that did not fulfill these criteria were filtered out via an evaluation of titles, abstracts, and complete texts.

The analysis of data utilized a thematic coding method. Each reference was scrutinized to detect central themes regarding learning techniques, obstacles in implementation, and suggestions for advancement. This method comprised open coding, axial coding, and selective coding to pinpoint consistent conceptual trends across diverse documentation. The validity of the outcomes was preserved by implementing source triangulation, contrasting findings from various references to guarantee consistency and precision of information (Lubna et al., 2021).⁵ The research process included the following steps: Identifying issues based on the literature gap regarding the requirements of deaf children in inclusive learning environments.

Sourcing and choosing references through academic search platforms like Google Scholar, ResearchGate, and reputable national journals. Conducting thematic analysis of the pertinent content in the selected sources. Integrating findings to create a framework outlining effective learning strategies along with their supporting and obstructive elements. Utilizing this approach, the research aims to develop a strategic mapping grounded in literature data that enhances the formulation of inclusive education systems that are better tailored to the needs of deaf children.

3. RESULTS AND DISCUSSIONS

3.1 Effective Learning Strategies for Deaf Children

Humanities and Social Sciences, 3(2), 181–196. <https://doi.org/10.33367/ijhass.v3i2.3099>

³ Bintoro, T. (2011). Kemampuan Komunikasi Anak Tunarungu. *Perspektif Ilmu Pendidikan*, 23(XIV), 12–40. <https://doi.org/10.21009/pip.231.2>

⁴ Arumsari, A. (2022). Strategi Belajar Membaca Untuk Anak Tunarungu. *Refleksi Edukatika : Jurnal Ilmiah Kependidikan*, 12(1), 1–9. <https://doi.org/10.24176/re.v12i1.7209>

Following the examination of existing literature, numerous efficient educational methods have been identified that can be utilized to assist deaf children within inclusive schooling environments:

- 1) **Multisensory Approach:** Findings by Yunia Sri Hartanti (2015)⁶ indicate that employing multisensory techniques, which merge visual, tactile, and auditory elements simultaneously, can significantly improve the vocabulary pronunciation abilities of deaf children. A practical application of this is using illustrated flashcards, sign language motions, and sound vibrations to present fundamental concepts like numbers or colors. This strategy maximizes the utilization of effective sensory channels, such as visual and tactile input.
- 2) **Mnemonic Techniques:** Research by Nurhayati and Handayani (2020)⁷ reveals that mnemonic strategies based on visual associations can enhance memory retention in vocabulary acquisition by as much as 40%. This method aids deaf children in transforming verbal information into visual or kinesthetic representations, like connecting the term "sun" with a circular hand gesture.
- 3) **Differentiated Instruction:** Maulidin (2025)⁸ highlights the necessity of adjusting educational resources according to the varying levels of students' hearing loss. Students with mild loss can benefit from hearing aids and sound enhancements, whereas those with substantial loss require primarily visual tools such as videos with subtitles or interactive graphics. This method is consistent with Piaget's cognitive development theory, which stresses the significance of customizing resources to align with children's developmental phases (Syafawani & Safari, 2024).⁹

3.2 Implementation Challenges in the Field

The execution of inclusive education for elementary-aged deaf students continues to encounter numerous obstacles, such as:

- 1) **Insufficient Teacher Skills:** Kusmaryono (2023) indicates that 68% of educators in inclusive institutions located in Semarang City have not received training on sign language (BISINDO) or other communication methods. This situation obstructs effective communication between teachers and pupils, which could exacerbate understanding gaps in the subject matter.
- 2) **Unsatisfactory Facilities:** Research conducted by Budiarti and Sugito (2018)¹¹ in Gunungkidul Regency reveals that 75% of inclusive educational settings do not have classrooms equipped with proper acoustics or hearing assistance devices, resulting in limited social engagement among deaf students.
- 3) **Lack of Community Engagement:** Fairus and Harsiwi (2024)¹² state that merely 30% of parents with deaf children in Bangkalan play an active role in their children's education. The absence of collaboration among educators, speech therapists, and families leads to discrepancies in the educational approaches utilized both at home and in the classroom.

3.3 Analysis of Success and Recommendations

To enhance the effectiveness of inclusive education for children with hearing impairments, a series of strategic suggestions have been outlined:

- 1) **Integration of Technology:** Utilizing digital applications designed for learning sign language, like "Let's Sign," has proven to boost motivation and self-directed learning among deaf children (Arumsari, 2022)⁴. Having access to such technology can lessen reliance on the presence of supportive educators.
- 2) **Comprehensive Teacher Preparation:** Hallahan et al. (2020)¹³ emphasize the importance of training programs for teachers that focus not only on technical abilities, such as operating hearing aids, but also on fostering inclusive mindsets, cultivating empathy, and equipping them to address the varied needs of their students.
- 3) **Evidence-Based Policy:** Beno et al. (2022)¹ advise local authorities to perform regular assessments of requirements, which should include the dedicated funding for acquiring hearing aids, educational visual aids, and the ongoing professional development of teachers.

3.4 Contextual Discussion

The results of the study support Vygotsky's theory on socio-emotional growth, highlighting social interaction as a crucial element in the learning experience (Herdiyana, Lestari, & Bahrum, 2023)¹⁴. Children with hearing impairments possess considerable potential for development when given the chance to engage through suitable alternative means of communication. In this regard, techniques like role-playing, team-based activities, and group projects with classmates have shown to be effective in improving both social competencies and academic insight (Nurmalitasari, 2015).¹⁵

¹⁵ Nurmalitasari, F. (2015). Perkembangan Sosial Emosi pada Anak Usia Prasekolah. *Buletin Psikologi*, 23(2), 103. <https://doi.org/10.22146/bpsi.10567>

Nevertheless, the effective application of these techniques significantly depends on the proactive participation of all key stakeholders, which includes educators, caregivers, and professionals such as speech therapists and educational psychologists. Without ongoing collaboration among diverse experts, initiatives aimed at creating an inclusive educational setting could fall short and remain largely superficial.

Moreover, we must recognize the limitations inherent in this study, as the majority of the reviewed data is qualitatively descriptive, lacking a quantitative assessment of the strategies' impacts. Consequently, further investigations should prioritize long-term, data-driven assessments to evaluate the enduring consequences of educational methods on the academic performance and psychological health of children who are deaf.

4. CONCLUSIONS

Inclusive educational methods for elementary-aged deaf students need a comprehensive strategy that combines teaching practices, technological tools, and community engagement. Utilizing various sensory modalities, memory aids, and tailored instruction has been shown to significantly enhance both the academic and social growth of deaf students. To tackle implementation difficulties, including insufficient teacher training, lack of proper facilities, and minimal parental engagement, broad strategies must be developed.

Suggested actions involve incorporating technology that supports sign language education, providing thorough teacher training that blends technical know-how with fostering inclusive beliefs, and establishing data-informed policies that cater to the demands of inclusive educational environments.

This study aids in advancing the concept and execution of inclusive education, while also providing actionable insights for governmental bodies, educational institutions, and local communities. It is advisable that more research is conducted to assess the success of inclusive educational methods over time, ensuring lasting beneficial effects on the growth of deaf children.

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