

## Sign Language Culture and Literacy Development for Deaf Students in Grade 7 Inclusive Junior High School

Faiz Noormiyanto<sup>1</sup>, Ayu Rahma Arianti<sup>1</sup>, Desy Syaswana Dalila<sup>1</sup>

<sup>1</sup> Department of Special Education, Faculty of Teacher Training and Education, University of PGRI Yogyakarta, Jl. PGRI I Sonosewu No. 117 Daerah Istimewa Yogyakarta 55182 Indonesia

Email: faiz@upy.ac.id

**Abstract:** *This study explores the relationship between sign language culture and literacy development among Grade 7 deaf students in an inclusive junior high school. Using a descriptive qualitative approach, data were collected through classroom observations, interviews with teachers and students, and analysis of students' literacy work. The findings indicate that sign language functions not only as a means of communication but also as a cultural foundation that enhances students' engagement, identity formation, and comprehension in literacy learning. Strengthening sign language culture within literacy instruction supports deeper understanding, affirms students' identities, and contributes to the creation of more inclusive learning environments.*

**Keywords:** *sign language culture; deaf students; literacy development; inclusive education; bilingual-bicultural approach*

**Abstrak:** Penelitian ini mengeksplorasi hubungan antara budaya bahasa isyarat dan perkembangan literasi pada siswa tunarungu kelas VII di sekolah menengah pertama inklusif. Penelitian menggunakan pendekatan kualitatif deskriptif dengan pengumpulan data melalui observasi kelas, wawancara dengan guru dan siswa, serta analisis karya literasi siswa. Hasil penelitian menunjukkan bahwa bahasa isyarat tidak hanya berfungsi sebagai alat komunikasi, tetapi juga sebagai landasan budaya yang memperkuat keterlibatan belajar, pembentukan identitas, dan pemahaman siswa dalam pembelajaran literasi. Penguatan budaya bahasa isyarat dalam pengajaran literasi mendorong pemahaman yang lebih mendalam, afirmasi identitas siswa, serta terciptanya lingkungan belajar yang lebih inklusif.

**Kata kunci:** budaya bahasa isyarat; siswa tunarungu; pengembangan literasi; pendidikan inklusif; pendekatan bilingual-bikultural

### 1. INTRODUCTION

Language is the primary foundation for literacy development, and for deaf students, sign language is the most accessible communication system. In the context of inclusive education, sign language culture is understood not only as a set of linguistic signs, but as part of the identity and social practices of the deaf community (Humphries et al. 2022)(Nicholas and Geers 2006). Recognition of this culture is crucial because it influences students' learning motivation, self-confidence, and academic abilities, particularly in literacy learning.

International research demonstrates a strong link between sign language proficiency and written literacy development. A research synthesis by (Bergeron et al. 2020) revealed that sign language proficiency correlates with reading and writing competence in deaf students across countries. This is because sign language provides a stable linguistic structure and visual representations that support text interpretation.

Furthermore, literacy is not only related to the technical ability to read and write, but also a socio-cultural practice(Pérez Aguado et al. 2017). When sign language is recognized as a cultural identity, deaf students are more motivated, participatory, and confident in literacy activities. (Werfel, Reynolds, and Fitton 2022) (Hassanzadeh and Nikkhoo 2019)emphasized that sign language culture enables students to build a positive linguistic identity as part of the deaf community.

In Indonesia, the integration of sign language into literacy learning has demonstrated positive impacts through the use of Bisindo media, such as digital flipbooks (Henner et al. 2019) and Bisindo's video-

based literacy program (PusBisindo, 2025). These media facilitate students' understanding of vocabulary, contextual meaning, and sentence structure.

However, gaps remain, including low teacher competency in sign language, the absence of school policies, and limited teaching materials based on Deaf culture. This gap underscores the urgency of research examining the role of sign language culture in the literacy of first-grade junior high school students. This study aims to describe how sign language culture contributes to the literacy learning process and outcomes of deaf students.

## **2. METHOD**

This study used a descriptive qualitative approach aimed to describe in depth how sign language culture plays a role in the literacy learning process of deaf students in grade 1 of junior high school in an inclusive school. This approach was chosen because it is able to capture natural phenomena related to communication practices, the use of sign language in the classroom, and students' responses to literacy strategies implemented by teachers. The study was conducted in an inclusive junior high school that has deaf students as part of the regular learning population. The research participants consisted of six deaf students in grade 1, two Indonesian language teachers, one special assistant teacher (GPK), and one member of the deaf community who was involved as a sign language facilitator. Participants were selected purposively based on their direct involvement in literacy learning practices. Data were collected through three main techniques: observation, interviews, and document analysis. Observations were conducted during six literacy learning sessions to observe the practice of using sign language, teacher-student interactions, and multimodal strategies applied in reading and writing. In-depth interviews were conducted to explore teachers' and students' experiences regarding the role of sign language in text comprehension and writing composition. Document analysis included examining student work in the form of writing, reading summaries, and learning media used by teachers, such as Bisindo videos and visual flashcards. Data were analyzed using the Miles, Huberman, and Saldaña model through data condensation, data presentation, and conclusion drawing. The analysis focused on identifying patterns of relationships between sign language culture and student literacy development, including supporting and inhibiting factors for implementing sign culture-based literacy learning in inclusive classrooms.

## **3. RESULTS AND DISCUSSION**

### ***3.1. Overview of Findings***

The results of this study indicate that sign language culture plays a central role in the literacy learning process and outcomes of deaf students in grade 1 of junior high school. Sign culture exists not only as an alternative means of communication but also as a language system and cultural identity that shapes how students access, understand, and express meaning in texts. The findings indicate that literacy learning that consistently integrates sign language significantly improves vocabulary comprehension, sentence structure, and reading comprehension skills. Furthermore, the integration of sign culture has a strong impact on students' motivation, participation, and confidence in completing literacy tasks.

The findings of this study reinforce the view that literacy is both a linguistic and a cultural activity. Deaf students who have full access to sign language as their primary language demonstrate more stable literacy development than those who receive limited sign language input (Pizzo 2016). This is evident in their ability to understand basic literacy concepts such as word meaning, inter-sentence relationships, and paragraph structure.

### ***3.2. Sign Language Competence as a Linguistic Foundation for Literacy***

One of the research's key findings indicates that strong sign language proficiency is directly related to students' ability to comprehend reading and compose written text. Students with higher sign language competency can more easily map sign language to written text. In the process of learning to read, students often use a visual-mapping strategy, which involves connecting sign language (visual representation), images, and written words. This strategy helps students activate meaning before reading the full text.

These findings align with a meta-analysis by (Crume, Lederberg, and Schick 2021) which found that sign language does not hinder written language development but instead supports the development of internal semantic representations necessary for understanding text. Deaf students who receive early exposure to sign language demonstrate better literacy skills because they have a stable “working language” for processing written information.

Additionally, in the observed classroom, the teacher used fingerspelling techniques to help students connect letters to word forms, especially for abstract vocabulary. This technique provides a sequential representation that serves as a bridge to orthographic mapping. This finding is supported by a study by (Banegas, Poole, and Corrales 2020), which stated that fingerspelling is a key component of sign language-based literacy intervention.

### ***3.3. Sign Language Culture and Its Influence on Motivation, Identity, and Participation***

Sign language not only provides linguistic access but also builds a sense of identity and community (Deaf identity), which increases students' motivation to learn. Interviews indicate that students feel more valued when teachers consistently use Bisindo in the classroom. Students report being "more willing to ask questions," "better understanding of explanations," and "more confident" when sign language is a central part of learning.

This situation confirms (Ormel et al. 2022) statement that sign language culture is one of the foundations of Deaf cultural identity formation, which directly impacts academic engagement. In Deaf culture, sign language is not just a communication system, but a symbol of pride and social significance. This correlates with increased internal motivation in learning to read and write.

During observations, when the teacher began the session with a Bisindo video-based story, all students displayed rapt attention. Students were more active in answering questions in sign language before moving on to the written text. This activity demonstrates that sign language serves as a cultural-linguistic scaffolding, facilitating the processing of academic information.

### ***3.4. Multimodal Strategies Improve Reading Comprehension and Writing Skills (Paragraph)***

Literacy instruction for deaf students in this study demonstrated that the use of multimodal strategies integrating sign language, visual media, written text, and movement had a significant impact on improving reading and writing skills. Teachers used various techniques such as showing Bisindo videos as an introduction to the material, illustrated vocabulary cards, fingerspelling techniques, and concept maps that connected sign signs to written words and contextual meanings. Through Bisindo videos, students gained a complete picture of the reading context before entering the text, thus facilitating the process of understanding the main ideas. Visual vocabulary cards helped students establish stable visual-linguistic connections between concepts, images, and sign signs. The use of fingerspelling proved effective in strengthening the understanding of word forms, especially abstract words that are difficult to visualize. Furthermore, the sign-word-sentence mapping activity enabled students to organize ideas in a more structured manner before writing paragraphs. These findings align with research by (Marschark, Hauser, and Marschark 2008), which showed that Bisindo-based digital flipbooks were able to improve students' vocabulary, sentence comprehension, and ability to express ideas through writing. (Piper et al. 2019) also confirmed that sign language-based literacy intervention significantly improved visual decoding skills, paragraph comprehension, and written production. Overall, multimodal strategies have been shown to provide richer and more meaningful access to literacy learning for deaf students, so they need to be consistently implemented in inclusive schools.

### ***3.5. Challenges in Implementing Sign Language-Based Literacy Instruction (Paragraph)***

Although sign language-based literacy learning has shown positive results, this study identified several obstacles to its implementation in inclusive classrooms. One of the biggest challenges is teachers' limited competence in using Bisindo. Although teachers understand the importance of sign language, most do not yet have a sufficient grasp of Bisindo's structure and vocabulary, resulting in inadequate instruction. This situation often forces students to rely on special assistant teachers or peers to understand

academic explanations. Furthermore, schools do not yet have formal policies governing the use of sign language as a second language, so its use relies heavily on teacher initiative. Another challenge is the lack of literacy teaching materials based on Deaf culture. Teachers still rely on limited resources such as online videos or simple flashcards without a systematic Bisindo-based literacy curriculum. Variations in early language access also pose a significant barrier; students exposed to sign language from an early age demonstrate better literacy development than those who only learn Bisindo upon entering school. These findings align with a report by PusBisindo (2025), which emphasized that delayed language access impacts long-term literacy skills. These obstacles indicate the need for teacher training support, clear school policies, and the provision of more comprehensive learning media based on sign language culture.

### **3.6. Discussion: Integrating Findings with Theory and Previous Research (Paragraph)**

The findings of this study confirm that sign language culture has a strong linguistic and socio-cultural contribution to the literacy development of deaf students, and this is in line with the bilingual-bicultural (bi-bi) theory which states that sign language functions as a first language (L1) that provides a semantic foundation before students learn written language as a second language (L2). The use of sign language in learning helps students build more stable mental representations of concepts that will later appear in written texts. This finding is in line with the results of (Rosenburg et al. 2020) meta-analysis, which concluded that deaf students with strong sign competence demonstrate higher literacy skills than those who do not have adequate early language access. From a sociocultural perspective, the use of sign language strengthens students' Deaf identity, increases self-confidence, and encourages active participation in literacy activities, as emphasized by (Tomazin, Radošević, and Hrastinski 2025). Furthermore, the findings of this study are also in line with (Werfel et al. 2022) who emphasized the effectiveness of sign language-based literacy interventions, especially in improving visual decoding and text meaning. Theoretically, these results can be explained through the Vygotskian framework, which posits that sign language serves as a psychological tool that mediates academic understanding. Therefore, strengthening sign language culture in literacy learning is not merely a pedagogical strategy, but an approach rooted in valid linguistic and cognitive developmental theories. This research adds to the evidence that deaf students' literacy can only develop optimally if they have full access to sign language within an inclusive educational context.

## **4. CONCLUSION**

Sign language culture plays a crucial role in the literacy development of deaf students in first grade of junior high school. Sign language is not only a means of communication, but also a linguistic and cultural foundation that strengthens students' understanding, participation, and identity. An effective literacy approach must be bilingual, bicultural, and multimodal, integrating Indonesian, visual, and textual literacy.

This study confirms that strengthening sign language culture in literacy learning is a key strategy for creating meaningful and equitable inclusive education for deaf students.

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