Dynamics of Oral Communication in Inclusive Language Learning for Deaf Students

Sumiyati[12] , Gunarhadi[3]

[1] Doctoral Program of Indonesian Language Education, Universitas Sebelas Maret, Surakarta, 57126, Indonesia
[2] Principal of SLB School, ABC YKAB Boyolali, 57372, Indonesia
[3] Educational Science, Universitas Sebelas Maret, 57126, Indonesia,

Email : smyati29@student.uns.ac.id

Abstract: *This study examines the dynamics of oral communication in language learning among deaf students in inclusive school settings. The research focuses on how multimodal approaches integrate oral, visual, and kinesthetic methods supported by the Universal Design for Learning (UDL) framework outlined in CAST (2018), and how these approaches operate within the context of inclusive classroom communication in Indonesia. Employing a qualitative case study design, the study investigates oral communication practices through classroom observations, interviews with teachers and students, and document analysis conducted in two inclusive schools in Central Java, Indonesia. The findings indicate that oral communication among deaf students occurs through multimodal mediation that combines hand gestures, speech, lip-reading, and assistive technologies. Teachers functioned as linguistic mediators who bridge spoken language with sign-based cues, while peer interactions play a key role in reinforcing students' comprehension and participation. The study highlights that oral language learning becomes more effective when visual supports, adaptive acoustic learning environments, and inclusive community collaboration. This research contributes to inclusive pedagogy by demonstrating that oral communication and sign-based modalities can coexist harmoniously within linguistically and culturally diverse classrooms.*

Keywords: *inclusive classroom, oral communication, multimodal pedagogy, deaf education, Universal Design for Learning*

Abstrak: Penelitian ini menelaah dinamika komunikasi oral dalam pembelajaran bahasa pada siswa tunarungu di sekolah inklusi. Fokus penelitian diarahkan pada bagaimana pendekatan multimodal diterapkan untuk mengintegrasikan metode oral, visual, dan kinestetik dengan dukungan kerangka Universal Design for Learning (UDL) sebagaimana diuraikan dalam pedoman CAST 2018 serta dalam konteks komunikasi kelas inklusif di Indonesia. Menggunakan pendekatan studi kasus kualitatif, penelitian ini menjelajahi praktik komunikasi oral melalui observasi kelas, wawancara guru dan siswa, serta analisis dokumen di dua sekolah inklusi di Jawa Tengah Indonesia. Temuan menunjukkan bahwa komunikasi oral pada siswa tunarungu berlangsung melalui mediasi multimodal yang menggabungkan isyarat tangan, ujaran, pembacaan gerak bibir, dan dukungan teknologi bantu. Guru berperan sebagai mediator linguistik yang menghubungkan ujaran dengan bahasa isyarat, sementara interaksi teman sebaya berperan dalam memperkuat pemahaman dan partisipasi siswa. Hasil penelitian menegaskan bahwa pembelajaran bahasa oral lebih efektif ketika dipadukan dengan dukungan visual, lingkungan belajar akustik yang adaptif, serta kolaborasi komunitas yang inklusif. Studi ini berkontribusi pada pedagogi inklusif dengan menegaskan bahwa komunikasi oral dan bahasa isyarat dapat berkoeksistensi secara harmonis dalam ruang kelas yang beragam secara linguistik dan budaya.

Kata kunci: kelas inklusi, komunikasi oral, pedagogi multimodal, Pendidikan tunarungu, Universal Design for Learning

1. INTRODUCTION

Inclusive education, as emphasized in Sustainable Development Goal 4 (UNESCO, 2017; UNESCO, 2020), underscores the importance of ensuring equitable access to high-quality learning opportunities for all students, including deaf learners. Despite this global mandate, the implementation of oral language instruction for deaf students in inclusive classrooms continues to face significant pedagogical

challenges. These challenges include mismatches between instructional methods and students' communicative repertoires, limited environmental accommodations, and varying levels of teacher competence in managing multimodal communication demands (Kusters et al., 2021; Hall, 2020).

In the context of deaf education, oral communication is not solely dependent on auditory perception; rather, it requires the integration of visual, kinesthetic, and digital modalities that collectively support meaning-making in classroom interaction. Buchanan-Worster, Parisi, and Peachey (2020) demonstrated that lip-reading, visual phonological awareness, and multimodal scaffolding play critical roles in facilitating oral language acquisition among deaf learners. Complementing this perspective, Rahmawati and Setiawan (2021) found that teachers in Indonesian inclusive schools frequently rely on multimodal strategies such as gesture-based explanations, pictorial aids, and assistive technologies to bridge communicative gaps and enhance learner comprehension. These findings align with the Universal Design for Learning (UDL) principles advocated by CAST (2018), which call for flexible, multisensory pathways to access and engage with learning content.

In Indonesia, inclusive schools continue to expand; however, the implementation of oral language instruction often remains confined to a single pedagogical orientation, either auditory verbal training or exclusive use of sign language (Nugraha, Rahmawati, & Widyastuti, 2022). Overreliance on a single modality risks positioning deaf students in inequitable learning conditions, particularly in linguistically diverse classrooms where students employ varied communicative strategies (Marschark & Knoors, 2019).

Against this backdrop, the present study investigates the dynamics of oral communication within a multimodal instructional framework that integrates spoken language, visual supports, sign-based cues, and assistive technologies. The study aims to: (1) describe how oral communication is practiced in language lessons within inclusive classrooms; (2) identify teacher strategies as mediators of communication; (3) explore peer and technological supports that facilitate deaf students' comprehension of spoken language; and (4) analyze how oral and sign-based modalities interact in everyday learning practices.

2. THEORETICAL FRAMEWORK

2.1. Multimodal Learning in Deaf Education

Multimodal learning is widely recognized as an effective approach for supporting language development, as meaning is constructed through interconnected visual, gestural, and spatial modes rather than speech alone (Cope & Kalantzis, 2020). Sign-based literacy interventions further strengthen both written and oral language skills by providing accessible linguistic scaffolding (Dostal, 2025). Visual modalities such as images, videos, and facial expressions enable deaf learners to process oral input more efficiently in inclusive classrooms (Mayer, 2023). Digital tools, including speech-recognition systems, enhance access to spoken language by converting auditory information into readable visual formats (Geng, Liu, & Yu, 2021).

2.2. Universal Design for Learning (UDL) and Inclusive Context

The Universal Design for Learning framework emphasizes flexible presentation of content, varied ways of expressing understanding, and diverse modes of engagement for all learners (CAST, 2018). Implementing UDL fosters adaptive and accessible learning environments that accommodate sensory needs, including those of deaf students (Khan, 2025). Remote learning contexts further demonstrate the relevance, as captions, transcripts, and interactive visual supports greatly enhance accessibility for deaf learners (Taylor, 2020). In Indonesia, inclusive classroom communication requires UDL-based adaptations, particularly the provision of supplementary visual representations to support comprehension of spoken language (Putri, Ningsih, & Fitriani, 2024).

2.3. Identity, Modality, and the Risks of Monolingual Bias

Scholars caution that oralism bias, an instructional stance that privileges spoken language while suppressing sign language, can restrict deaf students' linguistic access and hinder identity development

(Humphries et al., 2020). Visual modalities, however, offer natural cognitive advantages for deaf learners and should function as complementary supports rather than substitutes for oral instruction (Wilbur, 2018). Ongoing research reaffirms that sign-based learning environments empower deaf students by strengthening conceptual understanding and expressive capacity (Wilbur, 2019). A multimodal approach, therefore, protects linguistic equity by validating both visual and auditory channels as legitimate pathways to learning for deaf students.

2.4. The Role of the Teacher in Inclusive Pedagogy

Teacher agency plays a decisive role in determining the effectiveness of inclusive education models, as teachers orchestrate learning environments and communication strategies that shape learner participation (Swanwick & Gregory, 2019). In Indonesia, teachers actively combine multimodal strategies, including sign language, visual cues, body movements, and electronic devices, to mediate linguistic access for deaf students (Rahmawati & Setiawan, 2021). Teachers also facilitate interactions involving assistive hearing devices by coordinating communication between deaf and hearing peers. These practices position teachers as both linguistic and cultural mediators who bridge modalities to support equitable classroom participation for deaf learners.

2.5. Peer Interaction and Social Inclusion

Peer interaction plays a vital role in shaping deaf students' linguistic identity and communication competence, as collaborative exchanges promote confidence and multimodal expression (Byatt, Duncan, & Dally, 2023). Social relationships in inclusive settings offer opportunities for deaf learners to negotiate meaning, receive clarification, and build expressive skills through naturalistic interaction patterns (Napier et al., 2020). Competence in sign language developed both at home and in school further strengthens emotional bonds and enhances bilingual communication abilities (Napier et al., 2020). Such peer-mediated support contributes to social inclusion by fostering shared understanding across diverse communicative modalities.

3. METHOD

This study employed a qualitative case study design to explore the dynamics of oral communication in language learning among deaf students in inclusive schools. Such a design is appropriate for examining natural interactional processes, pedagogical strategies, and environmental factors that shape learners' communicative development within authentic classroom contexts (Saldaña, 2021). The case study approach is further justified because oral communication for deaf learners is inherently multimodal and situated, requiring close attention to gestures, visual cues, technologies, and teacher mediation that emerge during real-time instruction (Mayer, 2023; Humphries et al., 2020).

The research was conducted in a public vocational inclusive school (SMK) in Central Java, Indonesia, which has implemented special-needs education services for more than five years. This school was selected because it adopts a full-inclusion model, where deaf students learn alongside hearing peers using oral communication as the primary medium for language instruction—an approach that aligns with national inclusive education practices and documented challenges in multimodal communication for deaf learners (Nugraha, Rahmawati, & Widyastuti, 2022; Rahmawati & Setiawan, 2021). Classroom observations were conducted across three different learning environments to capture diverse interactional contexts.

Participants consisted of two deaf students from Grade X, one deaf student from Grade XII, two Indonesian language teachers, one special education teacher (GPK), and five hearing students representing peer interaction dynamics. Purposive sampling was applied to ensure participants possessed experience with oral-based instructional activities (Miles, Huberman, & Saldaña, 2021). Access approval was obtained through discussions with the school principal, curriculum vice principal, and student affairs coordinator, who also served as the special education teacher. Voluntary participation was secured through signed consent forms, demonstrating compliance with ethical standards in inclusive educational research.

Data collection was conducted over four weeks using three primary techniques. First, twelve sessions of direct classroom observation were carried out, focusing on teachers' multimodal strategies, deaf

students' responses, peer scaffolding, and the use of assistive communication technologies elements known to be central in deaf education research (Buchanan-Worster et al., 2020; Geng, Liu, & Yu, 2021). Second, semi-structured interviews lasting 20–30 minutes were held with teachers and students, exploring their experiences, perceptions of oral communication effectiveness, and common challenges in inclusive language learning. Third, several non-identifying artifacts, including lesson modules, teacher notes, instructional materials, and audio or photo documentation, were collected to support triangulation, consistent with qualitative data-validation principles (Miles et al., 2021).

Data analysis followed Saldaña's coding procedures. First-cycle coding (initial/open coding) identified communicative gestures, response patterns, teacher strategies, and interactional contexts (Saldaña, 2021). Second-cycle pattern coding organized initial codes into higher-level categories such as teacher mediation, peer scaffolding, visual cueing, and oral attempts, reflecting multimodal principles in deaf education (Wilbur, 2019; Cope & Kalantzis, 2020). Thematic synthesis was then applied to derive overarching themes that illustrated the dynamics of oral communication in inclusive classrooms. Validity was ensured through technique triangulation, source triangulation, and member checking with classroom teachers.

This study adhered to ethical principles of inclusive education research, including anonymity, voluntary participation, parental consent via phone or messaging communication, simplified procedural explanations, and the use of non-identifiable visual data. All research activities were conducted with attention to the communicative sensitivities of deaf students and respect for their linguistic rights (Humphries et al., 2020; UNESCO, 2020).

4. RESULT AND DISCUSSION

The findings of this study reveal five key themes related to the dynamics of oral communication in language learning within the inclusive classroom.

4.1. Multimodal Mediation in Oral Communication

The findings show that teachers consistently employed multimodal mediation to support deaf students' comprehension during the procedural-text lesson on "How to Make an ID Card (KTP)," where oral instructions were combined with images, gesture demonstrations, and slowed articulation to ensure message clarity (Mayer, 2023). Each instructional step, such as preparing documents, filling forms, or visiting the civil registration office, was reinforced through visual sequencing charts that allowed deaf students to anchor oral explanations onto concrete representations (Cope & Kalantzis, 2020). Teachers repeatedly emphasized key procedural verbs such as *to process*, *to take*, and *to submit* using exaggerated lip movements, consistent with evidence showing that lip-reading remains a crucial access point for oral language learners (Buchanan-Worster et al., 2020). This approach aligns with Anderson et al. (2018), who argue that structured visual scaffolds significantly enhance linguistic processing for learners with limited auditory input.

Multimodal layering also occurred when teachers simultaneously pointed to printed keywords while demonstrating gestures, supporting the integrated processing of visual–kinesthetic cues reported as essential in deaf education (Humphries et al., 2020). Students' understanding improved markedly when demonstrations were paired with slowed rhythmic modeling of speech, reflecting research indicating that multimodal rhythm facilitates auditory-visual coordination in deaf learners (Byatt et al., 2023). Overall, these observations reinforce that oral communication alone is insufficient without multimodal reinforcement, echoing global findings that effective oral instruction for deaf students relies on multimodal richness rather than speech-only methods (Mayer, 2023; Anderson et al., 2018; Buchanan-Worster et al., 2020). Text and image forms can be multimodally simulated and presented as follows

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Figure 1. E-KTP Making Process
Source https://chatgpt.com/c/6712169a-5398-800d-b566-737dbf8e20ac

*4.2. **Teacher as Mediator and Cultural Broker***

Teachers acted not only as instructional deliverers but also as linguistic and cultural mediators, especially during discussions of bureaucratic concepts embedded in the procedural-text topic, such as legal validity, administrative queues, and document verification (Swanwick & Gregory, 2019). Teachers reformulated complex verbal expressions, for example, the data verification process, or *queue number retrieval*, using simplified oral phrasing accompanied by gesture cues, reflecting the instructional mediation described in multimodal pedagogy literature (Rahmawati & Setiawan, 2021). When deaf students displayed ambiguous responses or misinterpreted pragmatic meanings, teachers paused the lesson to re-explain the expression through visual scaffolds and peer clarification, consistent with teacher-mediated rephrasing recommended in deaf communication research (Mayer, 2023).

Teachers also functioned as cultural brokers by explaining the sociocultural norms inherent in government-office interactions, such as greeting officers or waiting for service, aligning with findings that deaf students require explicit mediation of pragmatic norms typically acquired through incidental learning (Humphries et al., 2020). Furthermore, teachers frequently facilitated communication between deaf and hearing peers during group discussions of procedure text steps, consistent with research that situates teachers as relational brokers in inclusive classrooms (Swanwick & Gregory, 2019). These practices confirm that the teacher's mediating role is pivotal in ensuring equitable access to oral language during procedural-text instruction for deaf learners (Rahmawati & Setiawan, 2021; Mayer, 2023).

*4.3. **Peer Interaction and Social Inclusion***

Peer interaction emerged as a central mechanism supporting deaf students' oral comprehension during the procedural-text lesson, particularly when hearing peers repeated key vocabulary or demonstrated actions such as submitting the form or having their photo taken (Byatt et al., 2023). Hearing students frequently acted as speech models by exaggerating articulatory patterns, which aligns with theories of peer-mediated modeling that emphasize students as authentic linguistic input sources (Napier et al., 2020). In several group-work activities, hearing peers provided spontaneous visual supports such as pointing to procedural steps or mimicking gestures, helping deaf students maintain alignment with oral explanations, consistent with peer scaffolding documented in multimodal communication literature (Buchanan-Worster et al., 2020).

The reciprocal nature of peer support also promoted social inclusion, as deaf students felt more confident asking for clarifications from classmates rather than exclusively relying on the teacher, which

echoes findings that peer relationships strengthen linguistic and emotional engagement in inclusive settings (Byatt et al., 2023). During role-play activities simulating the civil-registration office, hearing peers modeled pragmatic expressions such as" Excuse me, I would like to apply for a national identity card KTP," enabling deaf students to practice oral phrases within scaffolded peer interactions (Napier et al., 2020). These findings underscore that peer-mediated learning is an indispensable component of oral-language development in inclusive classrooms (Buchanan-Worster et al., 2020; Byatt et al., 2023).

4.4. Technological and Environmental Support

Assistive technologies played an important supplementary role in enhancing deaf students' access to oral instruction during the procedural-text lesson, particularly transcription apps that converted teacher speech into text during explanations of administrative steps, such as the **data validation process** conducted by the officer. (Geng et al., 2021). Students frequently relied on portable speakers that amplified the teacher's voice, improving auditory perception for those with residual hearing, consistent with research demonstrating the benefits of acoustic amplification in inclusive classrooms (Zaitseva et al., 2022). Visual presentation tools such as projectors and animated procedural diagrams helped clarify sequencing concepts, in line with Universal Design for Learning recommendations emphasizing multiple means of representation (CAST, 2018).

However, technological challenges such as inaccurate automatic transcription or background classroom noise occasionally hinder comprehension. Limitations are also noted in global deaf-education studies where technology cannot fully substitute human pedagogical mediation (Snoddon & Madaparthi, 2023). Teachers frequently adjusted the pacing of instruction when transcription errors occurred, reflecting adaptive pedagogical responses encouraged in UDL-based inclusive settings (Khan, 2025). These observations affirm that while technology significantly facilitates access to oral language, effective use still depends on teacher expertise and environmental management (CAST, 2018; Zaitseva et al., 2022; Snoddon & Madaparthi, 2023).

4.5. Intersections of Oral and Signed Modalities

Although the school prioritizes an oral-based communication approach, deaf students frequently used spontaneous sign elements to resolve breakdowns during the procedural-text lesson, particularly when describing administrative actions such as waiting, filling, or collecting (Wilbur, 2019). Teachers allowed this form of code-switching because signing often expedited clarification when oral explanations became ambiguous, aligning with literature emphasizing the cognitive efficiency of visual modality for deaf learners (Wilbur, 2018). During vocabulary reinforcement activities, students alternated between oral expressions and signs to negotiate meaning collaboratively, consistent with findings that multimodal interaction enhances linguistic accuracy and reduces communication anxiety (Humphries et al., 2020).

Sign-supported clarification also occurred when deaf students discussed procedural steps with hearing peers, demonstrating that bilingual-modality interaction fosters mutual understanding and social connectedness (Napier et al., 2020). When oral-only instruction became too complex, students reverted to sign-based gestures to scaffold their comprehension before reattempting oral production, reflecting intermodality principles widely recognized in contemporary deaf-education research (Zeshan et al., 2021). These observations confirm that the coexistence of oral and sign modalities supports smoother communication flow and deeper understanding during procedural-text learning (Wilbur, 2018; Humphries et al., 2020; Zeshan et al., 2021).

5. CONCLUSION

The dynamics of oral communication in language learning for deaf students in inclusive schools can be summarized through five interrelated conclusions. First, oral approaches cannot stand alone; they require multimodal mediation that integrates visual, gestural, and technological supports to enhance language access. Second, teachers perform multiple roles not only as instructors but also as mediators and cultural brokers who interpret social cues, adjust speech patterns, and bridge communication gaps between deaf and hearing students. Third, peer interaction emerges as a significant learning source, strengthening social integration through modeling, repetition, and spontaneous clarification. Fourth,

technology provides meaningful support in facilitating comprehension, yet it can never replace the pedagogical sensitivity and human interaction required in inclusive classrooms. Fifth, the natural intersection between oral language and sign-based strategies reflects students' adaptive methods for accessing and producing meaning. These findings underscore the need for strengthened teacher training, modality-responsive classroom design, and inclusive education policies that align with the communicative needs of deaf learners.

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