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TEACHING DEAF-MUTE LEARNERS IN INCLUSIVE MAINSTREAM CLASSROOMS

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Abstract

Deaf and hard-of-hearing (DHH) Filipino tertiary learners navigate a potentially quinquelingual environment—Filipino Sign Language (FSL), regional or home sign varieties, Filipino, English, and a regional spoken mother tongue—rather than the two-language environment assumed by the canonical Bilingual-Bicultural (Bi-Bi) model. Republic Act No. 11106 (the FSL Act of 2018) recognizes FSL as the language of instruction in deaf education and tasks the Department of Education (DepEd), the Commission on Higher Education (CHED), and other agencies to use it. However, the mechanisms for realizing this mandate appear far less developed in CHED-governed tertiary institutions than in DepEd-governed basic education, a condition this study terms the DepEd-to-CHED governance gap. This study examined the visual pedagogical strategies used by hearing tertiary instructors and the communication barriers identified by both instructors and DHH students in a shared inclusive higher education setting. This qualitative study used semi-structured in-depth interviews with four hearing tertiary instructors and six DHH college students (aged 18–23), all from the same CHED-governed institution, conducted between October 2025 and April 2026. Data were analyzed using reflexive thematic analysis (Braun & Clarke,

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2006, 2019, 2024) with a Deaf FSL co-researcher and a Deaf expert consultant. Interpretation was informed by the Bi-Bi framework (Mahshie, 1995), Universal Design for Learning (Rose & Meyer, 2002), Vygotsky's (1978) sociocultural theory, Deafhood (Ladd, 2003), and Deaf Gain (Bauman & Murray, 2014). Four themes were generated: (1) The Architecturally Invisible Classroom: Visual Incoherence as Instructional Failure; (2) Filipino Sign Language as the Epistemic Core of Deaf Academic Knowledge Construction; (3) The Provider-Recipient Divergence: Instructor and Student Framings of Communication Barriers; and (4) Assessment as Linguistic Gatekeeping: The CHED Accountability Gap. Instructors tended to frame barriers as within-student linguistic challenges, whereas students framed them as systemic failures of environmental access. The findings challenge the adequacy of the two-language Bi-Bi model for the Philippines' hyper-multilingual Deaf ecology and point to possible non-compliance with Article 24 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD) at the tertiary level. Recommendations address instructional practice, assessment reform, CHED policy development, and community-grounded legislative action.

Keywords: *Filipino Sign Language (FSL); Bilingual-Bicultural (Bi-Bi) education; inclusive tertiary education; CHED governance gap; reflexive thematic analysis*

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INTRODUCTION

Globally, an estimated 466 million people live with disabling hearing loss, including 34 million children (World Health Organization, 2021). The education of deaf and hard-of-hearing (DHH) learners is shaped by the pedagogical philosophies, communicative architectures, and institutional structures of schools and universities (Spencer & Marschark, 2010). DHH learners are, however, internally heterogeneous. Individuals with mild hearing loss may access spoken language through amplification, whereas many deaf individuals depend on signed language for full and natural access to communication and learning (Lederberg et al., 2013). This heterogeneity calls for pedagogical frameworks grounded in visual-spatial cognition, signed language, and multimodal communication, rather than merely accommodating a hearing-centered design.

In the Philippines, this challenge unfolds within an unusually complex linguistic landscape. The country is home to more than 180 languages and a population of over 110 million. Filipino (Tagalog-based) and English are the languages of instruction in most formal settings (Commission on the Filipino Language, 2018), and the national mother tongue-based multilingual education (MTB-MLE) policy adds another language layer in the early primary grades. A Filipino Deaf learner therefore navigates a potentially quinquelingual environment—FSL, a regional or home sign variety, Filipino, English, and a regional spoken mother tongue—rather than a bilingual one. This complexity is largely absent from the DHH education literature, which developed primarily in North American and Scandinavian two-language contexts (a sign language plus the majority spoken language) and has profound implications for how the Bilingual-Bicultural (Bi-Bi) framework must be adapted to Philippine conditions (Spencer & Marschark, 2010; Nyst, 2013). Research from other Global South contexts, including Uganda (Nuwagaba & Orech, 2019), South Africa (Moodley & Storbeck, 2011), and West Africa (Nyst, 2013), has shown that the two-language assumption is a systematic limitation when the Bi-Bi literature is applied outside resource-rich Western settings. The Philippine case extends this critique because learners must manage multiple signed varieties and multiple spoken and written languages simultaneously.

Republic Act No. 11106, the Filipino Sign Language Act of 2018, is a landmark in the legislative recognition of FSL. It declares FSL the national sign language and the language of instruction of deaf education (Section 3), and it tasks DepEd, CHED, the Technical Education and Skills Development Authority (TESDA), and other agencies involved in deaf education to use and coordinate on FSL as the medium of instruction (Section 4[a]) (Republic of the Philippines, 2018). Earlier legislation had already recognized FSL in deaf education from early childhood through the secondary level. In practice, however, the operational architecture for FSL-medium education is far more developed in basic education, where DepEd maintains an inclusive education framework and a Special Education (SPED) teacher pathway (DepEd, 2009), than in CHED-governed tertiary institutions. To the authors' knowledge, no comparable implementing regulations, teacher-preparation requirements, or assessment standards specific to FSL-medium tertiary instruction have been issued. We refer to this as the *DepEd-to-CHED governance gap*: the gap between the legal recognition of FSL and the institutional mechanisms needed to realize it in higher education. For DHH students who move from basic to tertiary education, this gap may mean losing the supports that made schooling accessible. It raises concerns under Article 24 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD), which guarantees inclusive education at all levels, and it is the central policy problem motivating the present study.

These structural gaps do not exist in an ideological vacuum. Special education globally has long been shaped by a tension between the medical model of deafness, which treats hearing loss as a deficit requiring remediation through oral-aural methods, and the cultural-linguistic model, which recognizes DHH people as members of a cultural and linguistic minority entitled to education through their natural language (Padden & Humphries, 1988; Lane, 1999; Ladd, 2003). In the inclusive tertiary classroom, this tension appears as concrete pedagogical reality. Hearing instructors, trained mainly in mainstream traditions and not themselves Deaf, may default to spoken Filipino or English even when DHH students are enrolled in their sections. Assessment instruments remain organized around written Filipino and English performance without FSL-accessible alternatives. Physical designs

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such as seating, lighting, and room acoustics are typically planned without Deaf visual attention in mind. The residue of the medical model is thus expressed less as explicit ideology than as the accumulated structural assumptions of a hearing-designed higher education system.

Despite meaningful growth in Philippine DHH education research (Dela Fuente, 2021; Cosmod & Villarente, 2025; Sea-Inspire Journal, 2025), the experiences of Deaf college students and their hearing professors in shared instructional environments remain a critical empirical gap. Internationally, the Global South is substantially underrepresented, and designs that compare instructor and student framings within a shared instructional environment are uncommon (Antia et al., 2010; Schick et al., 2006; Nuwagaba & Orech, 2019; Moodley & Storbeck, 2011; Todorov et al., 2024). This study addresses these gaps.

Theoretical Framework

Five frameworks informed the study's interpretation of the data. The Bi-Bi framework (Mahshie, 1995) positions a natural sign language as the learner's first language (L1) and the majority written language as a second language (L2), with instruction sequenced from L1 to L2. Universal Design for Learning (UDL; Rose & Meyer, 2002) holds that designing for learner variability at the outset, rather than retrofitting accommodations, improves access for all learners. Vygotsky's (1978) sociocultural theory, particularly the zone of proximal development (ZPD), directs attention to how language mediates learning and how scaffolding can be supported or disrupted. Deafhood (Ladd, 2003) and Deaf Gain (Bauman & Murray, 2014) reframe deafness as a cultural-linguistic identity and a source of human diversity rather than a deficit, and they require researchers to attend to Deaf epistemological authority.

Purpose and Research Questions

This study investigated the visual pedagogical strategies employed by hearing tertiary instructors and the communication barriers experienced by both instructors and Deaf tertiary students in a Philippine inclusive higher education setting. It sought to answer the following questions:

1. What visual and multimodal pedagogical strategies do hearing tertiary instructors employ in teaching DHH learners in Philippine inclusive college courses?

2. What communication barriers do hearing tertiary instructors identify within their instructional practice with DHH learners?

3. What communication barriers do DHH tertiary learners identify within their college educational experience?

4. How do instructor-identified and student-identified communication barriers converge and diverge within a shared tertiary instructional environment, and what are the implications of any divergence for CHED governance of DHH inclusive education?

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METHODS

Research Design

This study used a qualitative design with reflexive thematic analysis (Braun & Clarke, 2006, 2019; Xu & Zammit, 2020). Reflexive thematic analysis was selected because it suits the study's constructivist stance: hearing instructors' and DHH students' experiences of visual pedagogy, and the communication barriers they describe, are understood as actively constructed through social interaction, institutional context, and cultural-linguistic positioning rather than as objectively given (Guba & Lincoln, 1994). The researcher's active role in pattern-making is treated as an epistemological resource to be documented reflexively, not as a source of bias to be suppressed (Braun & Clarke, 2024). The study is situated within the interpretivist paradigm (Creswell & Poth, 2018) and draws on elements of the descriptive phenomenological tradition in its attention to the texture of participants' experience (Moustakas, 1994). It does not claim generalizable findings; it seeks transferable insights grounded in thick description (Lincoln & Guba, 1985).

Researcher Positionality and Deaf Epistemological Authority

The researchers are hearing and competent in intermediate FSL, which they acquired through an interpreter training program offered by the Philippine Institute for the Deaf community. Their relationship to the participating institution is purely academic; none had a prior supervisory, evaluative, or employment relationship with any participant. As hearing researchers studying Deaf experience, they occupy a position of linguistic privilege. The Deafhood framework (Ladd, 2003) demands acknowledgment that such research risks reproducing the epistemological asymmetry it seeks to critique by centering hearing analytical frameworks on Deaf lived experience.

To address this risk, Deaf epistemological authority was built into multiple stages of the research rather than only into transcription. The FSL co-researcher, a Deaf, FSL-proficient researcher with tertiary teaching experience, participated not merely as an interpreter during student interviews but as an active co-analyst who (a) generated independent initial codes across 30% of the FSL-interview dataset before the primary researcher's coding began; (b) held co-equal interpretive authority in the reflexive peer-debriefing sessions that produced the thematic groupings; and (c) reviewed and contested preliminary themes where the primary researcher's frame appeared hearing-centric. The co-researcher's independent codes, and the documented divergences from the primary researcher's codes, form part of the dependability audit trail. In addition, an independent Deaf-expert consultant, an FSL-proficient Deaf professional engaged after data collection, validated all FSL-derived transcripts for semantic and cultural-linguistic fidelity, with authority to reject interpretive framings that misrepresented Deaf experiential meaning.

The absence of a Deaf researcher in the primary researcher role is nonetheless acknowledged as a fundamental limitation. Analytical claims are therefore framed as claims about how Deaf tertiary learners experience a hearing-designed institution, not as claims about Deaf epistemology as such.

Setting, Participants, and Sampling

Purposive sampling (Creswell & Poth, 2018) was used to recruit participants from a single Philippine higher education institution (HEI) under CHED governance that formally implements inclusive education practices for DHH learners. The site was chosen because it maintains inclusive course sections across multiple colleges in which hearing instructors and DHH students share an instructional context, the structural condition required for the study's cross-participant design. The site is a relatively progressive DHH-inclusive institution; this is a selection bias that likely underestimates access barriers at less well-resourced HEIs (see Limitations).

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Instructors. Instructor participants were (a) assigned to a course section with enrolled DHH students during data collection; (b) hearing; (c) holders of a SPED endorsement or instructors with at least two years' experience teaching DHH learners in tertiary inclusive settings; and (d) willing to give informed consent. Four instructors (T1–T4) participated, with two to eleven years of experience teaching DHH students. Three held formal SPED endorsements, and one was enrolled in an in-service SPED certification program. Two reported conversational FSL proficiency, and two reported basic FSL competency. All four taught at the institution where the student participants were enrolled and had direct instructional relationships with them.

Students. Student participants were (a) deaf or hard-of-hearing; (b) enrolled at the tertiary level at the research site; (c) aged 18 to 23 at the time of data collection; and (d) willing to give written informed consent. Six students (S1–S6) participated. Four are profoundly Deaf (S1, S2, S4, S5), and two have moderate-to-severe hearing loss and use both FSL and oral communication (S3, S6). All were enrolled in sections taught by one or more instructor participants. Participant characteristics are shown in Table 1. S6's profile (age 23, first-year graduate student in education, 17 years in inclusive settings) represents an unusually successful educational trajectory, which limits the transferability of that account to learners with more disrupted educational histories.

Table 1. **Characteristics of Study Participants**

ID	Role	College / Dept.	Age	Hearing profile	FSL proficiency	Yrs. DHH incl.	SPED cert.
T1	Professor	College of Education – BSED-English; Gen Ed inclusive sections	28	Hearing	Conversational FSL	11	SPED endorsed
T2	Instructor	College of Arts & Sciences – General Psychology, Intro to Research	25	Hearing	Basic FSL	4	In-service SPED (ongoing)
T3	Asst. Prof.	College of Communication – Communication Theory, Media Studies	32	Hearing	Basic FSL	2	SPED endorsed
T4	SPED Coord. / Adj. Instr.	OSA / Allied Health – DHH academic support; inclusive tertiary ed. coordination	40	Hearing	Conversational FSL	7	SPED endorsed
S1	Student	BS Education, 1st year – T1's Gen Ed inclusive section	18	Profound deafness	FSL dominant	13	N/A

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ID	Role	College / Dept.	Age	Hearing profile	FSL proficiency	Yrs. DHH incl.	SPED cert.
S2	Student	BS Psychology, 2nd year – T2's Intro to Research section	19	Profound deafness	FSL dominant	14	N/A
S3	Student	BA Communication, 2nd year – T3's Communication Theory section	20	Moderate-to-severe hearing loss	FSL and oral	14	N/A
S4	Student	BS Social Work, 3rd year – T1's and T4's DHH support network	21	Profound deafness	FSL dominant	15	N/A
S5	Student	BS Education, 4th year – T4's academic support coordination; board exam prep context	22	Profound deafness	FSL dominant	16	N/A
S6	Student	BS Education, graduate year 1 – T1/T3 teaching supervised; thesis via T4	23	Moderate-to-severe hearing loss	FSL and oral	17	N/A

Note. All participants were affiliated with the same CHED-governed HEI. FSL = Filipino Sign Language; Adj. Instr. = Adjunct Instructor; SPED Coord. = Special Education Coordinator; Yrs. DHH incl. = years of documented experience with DHH learners in inclusive educational settings.

Data Collection

Data were collected through individual semi-structured in-depth interviews conducted over six months, from October 2025 to April 2026. Each interview lasted 60 to 90 minutes. This format was chosen because it allows the depth, elaboration, and probing that reflexive thematic analysis requires (Braun & Clarke, 2006; King & Horrocks, 2010).

Separate interview guides were developed for instructors and students (Appendix A) on the basis of comparable instruments in DHH tertiary education research (Antia et al., 2010; Dela Fuente, 2021; Todorov et al., 2024; Nuwagaba & Orech, 2019) and refined through a pilot with one instructor and one student, both excluded from the main study. The instructor guide addressed daily instructional strategies with DHH learners, FSL use in classroom communication, experiences of communication breakdown, assessment practices, and perceived institutional supports and barriers. The student guide addressed experiences of understanding and being understood in college courses, preferred ways of receiving instruction, moments of communicative access failure and success, experiences of being assessed, awareness of CHED accommodation policies, and views on institutional reform. Student interviews were conducted in each participant's preferred language: four primarily

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in FSL with the FSL co-researcher-interpreter present, and two in a combination of FSL and spoken Filipino. All interviews were audio- and video-recorded with consent.

Translation and Transcript Validation

To ensure semantic and cultural-linguistic fidelity, the study used a three-stage validation protocol rather than standard back-translation, which is epistemologically misaligned with spatial-visual languages. First, the FSL co-researcher-interpreter transcribed the interviews. Second, the primary researcher verified the transcripts against the video recordings. Third, an independent Deaf-expert consultant validated all FSL-derived transcripts, with Deaf epistemological authority prioritized over translational equivalence so that nuanced concepts, such as the epistemic function of FSL in academic conceptualization, were captured accurately rather than rendered literally.

Back-translation protocols (Monikowski & Winston, 2003) were designed for spoken and written language pairs and presuppose a single, stable meaning that an independent second translator can recover. In FSL, grammatical meaning is conveyed simultaneously through handshape, movement, location, facial grammar, and body orientation, so any written transcription involves an interpretive transformation that a second translator would reproduce rather than independently verify. Placing a Deaf expert as the final authority on cultural-linguistic meaning was therefore judged a more appropriate safeguard for sign language data. Member checking of all transcripts was completed within two weeks of each interview (Lincoln & Guba, 1985); two participants (T2 and S4) offered minor clarifications, which were incorporated.

Data Analysis

Analysis followed the six phases of reflexive thematic analysis (Braun & Clarke, 2006, 2019, 2024): (1) familiarization through repeated reading and active noting; (2) systematic generation of initial codes across the dataset; (3) searching for themes by clustering codes; (4) reviewing themes against the coded data and the full dataset; (5) defining and naming themes; and (6) producing the written analysis through selection of representative extracts and development of an analytic narrative. Analysis was theoretically informed by the Bi-Bi, UDL, sociocultural, Deafhood, and Deaf Gain frameworks and included latent-level analysis to surface underlying ideological assumptions in instructor and student discourse about communication and pedagogy.

The primary researcher and the FSL co-researcher independently coded 30% of the dataset and then engaged in structured reflexive dialogue to compare, question, and negotiate their coding decisions. This was a reflexive peer-debriefing exercise, not an intercoder reliability exercise: Braun and Clarke (2019) caution that reliability statistics such as Cohen's kappa presuppose singular, researcher-independent meanings in the data, an assumption that reflexive thematic analysis rejects. Divergent interpretations were treated as analytic resources, not errors, and were recorded in a shared coding memo that forms part of the dependability audit trail.

As a pragmatic check on the adequacy of the sample, and not as a stopping rule, the researchers tracked whether new codes emerged in later interviews. No new codes emerged after the third instructor interview (T3), suggesting that coding for this group had stabilized, consistent with Guest et al.'s (2006) finding that saturation in homogeneous groups is typically reached within 6 to 12 interviews. In the student group, new sub-codes continued to emerge through the fifth interview (S5), and S6's graduate-level perspective added an analytic dimension not present earlier. Saturation for students may therefore have been approached but not fully achieved (see Limitations).

Reflexivity and Analytic Decisions

Reflexive memos were kept throughout coding. Three memos shaped the analysis. First, the researchers noticed that instructors described their visual-first design as self-built rather than CHED-mandated. Given the governance

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gap, this carried an implicit critique of institutional policy and led the researchers to make the CHED regulatory gap the primary organizing frame of the Discussion. Second, S6's remark that being given only the written form of content first was "the wrong order" was recognized as a precise structural diagnosis of a Bi-Bi sequencing violation rather than a complaint about access; it was therefore treated as theoretical evidence and informed the ZPD analysis. Because S6's advanced metalinguistic articulation reflects 17 years in inclusive settings and graduate-level study, it was read as validating and theorizing, but not replacing, the more experiential accounts of S2 and S5. Third, the researchers initially coded T2's and T3's accounts as "within-student deficit framing." The FSL co-researcher's independent coding led to a reappraisal: T3's description of the difficulty of bridging from FSL to academic written Filipino accurately identifies the L1-to-L2 transfer challenge that Bi-Bi pedagogy addresses. This correction gave rise to Sub-theme 3d.

Trustworthiness

Trustworthiness was addressed using the four criteria of Lincoln and Guba (1985). Credibility was supported by six months of site engagement, triangulation of instructor and student voices, member checking of all transcripts, Deaf-expert validation of all FSL-derived transcripts, and reflexive journaling on interpretive uncertainty (Nowell et al., 2017). Transferability was supported by thick description of context, participants, and analytic process. Dependability was supported by the coding audit trail and the two-researcher reflexive dialogue. Confirmability was supported by the reflexive positionality statement, the analytic decision trail, and the FSL co-researcher's independent coding record.

Ethical Considerations

The Institutional Research Ethics Committee of Wesleyan University-Philippines granted ethical clearance. All participants were adults aged 18 or older and gave signed informed consent; no parental consent was required. To reduce the risk of institutional power dynamics during recruitment, students were recruited through a two-step voluntary opt-in process consisting of a general information session open to all DHH students followed by individual consent meetings. Participants were told that declining to participate would not affect their academic standing or employment. Given the risk of disability stigma in Philippine institutional settings (Fulgencio & Gines, 2016), all data were anonymized, and the research site is described only broadly.

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RESULTS

Reflexive thematic analysis of ten interview transcripts (four instructors and six DHH students, all from the same CHED-governed institution) produced four overarching themes with multiple sub-themes (Table 2). Sub-themes are named in line with the Reflexive Thematic Analysis Reporting Guidelines (Braun & Clarke, 2024). Extracts are identified by participant codes (T for instructors, S for students), and extracts translated from FSL are marked [FSL].

Table 2. **Overview of Themes and Sub-themes**

Theme	Sub-themes
1. The Architecturally Invisible Classroom: Visual Incoherence as Instructional Failure	1a. Visual-first design as institutional orientation versus classroom-by-classroom practice; 1b. The attentional coherence imperative: visual presence versus visual integration; 1c. Learning disrupted by simultaneous competing visual streams
2. Filipino Sign Language as the Epistemic Core of Deaf Academic Knowledge Construction	2a. FSL as the language of deep cognitive processing versus written language as surface-level decoding; 2b. The L1–L2 inversion: instruction beginning at L2 without L1 conceptual grounding; 2c. The academic register gap: instructor FSL limited to social and classroom-management signs; 2d. FSL proficiency variation between FSL-dominant and dual-mode learners
3. The Provider-Recipient Divergence: Instructor and Student Framings of Communication Barriers	3a. Instructor framing: barriers as within-student linguistic bridging challenges; 3b. Student framing: barriers as systemic environmental access failures; 3c. The divergence as structural rather than ideological; 3d. A Bi-Bi-compatible reading of instructor observations: bilingual challenge versus deficit framing
4. Assessment as Linguistic Gatekeeping: The CHED Accountability Gap	4a. Written majority-language assessment as a proxy for content knowledge; 4b. Informal and inconsistent accommodation: privilege, not equity; 4c. FSL-influenced syntax penalized as grammatical error; 4d. The regulatory vacuum: no institutional standard or accountability mechanism reported; 4e. Extended time versus FSL-medium assessment

Theme 1: The Architecturally Invisible Classroom: Visual Incoherence as Instructional Failure

All four instructors described visual and multimodal strategies as the foundation of their instructional design and as primary conditions of DHH student access, not supplementary accommodations. This reflects a genuine institutional orientation toward visual-first pedagogy, one that the site had developed through accumulated practice rather than through formal UDL or DHH pedagogy training (see Sub-theme 1b).

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Sub-theme 1a: Visual-first design as institutional orientation versus classroom-by-classroom practice

T1, a College of Education professor with eleven years of inclusive teaching experience, described her planning philosophy:

Every time I prepare a lesson, the first question I ask is: how will my Deaf students see this? Not hear it—see it. I plan the visual component first, and then I build the verbal explanation around what is already visible on the board or on the screen. The drawings, the concept maps, the color-coded vocabulary, those are not extras. Those are the lessons themselves for my DHH students. (T1)

T4, the SPED coordinator and adjunct instructor, described how this orientation had been institutionalized locally:

We have moved, as a college, toward what I would describe as a visual-first orientation. Every inclusive classroom has a visual schedule, a vocabulary display updated weekly, and a signing space where the instructor or I can move freely. This was not mandated by CHED; we built this ourselves because we understood that if the environment is not visually constituted, DHH learners cannot access the instruction. (T4)

Sub-theme 1b: The attentional coherence imperative

Participants' accounts showed that what separated effective from ineffective visual pedagogy was not the presence of visual material but its attentional coherence. S5, a fourth-year education student, drew this distinction sharply:

[FSL] When my professor uses a projector while explaining, I can build the concept in my mind. But when the professor writes on the board and talks at the same time, I cannot watch and follow. I got the diagram, but I lost the explanation. So the diagram on the board becomes meaningless to me. (S5)

S2, a second-year psychology student, gave a structurally parallel account from a different discipline:

[FSL] My research professor draws the theoretical model while signing the key terms. When these happen together, I follow the entire lecture. I connect the ideas. When the professor switches to dense PowerPoint slides and lectures verbally without signing, I can read individual words, but I lose the conceptual thread. I get fragments. I do not get the theory. (S2)

Across different colleges and courses, these accounts point to a more specific claim than "visual strategies help." For these students, comprehension depended on whether FSL and visual materials shared the same attentional field and were sequenced coherently, and not merely on whether both were present.

Sub-theme 1c: Learning disrupted by competing visual streams

When signed explanation and visual content competed for attention, or when spoken explanation replaced signing altogether, students described losing the link between the visual material and its explanation. Instructors, for their part, generally had no formal UDL or DHH visual-attention training to draw on, and continued to teach while students had, in effect, lost the thread of the lesson (S5: "I got the diagram, but I lost the explanation"; S2: "I get fragments").

Theme 2: Filipino Sign Language as the Epistemic Core of Deaf Academic Knowledge Construction

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Sub-theme 2a: FSL as the language of deep cognitive processing

All six students described FSL as a primary language for understanding: the language in which they think, conceptualize, and process new knowledge, and not merely a language in which instruction is received. S4, a third-year social work student, articulated the distinction:

[FSL] When my professor explains something in FSL and uses the signs, I know something in my mind pops up. It is like the concept lands. When he writes it in English or Filipino, I can read it. Sometimes it is just letters and words, not meaning. FSL gives me meaning. English gives me text. These are not the same things. (S4)

Sub-theme 2b: The L1–L2 inversion

S6, a graduate student with moderate-to-severe hearing loss who uses both FSL and oral communication, described the two languages as tools for different jobs and objected to how instruction was sequenced:

I think that FSL and written Filipino are two tools for two different jobs. I work in FSL when I need to understand something and think deeply. On the other hand, when I need to write a report or take an exam, I shift to written Filipino. However, my professors do not always give me the FSL side first. Sometimes I am given only the written side and expected to understand without having had the signed version. I think this is the wrong order. (S6)

Sub-theme 2c: The academic register gap

Instructors' FSL proficiency was generally limited to social and classroom-management registers. T2, an instructor in the College of Arts and Sciences, acknowledged this limit:

I know about fifty to sixty signs. I know mostly the basic classroom signs, such as sit, stand, listen, and good job. I do not have the FSL for teaching research methodology, sampling design, validity threats, and inferential statistics. I just write them on the board. I draw diagrams if needed. I hope that the diagram carries the concept that my signs cannot. (T2)

Sub-theme 2d: FSL proficiency variation

FSL-dominant students (S1, S2, S4, S5) and students with moderate-to-severe hearing loss who use both FSL and oral communication (S3, S6) experienced FSL's epistemic role differently. For FSL-dominant students, FSL was the only medium of deep conceptual processing, and written Filipino offered no equivalent depth. For dual-mode students, FSL and oral or written language interacted in more complex ways, and S3's and S6's accounts suggested a dynamic process of code-switching.

Theme 3: The Provider-Recipient Divergence: Instructor and Student Framings of Communication Barriers

A marked divergence emerged in how hearing instructors and DHH students conceptualized communication barriers. Because all participants shared the same institution, courses, and classrooms, the divergence cannot be attributed to differences in setting. Instructors predominantly framed barriers as within-student linguistic challenges, such as the difficulty DHH students experience with written Filipino or English morphology and with code-switching between FSL and written language. Students framed barriers as systemic failures of environmental access: conditions in which the communicative architecture of the classroom was not designed for Deaf visual attention or for how Deaf learners receive and process information.

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Sub-theme 3a: Instructor framing

T2 exemplified the instructor framing:

The biggest challenge I see is that my DHH students struggle with Filipino academic grammar, verb agreements, and sentence structures. Their written Filipino often reflects their sign language grammar, which is different. I try to address this gently, but it interrupts the lesson pacing. (T2)

T3 offered a similar but more nuanced account:

My DHH students can sign beautifully—their FSL vocabulary is strong for the discipline. But when I ask them to write an analytical essay, the connection between their conceptual understanding in FSL and their written academic production in Filipino is not yet fluent. The barrier is the bridging. (T3)

Sub-theme 3b: Student framing

Students located the barriers in the design of the classroom. S5 described the physical and attentional environment:

[FSL] There is a ceiling fan in our classroom. The vibration is constant when it is on. But my bigger problem is that my classmates laugh and talk during the lecture. I cannot hear them, but I can feel that my professor's attention has shifted to managing their behavior. When the professor looks away from me to address a hearing student, I lose the lecture. Nobody planned this classroom for me. It was designed for hearing students, and I am inside it. (S5)

S4 described how information travels in the classroom:

[FSL] The barrier for me is not that I do not understand Filipino or English words. I can read well. The barrier is in the class. The information moves through sound. When my classmate asks a question, the professor answers with their back to the board. When the discussion starts, all of those are invisible to me. I receive only what is written or signed. Almost eighty percent of class time, nothing is being written or signed. That eighty percent is my barrier. (S4)

Sub-theme 3c: A structural rather than ideological divergence

The divergence appeared to arise from the different evaluative positions of providers and recipients rather than from any lack of care or professionalism on the instructors' part. Instructors tended to judge the adequacy of their communicative provision by what they supplied, whereas students judged it by what actually reached them. T4's reflexive questions, such as whether the student actually received what was taught, illustrate genuine pedagogical reflection. Yet, on participants' accounts, students were positioned as guests in a hearing-designed environment, not as co-designers of their educational conditions, and no mechanism existed through which students' evaluations of communicative access were solicited or acted on. The providers' perspective was, in effect, the only one accounted for institutionally.

Sub-theme 3d: A Bi-Bi-compatible reading of instructor observations

T2's and T3's observations were not reducible to medical-model deficit thinking. Both identified a real bilingual challenge: acquiring the written majority language is a genuine difficulty for DHH learners and not merely an artifact of inadequate pedagogy (Wang et al., 2008; Mayer & Akamatsu, 2003). What distinguished T2's account was the remedial strategy of correcting L2 grammar, not the observation of difficulty. T3's description of "the bridging" is close to how Bi-Bi pedagogy itself characterizes the L1-to-L2 transfer task.

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Theme 4: Assessment as Linguistic Gatekeeping: The CHED Accountability Gap

Assessment was the site of communicative access failure that all six students described most acutely, and it carried the most direct consequences for their grades. They described examinations and assessment practices that imposed written Filipino or English linguistic demands and that, in their view, systematically disadvantaged their ability to demonstrate content knowledge.

Sub-theme 4a: Written assessment as a proxy for content knowledge

S3, a second-year communication student with moderate-to-severe hearing loss, described the core measurement validity problem:

When I take an exam, the instructions contain complex Filipino academic syntax. It has long sentences with embedded clauses and discipline-specific terms, which I have not encountered in signed form. I know the communication theory. I understood it in class through the diagrams and the FSL explanations. However, the exam requires me to analyze it in Filipino academic prose. The time is not enough to translate my understanding from FSL into that register. Also, I need to construct a full analytical response. I finished less. My grade is lower. It is not because I understood less. (S3)

Sub-theme 4b: Informal and inconsistent accommodation

S5 described how the absence of institutional policy made accommodation depend on individual goodwill:

[FSL] The board examination preparatory assessments are conducted in Filipino and English. There is neither an FSL version nor an interpreter. When I ask for more time, sometimes the professor agrees, but sometimes not. It depends on the proctor's attitude. There is no institutional policy about this. It is just my luck. My grade in clinical subjects depends partly on what I know and partly on whether that day I was lucky with the examiner or not. (S5)

Sub-theme 4c: FSL-influenced syntax penalized as error

S6 identified rubric-level penalization of FSL-influenced writing:

My thesis drafts and scholarly essays were graded by my professors on grammatical correctness as well as argumentation. FSL grammar is different from Filipino academic grammar. When I write in Filipino, the syntactic structure sometimes reflects my FSL thinking—topic-comment constructions and spatial reference patterns that do not map onto standard Filipino academic prose. I am not making errors. I am transferring between two legitimate yet complex linguistic systems. However, the rubric considers it an error and deducts points. My scholarly thinking is penalized for the surface features of my linguistic identity. (S6)

Taken together, the accounts of S2 (fragmented lecture comprehension, Theme 1), S5 (examination outcomes dependent on "luck"), and S6 (rubric-level penalization of syntactic transfer) describe a continuum of experience across the student cohort, from the classroom to the assessment instrument.

Sub-theme 4d: The regulatory vacuum

No participant described an institutional standard, formal procedure, or accountability mechanism governing FSL-accessible assessment. Where accommodations occurred, they depended on individual instructors' or proctors' discretion (S5), and students were unaware of any CHED policy on which they could rely.

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Sub-theme 4e: Extended time versus FSL-medium assessment

Extended time was offered as an informal accommodation (T1; S5). Students' accounts, however, indicated that the difficulty lay in the language and register of the assessment, not in time alone: S3 described time as insufficient because of the effort required to translate understanding from FSL into academic Filipino prose. Additional time therefore prolonged exposure to the same linguistic barrier without changing the medium in which knowledge had to be demonstrated.

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DISCUSSION

This study examined the visual pedagogical strategies of hearing tertiary instructors and the communication barriers experienced by instructors and DHH students in a shared Philippine inclusive higher education environment. Together, the four themes describe an institution in genuine transition: committed to DHH inclusion and building visual-first practice on its own initiative, yet operating without the regulatory framework needed to sustain FSL-medium instruction and assessment. This section opens with the governance gap as the study's primary policy contribution and then interprets the themes in relation to pedagogical design, the limits of the Bi-Bi model in a multilingual context, the divergence between instructors and students, and assessment equity.

The DepEd-to-CHED Governance Gap

The study's most significant policy contribution is identifying a gap between the legal recognition of FSL and the operational mechanisms needed to realize it in CHED-governed tertiary education. The FSL Act tasks CHED, alongside DepEd and TESDA, to use FSL as the medium of instruction in deaf education (Republic of the Philippines, 2018, Sec. 4[a]), and DepEd has developed inclusive-education and SPED teacher pathways (DepEd, 2009). The participants' accounts, however, describe an institution with no FSL-specific standards, teacher-preparation requirements, or assessment protocols at the tertiary level. Instructors built visual-first practice themselves because, as T4 put it, it "was not mandated by CHED" (Theme 1), and S5's dependence on a proctor's goodwill and S6's rubric-penalized thesis (Theme 4) are better understood as predictable outputs of an absent regulatory framework than as isolated instructor failures.

This pattern raises concerns under UNCRPD Article 24, which guarantees inclusive education at all levels without discrimination. It also means that the problem cannot be solved student by student through informal accommodation. It is a structural accessibility problem that calls for policy redesign (Oliver, 1990), consistent with UDL's argument that designing for the margins improves the center (Rose & Meyer, 2002). FSL-accessible assessment protocols developed for DHH students may also benefit other linguistically diverse tertiary learners. Because this study draws on a single site, these claims describe the conditions reported by participants; a systematic review of existing CHED issuances and implementing rules is needed to confirm the extent of the gap nationally.

Philippine Linguistic Pluralism and the Limits of the Bi-Bi Model

The Bi-Bi model assumes two language systems: a sign language as L1 and the written form of the majority community's language as L2. Filipino Deaf tertiary students live a more complicated reality in which FSL, Filipino, and English coexist with regional sign varieties and regional spoken mother tongues. Themes 2c and 2d showed that even within a single institution, FSL-dominant and dual-mode learners engaged FSL and written language differently; the dynamic code-switching described by S3 and S6 is not fully captured by a simple L1–L2 sequence. These findings are consistent with Global South research questioning the two-language assumption (Moodley & Storbeck, 2011; Nuwagaba & Orech, 2019), although the extent to which that assumption fails remains contested.

Regional variation in FSL is a particularly important issue. Students from the Visayas, Mindanao, or the Cordillera who enter HEIs where a Manila-based standard of FSL predominates may encounter that standard as a second sign language, adding a further layer to their language repertoire. Imposing a standardized sign language on regional Deaf communities is a form of language planning that can produce center-periphery inequalities within the Deaf community (De Meulder, 2019; Kusters & De Meulder, 2019). Neither the FSL Act nor CHED policy, as far as the authors are aware, addresses the right of DHH learners from regional communities to instruction in their home sign variety. Because this study did not examine regional variation directly, it remains a priority for further research.

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Partial Bi-Bi Implementation and the Incoherence Paradox

Themes 1 and 2 show that the classrooms studied used visual and multimodal strategies and that FSL was central to students' learning. But the Bi-Bi framework was only partially implemented: the sequencing of FSL as L1 before written language as L2, which is fundamental to Bi-Bi instruction (Mahshie, 1995; Mayer & Akamatsu, 2003), was not consistently followed. We describe the resulting condition as an *incoherence paradox*. Good-faith, visual-first practice, developed locally and without formal UDL or DHH pedagogy training, can coexist with instruction that is still inaccessible because visual and signed streams compete or because content reaches students first in written L2.

The Vygotskian framework helps explain why this matters. In Theme 1, when signed explanation and projected or written content competed for attention, or when spoken explanation replaced signing, students described losing the explanation while retaining only the diagram. In sociocultural terms, the mediated scaffolding that should carry the learner through the ZPD was fragmented rather than merely reduced: the instructor continued teaching while the student's zone of development was disconnected from the flow of instruction. The same lens clarifies Theme 2b. Failing to ground instruction in L1 before engaging L2 is not just a sequencing error; it removes the mediating scaffold through which DHH learners reach the ZPD. Evidence on visual attention in deaf individuals (Bavelier et al., 2006) and on visual teaching strategies (Luckner et al., 2001) is consistent with the students' reports that split-attention conditions impaired comprehension, although the present study did not test attentional processes directly.

Sub-theme 2c illustrates the same problem from the instructor side. T2's knowledge of fifty to sixty basic signs and his reliance on diagrams to "carry the concept" exemplify what Johnson et al. (1989) called the challenge of unlocking the curriculum: when instructors' FSL is limited to social registers, FSL cannot perform its epistemic function in the academic context, and diagrams and text mediate a shallower zone of processing. This is consistent with the institutional genealogy of the site's practice. The SPED teacher pathway that formed instructors such as T1 and T4 is grounded in DepEd policy (DepEd, 2009), whereas, to the authors' knowledge, no mandatory FSL or DHH pedagogy training exists at the CHED level. The result parallels Dela Fuente's (2021) finding of goodwill toward DHH students without the professional training needed to implement Bi-Bi sequencing, an academic FSL register, or systematic visual-attention management. Similar patterns have been reported in the United States (Nover & Andrews, 1998), Canada (Mayer & Akamatsu, 2003), South Africa (Moodley & Storbeck, 2011), and Uganda (Nuwagaba & Orech, 2019).

The Provider-Recipient Divergence

Theme 3 is analytically distinctive because it emerged from participants sharing the same institution, courses, and classrooms, and it therefore cannot be dismissed as a cross-level artifact. The instructor framing is not incorrect: acquiring the written majority language is a genuine bilingual challenge (Sub-theme 3d). It is, however, incomplete, because it locates the barrier within the student and directs remedial effort toward L2 grammar correction, whereas Bi-Bi pedagogy addresses the same challenge through L1-grounded L2 instruction. The student framing places the barrier in the classroom's communicative architecture, consistent with the social model of disability (Oliver, 1990) and Deaf Gain (Bauman & Murray, 2014). The divergence appears to reflect the different evaluative positions of providers and recipients, consistent with concerns that educators may judge access more favorably than Deaf students do (Schick et al., 2006). It is not a failure of instructors' compassion or professionalism. It is what results when Deaf learners are positioned as guests in a hearing-designed environment, and no mechanism requires institutions to solicit or act on Deaf students' evaluations of their own access.

The absence of Deaf instructors, since all four instructor participants were hearing, is an important epistemological limitation. The Deafhood framework (Ladd, 2003) and the UNCRPD principle of "Nothing About Us Without Us" call for analyses of effective DHH pedagogy that do not rest entirely on a hearing perspective. The instructor-

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side analysis here reflects how hearing instructors experience teaching DHH students, not how Deaf instructors would view the same challenges.

Assessment as Linguistic Gatekeeping

Theme 4 shows how these structural conditions culminate in assessment. S3's account describes a measurement-validity failure (Qi & Mitchell, 2012): when an instrument requires DHH students to demonstrate content knowledge through a linguistically inaccessible medium, scores reflect linguistic access as well as content understanding. The experiences of S2, S5, and S6 can be read as different points along the same continuum of systemic inequity, from fragmented comprehension in the classroom, to examination outcomes that depend on a proctor's discretion, to the penalization at the rubric level of what S6 identified as L1-transfer features of a bilingual writer.

The finding on extended time (Sub-theme 4e) has direct policy implications. Extended time adjusts a structurally inaccessible medium for one individual without changing the medium's architecture. FSL-medium assessment, in which students demonstrate knowledge through video-recorded FSL responses, live interpretation by a certified FSL interpreter, or examination by a Deaf-expert assessor, is the Bi-Bi-aligned structural alternative because it assesses content knowledge through the learner's L1, consistent with the principle that an instrument should measure what it purports to measure (Qi & Mitchell, 2012). Interpreter-mediated assessment (Monikowski & Winston, 2003) and bilingual assessment models developed at Gallaudet University offer documented precedents that would need adaptation to the Philippine context.

Recommendations

Instructional Practice (Tertiary Instructors in Inclusive Settings)

1. Design for attentional coherence. Place FSL and visual materials in the same visual field, pause signing while students read or examine a slide or diagram, and avoid spoken-only explanation of visual content. The aim is not to add visuals to a hearing-centered design but to redesign the instructional encounter from the outset (Luckner et al., 2001).

2. Undertake planned professional development that extends instructors' FSL beyond social and classroom-management registers into academic registers. A near-term pathway is partnership with the Philippine Federation of the Deaf (PFD), which conducts regional FSL training.

3. Introduce concepts in FSL before their written Filipino or English counterparts, in line with Bi-Bi sequencing. Where an instructor is not fluent in FSL, co-teach with or refer to an FSL-fluent colleague, or use a certified interpreter for content-heavy segments.

4. Seek DHH students' feedback on communicative access through dedicated access audits rather than general satisfaction surveys, asking whether FSL was present and coherent, whether the visual design was understandable, and whether the assessment medium created barriers. Closing the provider-perspective gap identified in Theme 3 requires recipients' feedback, not just good intentions.

Policy and CHED Governance

1. Develop CHED-level implementing regulations for DHH-inclusive higher education that operationalize the FSL Act's education provisions (Section 4) for tertiary institutions. This is the study's most urgent policy recommendation. Existing CHED memorandum orders on disability-inclusive education should

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be reviewed for FSL-specific provisions, and a dedicated memorandum order or amendment issued where they are lacking.

2. Establish standardized FSL-accessible assessment protocols in place of informal extended time: (a) live FSL interpretation of instructions and questions; (b) pre-recorded FSL video presentation of examination content; and (c) video-recorded FSL response formats assessed by a Deaf-expert evaluator against rubrics that separate linguistic form from content knowledge.

3. Revise content-area assessment rubrics to separate linguistic production from content knowledge. FSL-influenced patterns in written Filipino (topic-comment constructions, spatial reference, aspect-prominent verb structures) are L1-transfer features of a bilingual learner, not grammatical errors, and rubric redesign should involve Deaf and bilingual education experts.

4. Engage the PFD, DHH student organizations, and the UNCRPD National Monitoring Mechanism in CHED policy development, consistent with UNCRPD Article 4(3), through PFD participation in CHED's Technical Panel for Special Education, formal DHH student representation in quality assurance processes, and co-authorship of assessment guidelines by Deaf community experts and DHH learners.

5. Conduct FSL Act compliance audits at HEIs with enrolled DHH students, assessing FSL-proficient staffing, visual environmental design, instructional material accessibility, and assessment equity, with findings publicly reported and linked to CHED accreditation.

Future Research

1. Conduct community-based participatory research led by Deaf investigators, with the PFD as a co-investigator, to access Deaf epistemological perspectives that this hearing-led study cannot reach. Outcome-level studies of DHH academic outcomes across CHED institutions with differing levels of FSL support would provide evidence for policy advocacy.

2. Examine regional sign varieties and their interaction with FSL at Philippine HEIs, including the experience of students who encounter FSL as a second sign language and the implications for the L1 concept in the Bi-Bi framework.

3. Study the full DHH educational continuum from early intervention to tertiary education, including how early family communication decisions influence FSL proficiency, academic readiness, and tertiary outcomes, to support policy linkages between DepEd and CHED.

4. Develop and test FSL-medium assessment tools for tertiary content subjects, generating Filipino evidence-based models that can inform CHED memorandum orders and demonstrate the feasibility of FSL assessment in higher education.

Limitations

Several limitations bound the claims of this study. First, the single-site design draws on a relatively progressive, best-case institution, so the study likely underestimates access barriers at less well-resourced HEIs, which make up the majority. Second, four instructors and six students, although appropriate for qualitative depth, did not reach full saturation for the student group. Third, the primary researcher is hearing and no Deaf researcher held the primary role, which limits the epistemological completeness of the analysis despite the analytic authority given to the Deaf co-researcher and Deaf-expert consultant. Fourth, the three-stage FSL transcript validation process, although methodologically appropriate, cannot eliminate the interpretive transformation inherent in any sign-to-

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written-language transcription. Fifth, S6's atypical trajectory limits the transferability of that account to learners with more disrupted educational histories. Sixth, the study did not examine how family-school interface and pre-tertiary communication decisions shape students' FSL proficiency and, in turn, their tertiary experience. Seventh, the instructor sample comprised only hearing instructors, so Deaf instructors' perspectives are absent. Finally, Philippine-specific citations of uncertain indexing status were replaced with more recent, verifiable publications (Dela Fuente, 2021; Cosmod & Villarente, 2025; Sea-Inspire Journal, 2025); the Philippine literature on tertiary DHH education remains small.

Conclusion

This study explored the visual pedagogical strategies and communication barriers experienced by DHH learners and their hearing instructors in a Philippine inclusive tertiary setting through interviews with six DHH students and four hearing instructors. Reflexive thematic analysis generated four themes: the importance of visually coherent multimodal pedagogy, the epistemic primacy of FSL, a structural divergence between instructor and student framings of communication barriers, and assessment inequity linked to the absence of FSL accountability at the CHED level. The study identifies the DepEd-to-CHED governance gap as the structural condition that leaves DHH students without dependable FSL-medium instruction and assessment in higher education, and it points to possible non-compliance with UNCRPD Article 24 that warrants legislative and regulatory remedy. It offers Philippine tertiary-level evidence grounded in Deaf learners' perspectives and shows that the two-language Bi-Bi model of North America and Scandinavia is inadequate for a Deaf ecology as linguistically complex as the Philippines', which calls for continued theorizing of DHH education in the Global South.

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