Scaffolding Across Languages: Educational Interpreters as Cognitive Mediators in Multilingual Classrooms

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Abstract: *This study reconceptualizes educational interpreters as cognitive mediators who provide instructional scaffolding in multilingual classroom settings. Drawing on Vygotsky's theory of the Zone of Proximal Development (ZPD) and the scaffolding framework developed by Wood, Bruner, and Ross, the paper examines how interpreters go beyond linguistic mediation to support learning in real-time educational interactions. Using qualitative data from a Sino-Korean joint master's program where Chinese-English interpreting facilitated Korean-taught economics lectures, the study identifies interpreter interventions that align with key scaffolding strategies: simplifying content, clarifying abstract concepts, managing classroom interaction, and adapting culturally sensitive information. These practices enable students to access disciplinary knowledge that might otherwise remain out of reach due to language and cognitive barriers. The findings challenge traditional notions of interpreter neutrality by foregrounding their pedagogical agency and suggest that interpreter training in educational contexts should integrate scaffolding awareness to better align interpreting with instructional goals.*

Keywords: Educational interpreting, Scaffolding, Cognitive mediation, Multilingual classroom, Interpreter roles, ZPD.

1. Introduction

In today's globalized higher education landscape, multilingual classrooms are becoming increasingly common, prompting new demands on pedagogy and classroom communication. Educational interpreters, often present in these learning environments, are traditionally regarded as neutral language transmitters. However, such a view severely underestimates their cognitive, communicative, and pedagogical impact. This paper argues that interpreters in educational contexts should be reconceptualized as cognitive mediators who provide instructional scaffolding—a notion originally rooted in developmental psychology and socio-cultural theory.

The concept of scaffolding, first introduced by Wood, Bruner and Ross (1976), refers to the supportive interactions provided by a more knowledgeable other to enable a learner to perform a task they could not accomplish independently. In their landmark study, the authors described scaffolding as a process in which "the adult 'controls' those elements of the task that are initially beyond the learner's capacity" while gradually transferring responsibility (Wood et al. 1976, 90). Scaffolding thus embodies temporary, adaptive support—a core feature of effective instructional dialogue.

This notion finds its theoretical foundation in Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD), which he defines as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, 86). Crucially, for Vygotsky, learning is not the result of isolated internalization, but a social and culturally mediated process wherein tools and signs—especially language—play a pivotal role in reorganizing mental functions (Vygotsky 1978, 55; 1981, 151).

This socio-cultural view was further developed in educational discourse by scholars such as Mercer (1995), who emphasized the role of classroom talk as a tool for interthinking and meaning-making. Bruner (1985) also extended the notion of scaffolding beyond individual tutoring to broader cultural contexts, suggesting that structured formats in interaction help children acquire cognitive and linguistic competence. Likewise, Pea (2004) reminds us that scaffolding is not merely an educational technique, but a socio-technological metaphor that "makes visible the support structures which enable learners to accomplish what they could not do alone" (Pea 2004, 424).

In applied instructional contexts, researchers such as Reiser (2004) have elaborated scaffolding mechanisms into two central categories: *structuring* (reducing task complexity, organizing information) and *problematizing* (highlighting what is cognitively important to grapple with), both of which help maintain productive engagement with complex tasks (Reiser 2004, 280). Similarly, Davis and Linn (2000) argue that scaffolding supports knowledge integration by prompting learners to articulate ideas, reflect on contradictions, and build coherent understanding (Davis & Linn 2000, 819–821). Maloch (2002), working within classroom discourse analysis, shows that scaffolding also facilitates the development of academic language, participation norms, and interpretive skills during literature discussions (Maloch 2002, 97).

Despite the robust theoretical development of scaffolding in teacher-student interactions, interpreters in multilingual classrooms have been largely overlooked in this literature. Yet their work frequently embodies scaffolding principles. For instance, interpreters simplify academic terminology, restructure information flow, isnd provide immediate clarification—all forms of content scaffolding. They also manage turn-taking, align with classroom routines, and mediate power asymmetries—forms of interactional scaffolding. Moreover, interpreters can mitigate learner anxiety and promote engagement through emotional

attunement, a form of emotional scaffolding (cf. Reiser 2004, Pea 2004).

This study explores these scaffolding functions through a case study of a Sino-Korean joint master's program, where English-Chinese interpreting was used to mediate Korean-taught economics lectures. Drawing on qualitative discourse analysis, the paper examines how educational interpreters help students navigate complex conceptual material by dynamically supporting cognitive, linguistic, and emotional dimensions of learning.

By reframing the interpreter's role through the lens of scaffolding theory, this paper contributes to the emerging field of interpreter-mediated education. It also calls for a pedagogical rethinking of interpreter training, encouraging the integration of scaffolding awareness into interpreter education programs to better support learning in multilingual environments.

2. Theoretical Framework: Scaffolding and the Interpreter's Role

2.1 Vygotsky's Sociocultural Theory and the ZPD

The theoretical foundation of scaffolding lies in Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD), which he defines as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, 86). Vygotsky emphasized that learning first occurs on the interpsychological plane, through social interaction, and is then internalized into the intrapsychological plane—a shift from shared activity to individual cognition (Vygotsky 1981, 151). This theory foregrounds the social origin of higher mental functions, suggesting that instruction should target not only what learners already know, but what they are ready to learn with assistance.

Vygotsky's idea of mediated learning also underpins our understanding of how tools, signs, and other individuals serve as bridges between learners and cultural knowledge (Vygotsky 1978, 55). In educational contexts, this mediation is often verbal, dialogic, and responsive to learners' evolving needs—qualities shared by both teachers and interpreters.

2.2 Scaffolding: Origins, Mechanisms, and Core Features

The term scaffolding was introduced by Wood, Bruner, and Ross (1976) in their classic study on adult-child tutoring. They described scaffolding as a process that enables learners to solve problems or accomplish tasks otherwise beyond their unassisted efforts, by "controlling those elements of the task that are initially beyond [the learner's] capacity" (Wood et al. 1976, 90). The ultimate goal of scaffolding is to transfer responsibility to the learner as competence increases, a principle also known as fading.

Reiser (2004) later identified two major mechanisms of scaffolding: structuring and problematizing. Structuring involves breaking down tasks, simplifying procedures, and sequencing complexity; problematizing invites learners to engage with challenging aspects of content to deepen conceptual understanding (Reiser 2004, 280). These mechanisms work in tandem to make tasks manageable while sustaining cognitive effort.

Pea (2004) extends this view by describing scaffolding as a set of distributed support systems, including tools, dialogue, and social norms, which help learners reach beyond their current abilities. Scaffolding is thus both a process and a temporary structure, guided by responsive assessment and attuned to learners' needs over time (Pea 2004, 425).

2.3 Scaffolding in Pedagogical Interaction: Language, Participation, Emotion

The application of scaffolding theory to classroom interaction has shown that support extends beyond procedural guidance. Maloch (2002) found that scaffolding includes metalinguistic prompts, turn-taking guidance, and encouragement of academic discourse practices in literature discussions (Maloch 2002, 96–97). Similarly, Davis and Linn (2000) highlight how scaffolding enhances knowledge integration by helping students connect prior knowledge with new ideas through reflection and cognitive prompts (Davis & Linn 2000, 819–821).

Mercer (1995) and Bruner (1985) emphasize that language is the primary medium of instructional scaffolding. Through dialogic interactions, teachers and students jointly construct knowledge, clarify meaning, and establish shared reference frames (Mercer 1995, 1). Moreover, scaffolding is not limited to cognition: it also provides affective and emotional support, helping learners regulate uncertainty and maintain engagement.

This multi-dimensional perspective of scaffolding—cognitive, interactional, and emotional—broadens its applicability to educational settings where learning is mediated not only by teachers but also by other actors, such as interpreters.

2.4 Educational Interpreters as Scaffolding Agents

Although interpreters are rarely recognized in the scaffolding literature, their practices often mirror those described above. In multilingual educational settings, interpreters simplify complex academic language, restructure discourse for clarity, and tactfully address cultural gaps. These behaviors align with content scaffolding, which assists in understanding disciplinary knowledge.

Moreover, interpreters frequently manage turn-taking, smooth disruptions, and clarify implicit references—forms of interactional scaffolding that help maintain communicative order in complex classroom ecologies. When interpreters notice confusion or disengagement, they may adopt a reassuring tone or selectively emphasize key points, performing emotional scaffolding that supports learners' confidence and reduces anxiety (cf. Reiser 2004, Pea 2004, Maloch 2002).

Given that interpreter interventions are situational, responsive, and temporary, they fulfill key conditions of scaffolding: (1)

oriented toward learner need, (2) contingent on ongoing assessment, and (3) gradually withdrawn as understanding develops. Hence, interpreters in classrooms can be theorized not merely as translators, but as temporary co-educators, operating within the learner's ZPD to facilitate conceptual and emotional access to learning.

3. Methodology

This study adopts a qualitative, discourse-based approach to investigate how educational interpreters function as providers of instructional scaffolding in multilingual classrooms. Through close analysis of interpreter-mediated classroom interactions, we aim to identify the forms, functions, and pedagogical implications of interpreter interventions that align with scaffolding theory.

3.1 Research Context

The data analyzed in this study were drawn from a joint Sino-Korean master's program in economics, co-hosted by a Chinese university and a Korean partner institution. The program was delivered in English by Korean professors and interpreted consecutively into Chinese for the benefit of Chinese postgraduate students with limited English proficiency. English was used as an intermediary working language between instructors and interpreters.

Classes were held online via live video conferencing platforms due to international travel restrictions at the time of data collection. Each class session lasted approximately 100 minutes, covering topics such as macroeconomic policy, fiscal systems, and regional economic cooperation. The interpreter worked from English to Chinese, using notes and slides shared by the Korean instructors. Students listened exclusively to the interpreter's voice and had no direct communication with the original speaker.

3.2 Data Collection

The corpus consists of six recorded and transcribed class sessions, totaling over 10 hours of interpreter-mediated instruction. Transcriptions include the instructor's English input, the interpreter's Chinese output, and limited classroom interaction where students typed questions into the chatbox or responded verbally. Annotations were added to capture non-verbal cues (e.g., pauses, overlaps, hesitations) where relevant to the analysis of scaffolding behavior.

Supplementary data include: 1. Interpreter's preparatory notes and slide decks; 2. Chat transcripts; 3. Researcher field notes and reflexive memos. While no direct student interviews were conducted due to temporal distance, the analysis is grounded in authentic classroom data with naturally occurring interpreter-student-instructor interaction.

3.3 Analytical Framework

The analysis was guided by a theory-driven coding framework informed by Vygotsky's ZPD and contemporary scaffolding theory (Wood et al. 1976; Reiser 2004; Davis & Linn 2000; Maloch 2002). Three types of scaffolding were identified and coded:

- Content Scaffolding: instances where the interpreter simplified technical terms, paraphrased complex explanations, or added clarifications to facilitate conceptual access.

- Interactional Scaffolding: instances where the interpreter structured discourse, managed turn-taking, or regulated transitions between speakers and communicative modes.

- Emotional Scaffolding: moments in which the interpreter provided affective support, reassurance, or emphasized key ideas to maintain learner engagement or reduce anxiety.

All transcripts were read and re-read using thematic coding and micro-discourse analysis. Extracted segments were compared across sessions to identify recurring patterns, scaffolding strategies, and points of tension or negotiation.

3.4 Researcher Positionality and Ethical Considerations

The researcher is also a professional interpreter and educator with insider knowledge of interpreter-mediated classrooms. This dual role offers both insight and risk: while it enhances contextual sensitivity, it also necessitates reflexive distancing to minimize interpretive bias. To ensure trustworthiness, triangulation across data sources and peer debriefing were employed throughout the analysis.

Data were anonymized, and no identifying details about students, instructors, or institutions are disclosed. The study received institutional clearance from the Chinese university's academic ethics board and complies with guidelines for educational research involving human communication data.

4. Analysis: Interpreters' Scaffolding Strategies in Action

Before turning to the detailed analysis, it is important to outline the three interrelated forms of scaffolding that emerged from the data: content scaffolding, interactional scaffolding, and emotional scaffolding. These categories are not mutually exclusive but serve as analytical lenses through which interpreter interventions can be understood as pedagogically meaningful. Content scaffolding involves simplifying or elaborating academic content to support conceptual understanding; interactional scaffolding refers to the management of discourse structure and classroom participation; emotional scaffolding pertains to maintaining student confidence, reducing anxiety, and reinforcing engagement. The following sections present representative examples from the interpreted classroom discourse to demonstrate how these scaffolding strategies were enacted in practice and how they functioned to support learners' access to disciplinary knowledge in a multilingual educational setting.

4.1 Content Scaffolding: Facilitating Conceptual Access

Content scaffolding occurs when interpreters support students' comprehension by restructuring, simplifying, or elaborating on technical information to match learners' cognitive

readiness. This aligns with Reiser's (2004) concept of structuring as a key scaffolding mechanism—reducing task complexity and explicitly highlighting key ideas (Reiser 2004, 280). It also reflects Vygotsky's ZPD, in which learners can achieve more with assistance from a more capable peer (Vygotsky 1978, 86).

Example 1: Explaining Numerical Data through Recall and Clarification

S: 老师我想问一下，刚刚那个0.15搁哪个出来的。
I: 那个0.15指的是刚才我们有几张幻灯片里老师列举出来了，就是2021年12月31日道琼斯工业股指的分母已经写出来了是0.15，是前几张幻灯片里的，你可以去看一看。
S: 好的，知道了。
P: Question?
I: Yes, I have answered her.
P: Oh, ok.

In this moment, the interpreter does not treat the question as requiring intermediation between student and teacher but instead steps in to offer an immediate, content-rich response. The student, having missed or misunderstood the origin of a statistical figure—"0.15"—is evidently operating within the Zone of Proximal Development (ZPD) (Vygotsky 1978, 86), where a temporary scaffold is needed to bridge the gap between instruction and internalization.

Rather than merely repeating the number or forwarding the inquiry to the instructor, the interpreter retrieves contextual information from previous slides, attaches a precise date reference ("2021年12月31日"), identifies the index ("道琼斯工业股指"), and reaffirms the figure's appearance on earlier slides. This is a textbook example of what Davis and Linn (2000, 820) refer to as knowledge integration scaffolding, where learners are guided to connect current uncertainties to previously presented material, thus constructing a coherent conceptual frame.

Additionally, the interpreter invites the student to "go back and take a look," encouraging independent verification. This subtle cue reflects the fading principle of scaffolding (Wood et al. 1976, 90)—offering support that both addresses the immediate cognitive need and prompts autonomous learning behavior. The interpreter is not only resolving confusion but also demonstrating how to locate and verify knowledge—a metacognitive dimension often associated with teacher discourse (Maloch 2002, 97). In essence, this act transforms the interpreter from a linguistic assistant into a temporary instructional agent.

Example 2: Managing Pedagogical Synchrony through Visual Support

P: In this example, we supposed the real value of Chinese yuan is two point zero yuan per US dollar.
I: Sorry, professor, you didn't change the slide.
P: Oh, oh, sorry.

Though seemingly trivial, this intervention is a classic case of non-verbal content scaffolding. By prompting the professor to align the visual slide with oral explanation, the interpreter preserves the integrity of multimodal instruction—an essential condition for meaningful learning, particularly in remote teaching contexts (Reiser 2004, 285; Davis & Linn 2000, 821).

On the surface, this utterance may appear procedural or technical. However, in the pedagogical ecology of remote instruction, such interventions are essential for maintaining the instructional coherence of multimodal learning. When the professor continues to lecture without updating the accompanying PowerPoint slide, the students—especially those reliant on interpreter output—may experience a disjuncture between visual and verbal input. This disrupts what Reiser (2004, 285) terms the structuring function of scaffolding, wherein instructional aids (e.g., slides, diagrams) are aligned to reduce the learner's cognitive burden and support information organization.

By prompting the professor to switch slides, the interpreter acts as a real-time coordinator of semiotic resources. This reflects Pea's (2004, 425) expanded definition of scaffolding as a distributed, system-level support mechanism—not limited to direct explanations but encompassing actions that ensure the learning environment functions smoothly. In this case, the interpreter protects students from the confusion that might arise from temporal misalignment and thereby stabilizes the interpretive environment necessary for conceptual understanding.

Such behavior also resonates with Mercer's (1995, 19) view that educational dialogue includes not only the co-construction of ideas but also the management of shared context. In a multilingual classroom, especially one mediated through digital platforms, the interpreter's attentiveness to context—visual, temporal, and discursive—can be the difference between a comprehensible and a fragmented learning experience.

The examples above illustrate two distinct yet complementary forms of content scaffolding in interpreter-mediated classrooms. In the first instance, the interpreter performs an elaborative recall function, retrieving information from earlier slides and integrating it into the learner's immediate context of confusion. Rather than forwarding the question to the instructor, the interpreter responds with a clarifying explanation that includes temporal references, terminology recall, and material anchoring. This aligns with Davis and Linn's (2000, 820) emphasis on knowledge integration, wherein learners reconcile current gaps in understanding by connecting to earlier conceptual input with the aid of instructional support. The interpreter here does not simply provide an answer; they enable the learner to locate meaning across the temporal flow of the lesson—a cognitive move that constitutes instructional agency.

In the second example, where the interpreter reminds the professor to advance the slide, the support is less conceptual and more procedural. Yet its instructional function is no less critical. By ensuring the alignment between oral explanation and visual materials, the interpreter preserves the multimodal coherence of the lesson—a scaffolding act described by Reiser (2004, 285) as essential in helping learners manage complex information environments. Particularly in online

classrooms, where attention is fragile and cognitive load is high, such subtle forms of synchrony maintenance play a vital role in scaffolding learner comprehension. As Pea (2004, 425) suggests, scaffolding does not always appear as direct instruction—it also resides in coordination moves that enable learning to proceed smoothly within a designed system of tools and actors.

Taken together, these two moments illustrate that interpreters, though not formally positioned as educators, are deeply embedded in the learning ecology of multilingual classrooms. Their ability to respond contingently, draw on contextual knowledge, and manage both linguistic and instructional elements reflects the very essence of scaffolding as defined by Wood, Bruner, and Ross (1976, 90): a temporary and adaptive structure that supports task performance until independence is possible. These forms of content scaffolding not only facilitate access to disciplinary meaning, but also affirm the interpreter's role as an agentive mediator in the co-construction of classroom understanding.

4.2 Interactional Scaffolding: Structuring Participation and Discourse

In interpreter-mediated classrooms, maintaining communicative clarity goes far beyond simple linguistic equivalence. Interpreters frequently take on an interactional coordination role, ensuring that institutional expectations, participation conventions, and logistical procedures are correctly understood and followed across language groups. These behaviors constitute what Reiser (2004, 280) terms structuring scaffolds—those that "simplify the learner's role and make visible the important actions and goals" within a task. In settings where students are not merely learning content, but also learning how to participate, such scaffolding becomes essential for equitable access to the learning environment.

Example 3: Establishing Participation Norms in Online Settings

S: (Background noise)
P: Please turn off your microphone.
I: 请同学关闭麦克风，大家上课前请务必把麦克风关闭，以免影响课堂秩序。

In this instance, the interpreter takes an originally individualized directive from the instructor and reframes it as a general class-wide behavioral reminder. Rather than simply translating "turn off your microphone," the interpreter invokes the collective identity of the group ("大家") and offers a procedural explanation ("以免影响课堂秩序") that justifies the behavior. This is a clear act of procedural scaffolding (Maloch 2002, 96), where the interpreter supports learners not in grasping disciplinary content, but in understanding the unspoken expectations of digital classroom etiquette.

Importantly, this intervention also illustrates anticipatory scaffolding—the interpreter not only reacts to noise, but also preempts further disruptions by establishing a behavioral norm. This echoes Bruner's (1985, 24) idea of formatting interaction, where more knowledgeable participants structure

the flow and rules of discourse in ways that enable novice participation. In this sense, the interpreter acts as a de facto gatekeeper to participation quality, shaping the environmental conditions under which learning takes place.

Example 4: Mediating Role and Identity Clarification

P: So before we start, I want to know, are you MBA students?
I: 老师想知道大家是不是MBA学生。
S: 不是，我们是情报学的。
I: They are not MBA students. They are management of information students.
P: Oh, ok.

This brief exchange demonstrates how interpreters help clarify group identity in institutional communication, an often-overlooked dimension of classroom discourse. The professor's inquiry is simple, but highly consequential: it determines assumptions about the students' academic background, curricular content, and even expected terminology. By smoothly managing this identification process, the interpreter facilitates mutual alignment between teacher and students. This aligns with Reiser's (2004, 285) emphasis on scaffolding as including not just content guidance but contextual framing—ensuring that all participants operate from a shared understanding of who the learners are and what they are expected to know.

Additionally, the interpreter provides terminological precision by translating "情报学" as "management of information," rather than the literal but potentially misleading "information science." This terminological mediation reflects Wood et al.'s (1976, 90) notion of scaffolding as not merely a form of help, but a strategic shaping of the learning path. It enables the instructor to recalibrate expectations and tailor explanations accordingly, thus directly enhancing instructional relevance.

Example 5: Negotiating Logistical Participation and File Access

P: Ok, any questions so far?
I: 大家还有没有问题？
S: 教授能把课件发给我们一下吗？
I: Professor, they were asking if you could send the PowerPoints to our WeChat group.
P: PowerPoints?
I: Yeah, this lecture 1 PowerPoint. Or I can send them. But I have to do it with your permission.
P: PDF file, you have the PDF file, right?
I: Yes, I have the PDF file.
P: I think the PDF file is enough.
I: I will send them.
P: Ok.

This excerpt reveals the interpreter's role as a logistical coordinator, mediating not only linguistic content but also material access and classroom management decisions. When students request access to slides, the interpreter actively clarifies the type of materials being referred to ("lecture 1 PowerPoint"), offers to send them, and simultaneously respects institutional boundaries by requesting the professor's approval.

This multitiered move reflects what Pea (2004, 425) describes as distributed scaffolding—support that extends across tools, actors, and decision points in complex instructional systems. The interpreter ensures that communication remains smooth, respectful, and productive, even as students cross institutional lines to make practical requests. Such coordination not only scaffolds access to learning resources but also models how to navigate authority and agency in academic settings, itself a form of social learning (Vygotsky 1978, 88).

These examples collectively demonstrate that interpreters in multilingual classrooms play an essential role in managing not just the flow of content, but also the structure and rhythm of interaction. In the first instance, the interpreter expands a simple instructor directive into a broader behavioral norm, enabling students to understand and comply with expectations in an online classroom. This act goes beyond translation—it is an instance of procedural scaffolding that secures the communicative ground upon which learning unfolds.

In the second example, the interpreter facilitates a moment of institutional clarification that directly influences how the instructor frames the lesson. By ensuring the accurate identification of student background, the interpreter supports pedagogical alignment between the teacher's assumptions and the learners' actual academic orientation. This kind of framing work is crucial for creating a shared instructional space, especially at the start of a course or program.

The third case further illustrates how interpreters coordinate material access, mediate student-teacher authority dynamics, and uphold institutional protocols—all while preserving the clarity and politeness of the original exchange. This negotiation of digital platforms and permissions exemplifies the distributed nature of scaffolding in modern classrooms, where logistical interaction is just as vital as conceptual clarity.

Taken together, these interactional scaffolding behaviors ensure that multilingual learners are not marginalized by the invisible norms of academic participation. Rather than passively relaying messages, the interpreter actively builds a bridge between languages, between participants, and between institutional layers of the classroom. In doing so, they help students not only access knowledge but also step more fully into the roles of legitimate classroom participants. This work is subtle, often invisible, yet profoundly pedagogical in effect.

4.3 Emotional Scaffolding: Supporting Affective Engagement and Classroom Belonging

In interpreter-mediated classrooms, emotional scaffolding refers to the interpreter's efforts to reduce anxiety, affirm student agency, and maintain an atmosphere of interpersonal trust. While often subtle, these interventions shape learners' affective experience of the classroom and can determine whether they feel confident and safe enough to participate. As Bruner (1985, 24) notes, scaffolding is not only about solving cognitive problems, but also about managing the emotional conditions under which learning occurs. Similarly, Vygotsky (1978, 94) recognized that emotions are deeply interwoven with intellectual activity, particularly in socially mediated learning contexts. In multilingual settings—where linguistic uncertainty, cultural distance, and technological barriers may heighten stress—interpreters play a vital role in creating an emotionally supportive environment.

Example 6: Expressing Uncertainty with Honesty and Humor

P: Then we have the index value on the third day.
I: 这样我们就算出来了第三天的价格加权指数，就是 43.3986。
P: Miranda, can you, emm, is this understandable?
I: No, no, no I can translate it for you, but I don't understand this. I haven't taken any math classes since high school.
P: Oh, this is very simple math.
I: Ok, like why do you have to adjust the two numbers?
P: To get the true value of the index. If you use the old divisor, we obtain the wrong index value.

In this exchange, the interpreter responds with humorous honesty, openly stating her confusion about a complex financial formula. Rather than threatening her credibility, this self-disclosure humanizes the interpreter and subtly communicates to students that struggling with difficult content is normal. In doing so, the interpreter models an emotionally safe way to acknowledge gaps in understanding — a behavior that Vygotsky (1978, 94) would regard as an essential part of socially mediated self-regulation.

This moment also invites the instructor into a more empathetic stance. The professor's tone softens, and he offers a more detailed explanation. Through this interaction, the interpreter scaffolds not only her own understanding but also reduces the emotional distance between the teacher and students—many of whom may share similar confusion but hesitate to voice it. This is a form of affective modeling (Bruner 1985, 26), where the interpreter helps normalize uncertainty in high-stakes academic spaces.

Example 7: Advocating for Student Constraints with Assertiveness and Empathy

S: 那是因为我们这个就是做核酸的时间，每一个地方不太确定，还有我们班有一些同学的话，就是负责这个一个服务保障，也就相当于他整天都要在那边。
I: Oh ok. Professor, the time that they should do the test is not the same. It is different time. That's a problem, and some students may even take the volunteer work at their community because most of the students are in Tianjin.
P: So that's why I'm thinking to give the exam to the evening hours…
I: No, no, no. Some of them are even not available in the evening. Like the voluntary work at the community is like the full day or they may take over the work at six pm.
P: They should try avoid to take the work during the exam hours.
I: No, no, no, it is not that easy to refuse the work.
P: It's voluntary work.
I: It's voluntary nominally, but it's like compulsory. Because they are in shortage of the staff.

This emotionally charged exchange reveals the interpreter taking on a protective and empathetic stance on behalf of students. Rather than merely relaying each side's words, she

advocates, explains, and contextualizes students' constraints — emphasizing the inflexibility and implicit coercion behind the "voluntary" work assignment. By repeating "No, no, no" and using emotionally descriptive language ("not that easy to refuse," "they are in shortage of staff"), the interpreter amplifies the students' emotional position, making it legible to the instructor.

Such assertive intervention illustrates what Pea (2004, 426) describes as relational scaffolding—the effort to maintain fairness, emotional safety, and empathetic communication in socially asymmetric contexts. It also signals to students that their concerns are heard and represented with care, which can bolster trust, reduce helplessness, and reinforce a sense of classroom belonging. In a context where students might feel powerless due to institutional or logistical constraints, the interpreter becomes a voice of affective equilibrium, balancing institutional rules with students' lived realities.

Emotional scaffolding in interpreter-mediated education is not always explicit—but it is deeply consequential. Whether through humor, advocacy, reassurance, or tone modulation, interpreters help manage the emotional climate of the classroom. In doing so, they create the conditions for risk-taking, persistence, and trust—all prerequisites for genuine learning.

In the first example, the interpreter models vulnerability and invites the instructor into a more responsive stance, lowering the affective stakes of intellectual confusion. In the second, she acts as an emotional advocate, defending student limitations while diplomatically resisting institutional rigidity. Both moments highlight the humanizing role of interpreters, who are often the only bridge between instructional authority and student emotion.

These acts of emotional scaffolding—though peripheral to content—are central to learning. They help students feel permitted to struggle, empowered to ask, and justified in their needs. In classrooms where power, language, and hierarchy intersect, the interpreter's emotional intelligence becomes a pedagogical resource in its own right.

5. Discussion

The findings of this study demonstrate that interpreters in multilingual classrooms function as more than linguistic intermediaries—they act as instructional co-participants who provide diverse forms of scaffolding essential to the learning process. Through careful analysis of interpreter-mediated interactions, this research identifies three scaffolding dimensions—content, interactional, and emotional—each of which contributes uniquely to learner access, participation, and confidence.

While the concept of scaffolding has been extensively explored in educational psychology and teacher discourse (Wood et al. 1976; Mercer 1995; Reiser 2004), its application to the work of interpreters remains under-theorized. Interpreters are still often conceptualized as neutral transmitters of linguistic content rather than as responsive agents embedded in pedagogical processes. This study challenges that view by demonstrating that interpreters,

especially in sustained educational settings, make adaptive decisions that closely mirror the scaffolding moves of effective educators.

5.1 Interpreters as Content Mediators

The data reveal that interpreters routinely engage in content scaffolding, such as simplifying terminology, clarifying complex concepts, or recalling previously presented material to support learner understanding. These practices reflect what Davis and Linn (2000) call knowledge integration scaffolds — interventions that help learners connect new information to prior knowledge, especially when dealing with cumulative disciplinary content. Unlike isolated acts of translation, these scaffolding moves are contingent, context-sensitive, and pedagogically motivated.

What is significant here is not merely that interpreters make content accessible, but that they do so by invoking their understanding of pedagogical intent and learner cognitive readiness. This marks a shift from interpreting as fidelity-driven work to interpreting as cognitive mediation, aligning more closely with Vygotsky's model of assistance within the learner's Zone of Proximal Development (ZPD) (Vygotsky 1978, 86).

5.2 Managing the Participation Ecology

Interactional scaffolding provided by interpreters plays a crucial role in maintaining the procedural and relational flow of classroom discourse. Whether helping to enforce participation norms, mediate institutional expectations, or regulate turn-taking, interpreters act as discourse managers. These contributions are especially salient in remote or hybrid environments where visual cues and real-time feedback are compromised.

The role of the interpreter here parallels what Maloch (2002) describes as the teacher's responsibility to guide learners into unfamiliar discourse formats. In multilingual classrooms, however, this responsibility is often delegated to or assumed by the interpreter—especially when the instructor lacks the linguistic resources to address such gaps directly. This raises important questions about how interactional authority is distributed in multilingual education and how interpreters may need to be recognized as legitimate co-facilitators of academic discourse.

5.3 Affect as a Pedagogical Resource

Perhaps most overlooked in existing literature is the interpreter's role in providing emotional scaffolding. By modeling vulnerability, affirming student difficulties, and tactfully voicing learner concerns, interpreters contribute to an affective learning environment that supports risk-taking and persistence. These behaviors align with Bruner's (1985, 24) notion of "formats" in which the socio-emotional tone of interaction becomes as important as the cognitive content.

In classrooms marked by cultural distance, linguistic insecurity, and institutional hierarchy, interpreters often become the only humanizing bridge between students and authority. Their emotional intelligence is not incidental; it is a

critical pedagogical asset—a kind of soft power that can enable or inhibit student engagement.

5.4 Reframing Interpreter Training and Educational Design

These findings suggest the need to reconceptualize interpreter education, particularly in academic contexts. Rather than focusing exclusively on fidelity and linguistic accuracy, interpreter training programs should incorporate pedagogical awareness, including the principles of scaffolding, discourse management, and affective support. Interpreters who understand educational goals are more capable of adapting their interventions to support learning, rather than simply replicating instructor discourse.

Moreover, educational designers and institutions should consider how interpreter-mediated instruction differs fundamentally from other forms of multilingual teaching. Curriculum planning, classroom logistics, and assessment design must all account for the fact that meaning is co-constructed not only between teacher and learner, but between teacher, interpreter, and learner.

6. Conclusion

This study set out to explore how educational interpreters function as cognitive, interactional, and emotional scaffolding agents in multilingual classrooms. Drawing on Vygotsky's sociocultural theory and contemporary instructional scaffolding frameworks (Wood et al. 1976; Reiser 2004; Davis & Linn 2000), the analysis revealed that interpreters — far from being neutral translators—actively mediate not only between languages, but also between pedagogical intent and learner readiness.

By examining interpreter-mediated discourse in a Sino-Korean joint master's program, this study identified three interrelated types of scaffolding provided by interpreters:

1) Content scaffolding, through conceptual simplification, paraphrasing, and contextual linking, enabling students to access complex disciplinary knowledge;

2) Interactional scaffolding, by organizing classroom communication, regulating turn-taking, and managing procedural clarity;

3) Emotional scaffolding, through empathetic tone, advocacy, and affective responsiveness, helping to reduce anxiety and build classroom belonging.

These findings extend the application of scaffolding theory to interpreter-mediated education and challenge existing models that limit the interpreter's role to linguistic fidelity. Instead, interpreters are shown to operate as adaptive, agentive participants in the learning process, whose interventions bear both cognitive and pedagogical weight.

From a theoretical perspective, this study contributes to an emerging understanding of interpreters as social agents within educational ecologies. It invites scholars in both interpreting studies and educational psychology to consider how interpreters, especially in sustained instructional contexts, become co-constructors of learning environments. Their work implicates not only what is learned but how learning happens — linguistically, socially, and emotionally.

From a practical standpoint, the research suggests several implications:

Interpreter training programs should integrate pedagogical theory, including scaffolding and learner-centered discourse strategies, to prepare interpreters for educational roles.

Educators working with interpreters should be encouraged to engage in co-planning and reflection, acknowledging interpreters as partners in instruction.

Institutional policies should recognize the pedagogical function of interpreting and consider it in curriculum design, assessment timing, and learner support systems.

Of course, this study has limitations. The data set is drawn from a single case in a specific international program, and does not include direct interviews with students or interpreters for triangulation. While the discourse analysis is rich, future research could benefit from ethnographic methods or mixed-methods studies that incorporate participant perspectives and learning outcomes.

In conclusion, this research offers a reframing of educational interpreting as pedagogically consequential work. It calls for a broader recognition of interpreters not as peripheral actors, but as invisible educators—those who scaffold not only meaning, but possibility, in the multilingual classroom.

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