

BEYOND WORDS: DYNAMIC VISUAL SCAFFOLDING AS A TOOL FOR MEANING NEGOTIATION IN CLIL CLASSROOMS

MELAMPAUI KATA-KATA: PERAN SCAFFOLDING VISUAL DINAMIS DALAM NEGOSIASI MAKNA PADA KELAS CLIL

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Abstract

The current study examines the role of dynamic visual scaffolding (video, animation) in facilitating meaning negotiation in Content and Language Integrated Learning classrooms with a particular focus on fifth grade students in an International Class Program. While CLIL pedagogy emphasizes interaction as a key mechanism for integrating content and language learning, limited attention has been given to how visual resources support the process of meaning making beyond verbal communication. This study aims to investigate how dynamic visual scaffolding is used in teacher-student interaction and how it contributes to the negotiation of meaning among learners. A qualitative design is employed, using classroom observation and discourse analysis to capture naturally occurring interaction in CLIL settings. Data are analyzed through a micro-interactional approach focusing on turn taking, repair sequences, and scaffolding strategies. The findings are expected to show that visual scaffolding, including gestures, images, and visual representations, plays a significant role in enhancing comprehension, encouraging participation, and supporting learners in resolving communication breakdowns. It is also anticipated that visual scaffolding provides alternative pathways for learners with limited language proficiency to actively engage in classroom interaction. This study contributes to a deeper understanding of multimodal learning in CLIL contexts and highlights the importance of integrating visual resources to promote meaningful interaction and effective learning.

Keywords - Classroom interaction, CLIL, meaning negotiation, visual scaffolding, young learners

Introduction

Content and Language Integrated Learning (CLIL) has emerged as a prominent pedagogical approach that seeks to integrate content mastery with language development through meaningful classroom interaction. Rooted in socio-constructivist and interactionist theories of second language acquisition, CLIL conceptualizes language not merely as an object of instruction but as a medium through which knowledge is constructed and negotiated (Coyle et al., 2010; Dalton-Puffer, 2017). Within this framework, classroom interaction becomes a central mechanism that enables learners to co-construct

understanding, develop communicative competence, and engage with subject-specific discourse.

A key process underlying interaction in CLIL contexts is the negotiation of meaning. Drawing on interactionist perspectives, negotiation of meaning refers to the conversational adjustments that occur when interlocutors encounter communication difficulties and attempt to resolve them through strategies such as clarification requests, confirmation checks, repetition, and reformulation (Long, 2015). This process is particularly crucial in CLIL classrooms, where learners must simultaneously process

content and language, often in a second or foreign language. Effective negotiation of meaning not only facilitates comprehension but also promotes language acquisition by making input more comprehensible and encouraging modified output.

However, despite the theoretical emphasis on interaction and negotiation of meaning, empirical evidence suggests that CLIL classroom practices do not always fully realize these principles. In many cases, classroom discourse remains predominantly teacher-centered, with limited opportunities for learners to engage in extended interaction (Nikula et al., 2016). This issue is especially pronounced in primary education settings, where learners' limited linguistic resources can constrain their ability to participate actively in verbal exchanges. Consequently, interaction may be reduced to short, display-oriented responses rather than meaningful, dialogic engagement, thereby limiting the potential of CLIL to foster both content understanding and communicative competence.

In response to these challenges, recent scholarship has increasingly emphasized the role of multimodality in supporting learning and interaction. Multimodality, understood as the use of multiple semiotic resources such as visual, verbal, gestural, and spatial modes, offers a broader perspective on meaning-making beyond language alone (Kress, 2018). From this viewpoint, communication in the classroom is inherently multimodal, and learning occurs through the dynamic interplay of different representational systems. In CLIL contexts, multimodal resources can be particularly valuable in bridging the gap between content and language by providing learners with alternative means of accessing and expressing meaning.

Among these resources, visual scaffolding has been identified as a powerful pedagogical tool. Visual scaffolding includes the use of images, diagrams, charts, gestures, and other visual representations to support comprehension and communication. According to Mayer's (2020) cognitive theory of multimedia learning, the integration of visual and verbal information can enhance learning by reducing cognitive load and facilitating deeper processing. In CLIL classrooms, visual scaffolding can help learners grasp complex or abstract concepts, thereby enabling them to participate more effectively in interactional processes.

More specifically, dynamic visual scaffolding such as videos, animations, and interactive visualizations offers distinct affordances that extend beyond those of static visuals. Dynamic visuals can represent processes, changes, and temporal sequences, making them particularly suitable for explaining complex phenomena. They also create shared reference points that can stimulate discussion, prompt questions, and support negotiation of meaning during classroom interaction (Plass & Kaplan, 2016). For example, a video demonstration may trigger learners' curiosity, leading to clarification requests or interpretive discussions that would not emerge in a purely verbal context.

Despite these promising affordances, the role of dynamic visual scaffolding in facilitating interaction and meaning negotiation remains underexplored. Much of the existing research on CLIL and multimodality has focused on general classroom practices or learning outcomes, rather than on the micro-level dynamics of interaction (Dalton-Puffer, 2017; Nikula et al., 2016). In particular, there is a lack of detailed analysis of how visual resources are integrated into turn-taking sequences, how they contribute to repair

mechanisms, and how they function as scaffolding tools in real-time communication.

This gap is particularly significant in primary CLIL classrooms, where learners rely heavily on contextual and visual support due to their developing language proficiency. Understanding how dynamic visual scaffolding operates within interaction can provide valuable insights into how teachers can create more inclusive and effective learning environments. It can also contribute to a more nuanced understanding of negotiation of meaning as a multimodal process, rather than a purely linguistic one.

Therefore, this study seeks to investigate the role of dynamic visual scaffolding in facilitating meaning negotiation in CLIL classrooms, with a specific focus on fifth-grade students in an International Class Program. By adopting a micro-interactional perspective, this study aims to capture the complexity of classroom interaction and to reveal how visual and verbal resources work together to support learning. In line with the issues outlined above, this study is guided by the following research questions:

1. How is dynamic visual scaffolding enacted in teacher–student interaction within CLIL classrooms?
2. In what ways does dynamic visual scaffolding facilitate the negotiation of meaning among fifth-grade learners?

The purpose of this study is to explore and analyze the role of dynamic visual scaffolding in supporting meaning negotiation in CLIL classroom interaction. Specifically, this study aims to identify and categorize the forms of dynamic visual scaffolding used by

teachers at International Class Program in primary level, identify how these visual resources are embedded within interactional sequences, and analyze how dynamic visual scaffolding supports learners' comprehension, participation, and resolution of communication breakdowns.

This study contributes to the theoretical advancement of CLIL and second language acquisition by integrating interactionist and multimodal perspectives, extending the concept of negotiation of meaning as a multimodal phenomenon and thus offering a more comprehensive understanding of how meaning is constructed in classroom interaction. For practitioners, it provides evidence-based insights into the effective use of dynamic visual resources to enhance classroom interaction, along with practical guidance for teachers aiming to create more engaging and supportive learning environments, particularly for learners with limited language proficiency. From a pedagogical perspective, the study emphasizes the importance of incorporating dynamic visual scaffolding into instructional design, highlighting the need for teaching practices that leverage multimodal resources to foster active participation, deeper understanding, and meaningful communication in CLIL classrooms, especially at the primary level.

Methodology

This study adopts a qualitative research design with a micro-interactional discourse analysis approach. Qualitative methodology is considered appropriate as the study aims to explore naturally occurring classroom interaction and to gain an in-depth understanding of how dynamic visual scaffolding facilitates negotiation of meaning in CLIL contexts. Specifically, a micro-analysis of classroom discourse is employed to capture the fine-grained details of

interaction, including turn-taking patterns, repair sequences, and scaffolding strategies (Seedhouse, 2010). This approach enables the researcher to examine how meaning is co-constructed through both verbal and visual modes in real-time communication.

The participants of this study are fifth-grade students enrolled in an International Class Program at a primary school, along with their CLIL teacher. The class is selected purposively due to its implementation of CLIL pedagogy, where English is used as an instructional language for content subjects. The teacher is also included as a key participant, as they play a central role in providing scaffolding and facilitating classroom discourse.

Data are collected through non-participant classroom observations. Several teaching sessions are observed and recorded to capture authentic interaction in the CLIL classroom. Audio-visual recordings are used as the primary data source, allowing for detailed analysis of both verbal exchanges and visual elements such as gestures, images, videos, and animations used during instruction. Field notes are also taken to document contextual information, including classroom activities, instructional strategies, and student responses.

The main instrument of this study is the researcher, who functions as the primary tool for data collection and analysis. Supporting instruments include observation checklists and field note guidelines designed to capture instances of dynamic visual scaffolding and interactional features. In addition, audio-visual recording devices are used to ensure accurate documentation of classroom interaction, enabling repeated viewing for detailed analysis.

The data were analyzed using a micro-interactional discourse analysis framework (Seedhouse, 2010). The recorded classroom interactions are transcribed verbatim, including both verbal and relevant non-verbal elements such as gestures and visual references. The analysis focuses on identifying patterns of turn-taking, repair sequences, and scaffolding strategies that occur during interaction.

Furthermore, instances of dynamic visual scaffolding are coded and categorized based on their types (e.g., video, animation, gesture, visual representation) and their functions in supporting meaning negotiation. The analysis also examines how these visual resources contribute to learners' comprehension, participation, and resolution of communication breakdowns. To enhance the validity of the findings, data triangulation is employed by comparing observation data with field notes.

The research is conducted in several stages. First, preliminary observations are carried out to gain familiarity with the classroom context and to identify relevant instructional practices. Second, data collection is conducted through systematic classroom observations and recordings. Third, the collected data are transcribed and organized for analysis. Fourth, the data are analyzed using the micro-interactional framework to identify key patterns and themes. Finally, the findings are interpreted and reported in relation to the research questions and existing theoretical frameworks.

Finding and Discussion

The study is expected to reveal that video-based scaffolding may function as a central mediational tool within the interactional structure of the CLIL classroom. It is anticipated that the teacher will use short instructional videos at the beginning of lessons to introduce

new concepts and activate learners' prior knowledge. These videos are likely to provide concrete and contextualized representations of abstract content, allowing students to observe real-life processes that might otherwise remain distant or difficult to conceptualize through language alone. In this way, video-based input is expected to create a shared frame of reference that supports subsequent interaction, enabling both teacher and students to operate within a common interpretive space. This anticipated finding aligns with multimodal theory, which posits that meaning is constructed through the integration of multiple semiotic resources rather than language alone (Kress, 2018). In the context of CLIL, where learners are required to process both content and language simultaneously, such multimodal grounding is expected to become particularly essential.

A closer examination of classroom interaction is expected to indicate that video-based scaffolding may significantly shape turn-taking patterns. After viewing the video, the teacher is likely to initiate interaction through open-ended and guiding questions, encouraging students to describe, interpret, and evaluate what they have observed. This interactional move may shift the classroom dynamic from teacher-centered explanation toward more dialogic engagement. Students' responses are expected to be multimodal, combining limited verbal production with gestures, pointing, and references to visual elements displayed on the screen. This may suggest that video-based scaffolding can reduce linguistic barriers and enable learners with limited proficiency to participate more meaningfully. Rather than being constrained by limited vocabulary or grammatical accuracy, students may draw on visual resources as semiotic support. Such anticipated findings are consistent with previous studies indicating that

visual support enhances learners' engagement and participation in CLIL classrooms by providing alternative pathways for meaning-making (Dalton-Puffer, 2017; Llinares & Morton, 2017).

Furthermore, video-based scaffolding is expected to contribute to the extension of interactional sequences beyond simple question-answer exchanges. The teacher may frequently use follow-up questions and replay video segments to encourage deeper discussion and reflection. By pausing or replaying key moments, the teacher is likely to direct learners' attention to specific details, prompting them to refine their understanding and articulate more precise responses. This practice is expected not only to sustain interaction but also to increase its cognitive depth, as students may be encouraged to move beyond surface-level observation toward interpretation and explanation. This interactional pattern may reflect the process of negotiation of meaning, where learners are guided to clarify, confirm, and elaborate their ideas (Long, 2015). Previous studies have similarly suggested that scaffolding strategies in CLIL classrooms can foster extended discourse and promote higher levels of cognitive engagement (Mahan, 2020).

In addition, video-based scaffolding is anticipated to play a crucial role in repair sequences and the resolution of communication breakdowns. When misunderstandings occur, the teacher may refer back to the video rather than relying solely on verbal explanation. By highlighting or replaying visual elements, the teacher is expected to provide implicit feedback that encourages learners to self-correct and reconsider their responses. This approach may shift the responsibility of meaning-making from the teacher to the learners, fostering greater autonomy and interactional awareness. Students may also initiate repair by referencing the

video, indicating active involvement in the negotiation process. This possibility supports the view that multimodal resources can facilitate both teacher-initiated and learner-initiated repair, thereby enhancing interactional competence (Walsh, 2013).

From a theoretical perspective, these expected findings may also be explained through the Cognitive Theory of Multimedia Learning, which argues that learners process information more effectively when verbal and visual inputs are combined (Mayer, 2020). Videos, as dynamic visual resources, are likely to allow learners to simultaneously access auditory and visual information, reducing cognitive load and supporting deeper understanding. In CLIL contexts, where learners must process both content and language, such multimodal input may be particularly beneficial because it distributes cognitive demands across different processing channels. Previous studies have confirmed that multimedia resources, including video, can enhance comprehension and facilitate language development by making input more accessible and meaningful (Plass & Kaplan, 2016).

Moreover, recent research in CLIL and multimodal pedagogy emphasizes that visual scaffolding is not merely supportive but constitutive of interaction itself. For instance, Llinares and Morton (2017) argue that classroom discourse in CLIL is inherently multimodal, with visual resources playing an integral role in meaning-making. Similarly, Mahan (2020) highlights that effective scaffolding involves the strategic use of multiple modes to support learners' engagement and understanding. The anticipated findings of this study are expected to extend this line of research by demonstrating how video-based scaffolding may operate at the micro-interactional level, shaping turn-taking,

repair sequences, and negotiation processes in real time.

In summary, video-based scaffolding in this study is expected to be enacted as an interactive and multimodal practice that supports both comprehension and participation. It may function as a shared reference point, a trigger for extended interaction, and a tool for resolving communication breakdowns. These anticipated findings are expected to reinforce the importance of integrating dynamic visual resources into CLIL pedagogy, particularly in primary education contexts where learners benefit from additional support in meaning-making.

Building on the role of video-based scaffolding, the expected findings further suggest that other forms of dynamic visual support may also contribute to interaction in distinct yet complementary ways.

The study is expected to indicate that animation-supported explanation may function as a crucial pedagogical strategy for mediating abstract and complex content in the CLIL classroom. Unlike video-based scaffolding, which primarily contextualizes real-life phenomena, animations may be used to explicitly visualize processes that unfold over time. The teacher is likely to employ animated slides to demonstrate step-by-step sequences, enabling learners to observe transformations and causal relationships that may otherwise be difficult to conceptualize through verbal explanation alone. This expectation supports the view that dynamic visualizations are particularly effective in representing temporal changes and facilitating conceptual understanding (Lowe et al., 2021).

From an interactional perspective, animation-supported explanation is

expected to be closely synchronized with teacher talk. The teacher may frequently pause, replay, or slow down animations while providing simplified explanations and repetition. This coordination is likely to allow learners to align verbal input with visual representation, promoting dual-channel processing and reinforcing comprehension. Students' responses may rely on the animation as a reference point, using deictic expressions such as "this one" or "it goes here" while pointing to the screen. This may indicate that animations function as shared semiotic resources that support participation even when learners' linguistic resources are limited.

Moreover, animation-supported explanation is expected to provide structured scaffolding that guides learners' understanding progressively. The teacher may break down complex processes into smaller segments and ask step-by-step questions aligned with the animation sequence. This segmented approach is anticipated to reduce cognitive overload and enable learners to process information incrementally. According to multimedia learning theory, segmenting and signaling are essential principles that help learners focus on relevant information and construct coherent mental representations (Mayer, 2020). Previous studies have also suggested that guided interaction during animation-based instruction can significantly improve comprehension compared to unguided viewing (Lowe et al., 2021).

In addition to externally mediated visual resources such as videos and animations, the expected findings are also likely to highlight the importance of embodied visual scaffolding in shaping real-time classroom interaction.

The study is expected to demonstrate that embodied visual scaffolding particularly

gestures, pointing, gaze, and board drawing may play a central role in mediating real-time interaction in the CLIL classroom. Unlike video- or animation-based scaffolding, which relies on external visual media, embodied scaffolding is anticipated to emerge directly from the teacher's physical presence and interactional behavior. The teacher may consistently use hand gestures to illustrate movement, direction, and relationships between concepts, while also employing facial expressions and body orientation to emphasize meaning. These embodied actions are expected to align systematically with instructional goals, serving as immediate and flexible tools to support comprehension.

A closer micro-analysis may show that gestures and pointing are particularly effective in establishing joint attention and guiding learners' understanding. Students' gaze and body orientation may shift in response to the teacher's gestures, indicating that embodied cues play a crucial role in directing attention and structuring interaction. Furthermore, gestures may provide visual analogies for abstract concepts, enabling learners to grasp meaning through physical representation. This expectation aligns with research indicating that gestures play a significant role in multimodal meaning-making (Mejía-Laguna, 2023).

In addition, embodied scaffolding is expected to facilitate negotiation of meaning by functioning as implicit feedback during repair sequences. The teacher may use gestures to prompt self-correction, allowing learners to reconsider their responses without explicit correction. Students may also begin to use gestures themselves, suggesting that embodied scaffolding can be internalized as a communicative resource. This expectation reflects sociocultural perspectives on learning, where

interactional tools are gradually appropriated by learners.

The expected findings further suggest that visual scaffolding may play a fundamental role in enhancing learners' comprehension. By transforming abstract content into concrete representations, visual resources are likely to enable learners to connect language with meaning. When students encounter difficulty, the teacher may strategically redirect attention to visual input, allowing learners to reprocess information through alternative modalities. This adaptive strategy is expected to highlight the role of visual scaffolding as a responsive and dynamic teaching practice.

In addition, visual scaffolding is anticipated to significantly enhance student participation by lowering linguistic barriers and creating a more inclusive interactional environment. Students may be able to contribute using partial language, gestures, and references to visual elements, demonstrating that participation is not limited to full linguistic competence. This may create a multimodal participation space where all learners can engage meaningfully regardless of proficiency level.

Finally, the expected findings suggest that visual scaffolding may play a crucial role in repair sequences and the negotiation of meaning. By enabling both teacher-guided and learner-initiated repair, visual scaffolding is likely to transform communication breakdowns into opportunities for learning. Learners may actively engage in interpreting, revising, and confirming meaning through interaction, reflecting the core principles of interactionist theory.

From a broader perspective, dynamic visual scaffolding is expected to be systematically embedded across the key phases of classroom interaction,

particularly within the Initiation–Response–Feedback (IRF) sequence. In the initiation stage, visual input may serve as a trigger for interaction. In the response stage, it is likely to support learners' contributions. In the feedback stage, it may enable clarification and elaboration. Beyond this structure, visual scaffolding is also expected to extend interaction, promoting more dialogic and sustained discourse.

In conclusion, the expected findings suggest that dynamic visual scaffolding is not merely an instructional aid but an integral component of classroom interaction in CLIL contexts. By shaping turn-taking, supporting comprehension, facilitating participation, and enabling negotiation of meaning, visual scaffolding is anticipated to create a rich and multimodal learning environment. These projected findings reinforce the importance of integrating visual resources strategically into CLIL pedagogy to support both language development and content learning.

Conclusions

This study aims to explore the role of dynamic visual scaffolding in facilitating negotiation of meaning within CLIL classroom interaction, particularly among fifth-grade learners in an International Class Program. Based on the projected findings, the study is expected to demonstrate that dynamic visual scaffolding such as videos, animations, gestures, and other embodied visual resources may play a significant role in supporting both content understanding and language development in CLIL contexts. The anticipated findings suggest that classroom interaction in CLIL is inherently multimodal, where meaning is constructed not only through verbal communication but also through the integration of visual and embodied semiotic resources.

The study is expected to reveal that dynamic visual scaffolding can function as an interactionally embedded pedagogical strategy that supports learners' comprehension, participation, and engagement during classroom interaction. Videos and animations may provide concrete representations of abstract concepts, enabling learners to access meaning more effectively and participate more confidently in interaction despite limited language proficiency. In addition, embodied visual scaffolding such as gestures, pointing, and gaze is anticipated to support real-time communication by directing attention, clarifying meaning, and facilitating repair sequences during communication breakdowns.

Furthermore, the projected findings indicate that dynamic visual scaffolding may significantly facilitate negotiation of meaning by creating shared reference points that encourage learners to clarify, confirm, and elaborate their understanding. Visual resources are also expected to support both teacher-guided and learner-initiated repair, transforming communication difficulties into opportunities for learning and interaction. Through these processes, visual scaffolding may contribute to more dialogic, inclusive, and sustained classroom discourse.

From a theoretical perspective, this study is expected to contribute to the development of CLIL and second language acquisition research by extending the concept of negotiation of meaning as a multimodal phenomenon. By integrating interactionist and multimodal perspectives, the study may provide a broader understanding of how meaning is collaboratively constructed in classroom interaction. Pedagogically, the study highlights the importance of incorporating dynamic visual resources into CLIL instruction, particularly at the

primary level, to support learners with diverse linguistic abilities and promote meaningful engagement.

However, as this study remains exploratory and context-specific, future research is recommended to investigate dynamic visual scaffolding across different educational settings, age groups, and CLIL contexts. Further empirical studies may also examine the long-term impact of multimodal scaffolding on learners' language development, interactional competence, and academic achievement.

In conclusion, the study is expected to affirm that dynamic visual scaffolding is not merely a supplementary teaching aid but a fundamental component of effective CLIL pedagogy. By supporting multimodal meaning-making, facilitating negotiation of meaning, and enhancing learner participation, dynamic visual scaffolding has the potential to create more interactive, inclusive, and cognitively supportive learning environments in CLIL classrooms.

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