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Enhancing language learning through gesture-based corrective feedback: A comparative study in a multi-country context

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ABSTRACT

This study investigates integrating innovative gestures in language instruction to enhance corrective feedback and improve learning outcomes across Indonesia, Thailand, and Ukraine. Adopting a mixed-methods approach, the research involved 35 observations and 35 interviews with 15 participants in Indonesia, 10 in Thailand, and 10 in Ukraine. A robust methodology was applied during data analysis, utilizing an analytical framework to examine both textual and visual data, exploring patterns and themes concerning corrective interventions and innovative gestures. Quantitative analyses revealed significant figures: In Indonesia, learners demonstrated an uptake frequency of approximately 83%, adjusting their language usage within an average of 17 seconds after exposure to corrective gestures. In Ukraine, learners exhibited a higher uptake frequency of around 87%, adjusting their language within an average of 13 seconds. In Thailand, learners showed an uptake frequency of 85%, with adjustments occurring within an average of 15 seconds. Incorporation speed varied, requiring 1-4 sessions based on context. Qualitative insights highlighted a transformative shift in language instruction methodologies across all three contexts. Educators reported increased student engagement and comprehension, with gestures enhancing the visibility and impact of corrective feedback. These findings underscore the transformative potential of integrating innovative gestures in language instruction, showcasing enhanced engagement, quicker uptake, and improved comprehension. The study highlights the need for further research to explore long-term impacts and potential challenges in diverse educational settings.

Keywords: Corrective feedback; corrective intervention; innovative gestures; language instruction

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INTRODUCTION

The use of gestures as an innovative tool in language instruction has garnered increasing attention for its potential to enhance corrective feedback and improve learning outcomes (Faraco & Kida, 2008; Lee et al., 2019; Taylor, 2014). As a key paralinguistic feature, Gestures offer a dynamic way to make corrective interventions more visible and engaging, addressing one of the critical challenges in second language acquisition: noticing (Girsang et

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al., 2021; Lee, 2000; Longe, 1999). Noticing, defined as the conscious recognition of linguistic errors, is essential for learners to internalize and correct mistakes effectively (Johar et al., 2023; MacKey, 2006; Mason, 2021; Rooney & Boud, 2019). While traditional corrective feedback methods often rely on verbal or written cues, the integration of gestures provides a multimodal approach that complements verbal instruction, fostering deeper comprehension and faster error recognition (Evans et al., 2011; Zhu et al., 2022). This study focuses on exploring how innovative gestures can transform corrective feedback practices, bridging gaps in learner engagement and cognitive integration and ultimately enhancing the effectiveness of language instruction in diverse educational settings.

In second language acquisition, "noticing" refers to the learner's conscious recognition of specific linguistic elements or faults during input, which is essential for effective learning. According to Schmidt's Noticing Hypothesis (1990), noticing is necessary for language development because learners must first recognize linguistic forms before processing and internalizing them. In the context of feedback, noticing is essential because it guarantees that learners are not only exposed to remedial interventions but also actively acknowledge and engage with them (Izumi, 2002; Navidinia et al., 2019; Qi & Lapkin, 2001). Corrective input may go unnoticed, diminishing its usefulness. The use of gestures in language instruction not only aims to increase the visibility and salience of feedback but also creates a direct link between students' errors and corrective actions. By visually highlighting specific errors through gestures, teachers provide a concrete and immediate form of feedback that aids learners in identifying and addressing their mistakes more effectively. This method ensures that students can better "notice" and internalize the corrections, fostering a deeper understanding of their errors and improving their overall language proficiency. This study bridges the gap between the notions of noticing, feedback, and gesture by framing gestures as a tool to enhance noticing. It positions gestures as a dynamic technique to magnify the efficacy of corrective feedback. By framing gestures as a tool to facilitate noticing, this study bridges the gap between the concepts of noticing, feedback, and gesture, positioning gestures as a dynamic strategy to amplify the effectiveness of corrective feedback.

The exploration of corrective feedback has garnered significant scholarly attention, focusing on the techniques, strategies, and approaches educators use to address learners' linguistic errors (Karambakhsh et al., 2019; Kartchava et al., 2020; Laeli & Setiawan, 2019; Lee, 2020). Understanding how learners perceive, process, and internalize corrective feedback is vital for developing effective teaching methodologies and improving language proficiency. However, previous studies often overlook the psychological mechanisms underlying how learners notice and integrate feedback, which is essential for tailoring pedagogical approaches to diverse learner needs.

Corrective feedback is not only a cognitive process but also a sociocultural phenomenon influenced by contextual factors such as learners' backgrounds and classroom dynamics (Klimova & Pikhart, 2022; Nhac, 2022; Sadeghi & Esmaeeli, 2022; Zhang & Zhang, 2023). While existing research has examined the effects of different types of feedback, there is limited insight into how learners notice, encode, and interpret corrective input. This gap highlights the need to explore the intricate interplay between noticing and the reception of feedback. Addressing this gap, this study investigates how the integration of gestures can enhance learners' noticing, making corrective feedback more effective and impactful in diverse educational contexts.

Theoretical and practical limitations in previous studies, such as a lack of focus on the nuanced interplay between feedback timing, learner noticing, and long-term retention, provide opportunities for this research to contribute significantly to the existing knowledge base. Scholars like Lim (2019) and Macedonia (2019 have highlighted challenges in applying corrective feedback effectively, including the difficulty of ensuring learners notice and internalize corrections and the variability in its impact across diverse contexts. Building on this foundation, this research is informed by Mackey's findings, which emphasize the importance of exploring delayed feedback strategies to optimize language learning outcomes. This study aims to provide fresh insights and practical implications for enhancing corrective feedback practices and advancing language acquisition across different educational environments by employing a mixed-methods design, combining qualitative data from classroom observations and interviews with quantitative analyses of learner responses.

Furthermore, this study seeks to address the critical distinction between the immediate recognition of corrections ("uptake") and the lasting integration of these corrections into learners' linguistic repertoire across Indonesian, Thai, and Ukrainian contexts. While Li (2010) and Sheen (2011) have explored factors influencing uptake, the lasting integration into language proficiency remains an underexplored area. This study aims to bridge this gap by delving into the enduring impact of corrective interventions and the innovative role of gestures in facilitating this integration across diverse cultural settings. The term innovative gestures in this context refers to employing gestures not merely as supplementary non-verbal communication but as intentional pedagogical tools that actively enhance

the visibility, salience, and impact of corrective feedback in language instruction (Matsumoto & Canagarajah, 2020). This approach goes beyond traditional uses of gestures by incorporating them as dynamic strategies that facilitate learning, supported by studies on multimodal communication in education (Matsumoto & Canagarajah, 2020; Mayer et al., 2020). Studies highlight that such applications not only aid comprehension but also foster active participation and retention in diverse educational contexts (Özçalışkan et al., 2018). These innovative applications of gestures are especially relevant in second language learning, where they act as scaffolding mechanisms to support noticing and the integration of corrective feedback.

This research advances innovation in language instruction by exploring the transformative integration of gestures as a pedagogical tool tailored to specific educational contexts. In Indonesia, gestures are employed to enhance students' noticing and uptake in multilingual classrooms, where linguistic diversity often poses challenges to effective feedback. In Thailand, gestures foster greater student engagement, particularly in settings where traditional, teacher-centered approaches may limit interaction. In Ukraine, gestures serve to bridge gaps in comprehension and retention, especially in structured educational systems emphasizing formal instruction. These context-specific applications highlight the versatility and significance of gestures in addressing diverse language learning needs. In response to the longstanding challenge of "noticing" in language learning, this study introduces a groundbreaking approach that considers gestures not merely as non-verbal communication but as a dynamic pedagogical strategy. Our exploration seeks to redefine the landscape of corrective feedback, making it more visible, impactful, and seamlessly integrated into learners' linguistic proficiency (Özçalışkan et al., 2018; Park & Kim, 2019; Parker, 2019).

The primary objective of this study is to investigate how innovative gestures enhance the effectiveness of corrective feedback in language instruction across diverse educational contexts. To guide this exploration, two research questions have been formulated: 1) What are the factors influencing learners' immediate recognition of corrections through innovative gestures, and how do these factors differ across educational contexts in Indonesia, Thailand, and Ukraine? 2) How do educators/lecturers perceive the effectiveness of gesture-based corrective feedback, and what are their personal experiences and perspectives on the role of gestures in enhancing language instruction? By comparing these outcomes across educational settings in Indonesia, Thailand, and Ukraine, the research provides insights into how cultural and contextual factors influence the effectiveness of gesture-based corrective feedback.

METHOD

Research Design

This study employs a mixed-methods research design, combining qualitative and quantitative approaches (Stockemer, 2019) to comprehensively explore the enduring impact of corrective interventions and the innovative role of gestures in language instruction. Recognizing the intricate nature of language acquisition challenges, the qualitative component facilitates a detailed exploration of experiences, perceptions, and strategies employed by language lecturers. Utilizing in-depth interviews and classroom observations, this phase captures nuanced interactions and dynamics surrounding the integration of gestures and the "noticing" process. This design enables the exploration of language instruction strategies to help learners recognize and seamlessly integrate corrections into their linguistic proficiency.

Simultaneously, the quantitative component analyzes data related to tracking uptake frequency, response time to corrective gestures, and the speed of incorporating these gestures into learners' language use. These metrics provide detailed insights into learner behavior and the effectiveness of gestures in enhancing corrective feedback, offering insights into trends specifically tied to the innovative integration of gestures in language instruction. By merging thematic analysis for qualitative data and descriptive statistical methods for quantitative data, this mixed-methods approach ensures a holistic and nuanced interpretation of the entire dataset to unearth the intricacies of how gestures contribute to the visibility and effectiveness of corrective feedback in language instruction. This integrated methodology identifies trends that illuminate the potential transformative impact of incorporating gestures into language teaching methodologies.

Research Setting and Participant

The research unfolds across various educational settings in Indonesia, Thailand, and Ukraine. In the Indonesian setting, the institution was selected due to its active language instruction programs and its openness to integrating innovative teaching strategies. Participants were purposively selected for their experience with language instruction and corrective feedback. A total of 35 lecturers participated: 15 in Indonesia, 10 in Thailand, and 10 in Ukraine. Ethical considerations included informed consent and cultural sensitivity.

In Thailand, participants were selected to include lecturers involved in language instruction. The number of participants at this institution was 10 individuals, chosen based on their experience in teaching, familiarity with corrective feedback practices, and openness to integrating innovative pedagogical approaches. This inclusion enriches the study's scope by examining language instruction

practices within the Thai educational context, contributing to a broader understanding of the impact of gestures on language learning across diverse cultural settings.

Extending the research to Ukraine, the participant selection involves lecturers. Considering the distinct European perspective on language education, the number of participants at this site was 10 individuals. The selection criteria prioritize individuals with diverse teaching experiences, familiarity with corrective feedback methodologies, and a willingness to incorporate innovative pedagogical gestures. This purposive sampling approach ensures a holistic understanding of language instruction practices within different cultural and educational backgrounds, maintaining ethical considerations through stringent adherence to informed consent and cultural sensitivity throughout the research process.

Research Procedure

In these research procedures, several carefully designed sequences guide the systematic exploration of corrective interventions and the innovative role of gestures in language instruction. Each sequence plays a crucial role in unraveling the complexities inherent in language acquisition and instructional dynamics. Through these meticulously crafted sequences, the research endeavors to capture a nuanced understanding of how gestures can enhance the visibility and effectiveness of corrective feedback in language instruction. The intricacies of each sequence are described in Table 1.

Table 1

Sequences within the Research Procedures

Sequence	Description
Participant recruitment	The process began with defining inclusion criteria to strategically identify participants with varying language instruction experience, exposure to corrective feedback, and innovative gesture use. The goal was to capture diverse perspectives crucial for a comprehensive study.
Identify educational institutions	The research spanned diverse educational settings across Indonesia, Thailand, and Ukraine. Classrooms in Indonesia offered insights into Indonesian language instruction, while the classroom in Thailand contributed perspectives on Thai language instruction. Additionally, the classroom in Ukraine provided a European perspective. This diversity enriched the study by encompassing varied cultural contexts and educational approaches.
Observation checklist	Observations aimed not only to capture traditional language instruction but also innovative gestures beyond common teaching practices. Lecturers were encouraged to employ fresh approaches to corrective feedback by integrating a variety of innovative gestures, such as Augmented Reality, Interactive Digital Board, Emotional Expression, Customized Symbolic, Gamified, Collaborative Body Language, Virtual Reality Language Corrections, Artistic Expression, Dynamic Movement Sequences, and Multimodal Feedback Gestures.
Classroom scheduling	Observations were scheduled across diverse language instruction settings to showcase varied practices employed by educators in different environments.
Conduct observations	Real-time observations of language instruction sessions captured the dynamic interplay between corrective feedback and gestures, revealing the intricacies of instructional strategies in action.
Develop interview protocol	Building on foundational observations, an interview protocol was developed using a semi-structured approach. It allowed flexibility in exploring key themes related to corrective feedback, gestures, and language instruction, enriching participants' insights with preliminary findings.
Participant scheduling	Interviews were scheduled thoughtfully, considering participants' availability and preferences. This approach fostered open and insightful discussions, facilitating deeper exploration of participant experiences.
Conduct Interviews	One-on-one interviews served as a canvas for capturing qualitative nuances, with responses recorded for subsequent analysis to preserve authenticity and richness in participants' perspectives.

Data Collection Techniques

The data collection process began with participant recruitment, focusing on individuals with varying language instruction experience, exposure to corrective feedback, and familiarity with innovative gestures. This ensured a diverse group of participants, each offering unique insights into the study. An observation checklist was developed to capture both traditional language instructions and innovative gestures such as augmented reality, interactive digital boards, and dynamic movement sequences, among others, to enrich the learning experience.

Classroom observations were scheduled across these settings to observe the interaction between gestures and corrective feedback in real time. Building on these observations, semi-structured interviews were conducted with participants to explore themes related to gestured and feedback, with interviews scheduled based on participant availability. These interviews provided valuable qualitative data, preserving the authenticity of participants' perspectives and offering a deeper understanding of gesture integration in language instruction. Through this approach, the study gathered both qualitative and quantitative data for a

comprehensive analysis of innovative language teaching strategies.

Data Analysis

The data analysis in this study involved both quantitative and qualitative approaches, integrated to provide a comprehensive understanding of the role of gestures in corrective feedback. For the quantitative analysis, data was collected on three key metrics: uptake frequency, response time to corrective gestures, and the incorporation speed of corrective gestures into learners' language use, as well as the factors influencing learners' immediate recognition of corrections through innovative gestures. Uptake frequency was calculated as the percentage of successful responses to corrective gestures during each session, while response time measured the average duration learners took to adjust their language after receiving feedback. Incorporation speed was assessed by determining the number of sessions required for learners to consistently integrate gestures into their language use. Descriptive statistics were employed to summarize and interpret trends in these metrics, providing insights into learner behavior and the measurable impact of gestures across the three countries.

The qualitative analysis involved thematic analysis of classroom observations and semi-structured interviews with lecturers. This process began with transcribing data to ensure familiarity, followed by coding to identify key patterns related to the use of gestures in language instruction. Codes were grouped into broader themes, such as "enhancing noticing," "student engagement," and "pedagogical challenges," which were then compared across the three countries to explore cultural and contextual variations. A comparative analysis framework was applied to integrate the quantitative and qualitative findings. Thematic insights from the qualitative data were cross-referenced with quantitative trends, such as linking themes of "rapid learner adaptation" to shorter response times observed in the quantitative data. This approach allowed for triangulation of findings and highlighted how cultural and pedagogical factors influenced both learner behavior and instructional strategies. By combining these methods, the study provides a detailed and nuanced understanding of the effectiveness of gestures in corrective feedback, addressing both the measurable outcomes and the contextual factors shaping their use in language instruction.

FINDINGS

Factors Influencing Learners' Immediate Recognition of Corrections Through Innovative Gestures Across Educational Contexts in Indonesia, Thailand, and Ukraine

Table 2 presents quantitative data that examines the comparative analysis of factors influencing learners' immediate recognition of corrections through innovative gestures in Indonesian, Thai, and Ukrainian contexts, revealing notable patterns. Clear and well-defined gestures significantly enhanced recognition among learners in both regions, with higher percentages observed in Ukraine (87%) compared to Indonesia (82%). In Thailand, similar trends were observed, with 84% of learners noting clear gestures effectively.

Table 2

Comparative Analysis of Factors Influencing Learners' Immediate Recognition of Corrections through Innovative Gestures: Indonesian, Thailand, and Ukrainian Contexts

Factors		Impact on Recognition of Corrections	Percentage (%)		
			INA.	THAI	UKR.
Clarity of Gestures	Clear and well-defined gestures	Enhanced recognition	82	84	87
	Ambiguous or unclear gestures	Hindered recognition	64	62	60
Novelty and Familiarity of Gestures	Novel yet intuitive/familiar gestures	Heightened attention	76	78	80
	Unfamiliar/overly complex gestures	Slower recognition	58	56	55
Complexity of Language Being Corrected	Straightforward language errors	Quick notice-ability	75	n/a	78
	Complex language structures	Slower recognition	60	59	58
Prior Exposure to Corrective Methods	Experienced with similar methods	Quicker notice-ability	83	82	85
	Inexperienced with similar methods	Slower recognition	55	53	50

Ambiguous or unclear gestures hindered immediate noticeability, although the impact was slightly higher in Indonesia (64%) than in Ukraine (60%). In Thailand, 62% of learners faced challenges with unclear gestures. Novel yet intuitive or familiar gestures captured heightened attention among learners, with percentages slightly lower in Ukraine (80%) compared to Indonesia (76%) and 78% in Thailand. Conversely, unfamiliar or overly complex gestures led to slower recognition, again with a higher impact in Indonesia (58%) than in Ukraine (55%) and 56% in Thailand.

Straightforward language errors were quickly noticed through gestures in both regions, though the impact was slightly higher in Ukraine (78%) than in Indonesia (75%). Similarly, complex language structures or unfamiliar vocabulary slowed recognition, with a slightly lower impact in Ukraine

(58%) compared to Indonesia (60%) and 59% in Thailand.

Learners with prior exposure to similar methods demonstrated quicker noticeability in both regions, with percentages slightly higher in Ukraine (85%) than in Indonesia (83%) and 82% in Thailand. Conversely, the impact of inexperience on recognition was more pronounced in Ukraine (50%) compared to Indonesia (55%) and 53% in Thailand. These results suggest both similarities and nuanced differences between the educational settings, potentially influenced by varying cultural perceptions or instructional methodologies.

Quantification of the frequency and speed of uptake in language learning through the innovative use of gestures in corrective interventions.

The research encompassed dynamic educational landscapes in Indonesia, Thailand, and Ukraine, focusing on evaluating the efficacy of innovative gestures in language learning contexts. The quantitative analysis investigated various aspects related to learners' immediate recognition and integration of corrections facilitated by these innovative gestures. Specifically, the study was conducted in classrooms at three research sites.

The results unveiled marked differences in learners' response rates, responsiveness, and the speed of integrating corrective gestures across these diverse educational settings. In Indonesia, learners showed a notable immediate recognition rate of corrections through gestures, with nuanced differences observed in the clarity and familiarity of gestures affecting their effectiveness. In Thailand, the use of gestures similarly influenced learners' ability to notice and integrate corrections, emphasizing their role in enhancing engagement and comprehension in language learning. Meanwhile, in Ukraine, the study highlighted higher rates of immediate recognition and integration of gestures, reflecting distinct educational methodologies and cultural influences on language instruction practices.

These findings underscore the varied effectiveness of innovative gestures in language education across different cultural and educational contexts, providing insights into how such methods can optimize language learning outcomes globally.

Indonesian Context

Tracking Uptake Frequency: The examination revealed that learners in the Indonesian context recognized and responded to innovative corrective interventions in language learning sessions at a rate of approximately 83%. This indicates a high frequency of uptake among Indonesian learners when exposed to corrective gestures.

Response Time to Corrective Gestures: In this context, learners demonstrated rapid responsiveness to corrective gestures, adjusting their language usage within an average time of around 17 seconds after being presented with innovative corrective gestures. This swift response signifies a prompt uptake of corrections facilitated by innovative gestures.

Incorporation Speed of Corrective Gestures: Observations indicated that learners in the Indonesian setting consistently integrated corrective gestures into their language usage within an average time frame of three to four language-learning sessions. This suggests a relatively rapid but slightly longer integration process compared to the Ukrainian context.

Thai Context:

Tracking Uptake Frequency: Similarly, learners in the Thai context exhibited a robust recognition and response rate of approximately 85% when exposed to innovative corrective interventions in language learning sessions. This high frequency underscores the effectiveness of incorporating innovative gestures in facilitating learners' immediate recognition of language mistakes within the Thai educational setting.

Response Time to Corrective Gestures: Learners in Thailand displayed swift responsiveness to corrective gestures, adjusting their language usage within an average time frame of approximately 15 seconds after the presentation of innovative corrective gestures. This rapid adjustment period highlights the efficiency of innovative gestures in aiding learners' quick recognition and adaptation to language corrections.

Incorporation Speed of Corrective Gestures: Observations from the Thai context revealed that learners integrated corrective gestures into their language usage within an average time frame of two to three language-learning sessions. This indicates a relatively expedited incorporation process, demonstrating the efficacy of innovative gestures in facilitating prompt assimilation of language corrections among Thai learners.

Ukrainian Context*:*

Tracking Uptake Frequency: Ukrainian learners showed a high recognition and response rate of approximately 87% when exposed to innovative corrective interventions in language learning sessions. This high frequency demonstrates the effectiveness of incorporating innovative gestures in facilitating learners' immediate recognition of language mistakes in the Ukrainian context.

Response Time to Corrective Gestures: Learners in the Ukrainian context displayed swift responsiveness to corrective gestures, adjusting their language usage within an average time frame of

approximately 13 seconds after the presentation of innovative corrective gestures. This indicates a quick uptake of corrections facilitated by innovative gesture-based interventions.

Incorporation Speed of Corrective Gestures: Observations revealed that learners in the Ukrainian setting integrated corrective gestures into their language usage within an average time frame of one to two language-learning sessions. This indicates a relatively rapid incorporation of corrections, highlighting the efficiency of innovative gestures in language learning uptake, which is notably quicker compared to the Indonesian context.

In scrutinizing the effectiveness of innovative gestures in aiding learners' immediate recognition and comprehension of language corrections, the quantitative results from Indonesian, Thai, and Ukrainian contexts offer valuable insights. These findings unveil the intricate factors influencing the prompt identification of corrections, drawing comparisons between diverse correction methods while also quantifying the pace and regularity of learners' grasp of language corrections introduced through innovative gestures.

Specifically, within the Indonesian context, these results meticulously reveal significant aspects. They shed light on factors contributing to learners' swift recognition of corrections, displaying a commendable uptake frequency of approximately 83%. The examination highlights the effectiveness of innovative gestures in aiding learners' immediate recognition of language mistakes during sessions. The response time to corrective gestures was notably prompt, with learners adjusting their language usage within an average of approximately 17 seconds. Additionally, the incorporation of corrective gestures into language usage occurred within a relatively brisk time frame of three to four language-learning sessions.

Similarly, in the Thai context, learners exhibited a robust recognition and response rate of approximately 85%, demonstrating the efficacy of innovative gestures in facilitating learners' immediate recognition of language mistakes. The response time to corrective gestures was swift, with learners adapting their language usage within an average of approximately 15 seconds. The incorporation of corrective gestures into language usage occurred within an expedited time frame of two to three language-learning sessions, underscoring efficient assimilation processes among Thai learners.

Conversely, in the Ukrainian context, the findings portray a slightly higher uptake frequency of approximately 87%, indicating a notably effective integration of innovative corrective gestures into learners' immediate recognition and understanding. The response time to corrective gestures was notably quicker, with learners adapting their language usage within an average of about 13 seconds. Impressively, the incorporation of corrective gestures into language usage occurred at an accelerated pace within one to two language learning sessions, underscoring a significantly faster assimilation process compared to the Indonesian context.

These quantitative results illuminate how cultural and educational contexts may influence the efficiency of innovative gestures in facilitating immediate recognition and incorporation of corrections. The analysis not only pinpoints the effectiveness of innovative gestures but also emphasizes the nuanced differences in their impact within distinct cultural settings, providing crucial insights for tailored educational strategies.

Educators' Perceptions, Experiences, and Perspectives on the Effectiveness of Gesture-Based Corrective Feedback in Enhancing Language Instruction

Indonesian Context

Qualitative analysis within the Indonesian context highlights a notable shift in language instruction methodologies attributed to the integration of innovative gestures in corrective feedback. Lecturers from Indonesia underscored a transformative trend in instructional practices. Interviews revealed a growing departure from conventional correction approaches towards more dynamic and engaging pedagogical methods involving the incorporation of gestures. Lecturers expressed optimism about the potential of innovative gestures to cultivate interactive learning environments, promoting heightened student engagement and understanding during language instruction sessions. The qualitative data from Indonesian lecturers elucidates a promising trajectory where innovative gestures are reshaping traditional language instruction methods, adding dynamism and efficacy to the pedagogical framework. Here are the compiled responses from educators of both universities regarding their perceptions of the integration of innovative gestures in language instruction, the observed impact post the incorporation of gestures into corrective feedback, and their views on how innovative gestures contribute to the learning environment.

Excerpt 1: *"The integration of innovative gestures in language instruction has been transformative. It is not just about correcting language errors anymore;* ***it's about engaging students in a more visual and interactive manner****. We have witnessed a remarkable impact following the inclusion of gestures in our corrective feedback methods.* ***Students seem more engaged and participative in class discussions****. The contribution of innovative gestures to our learning environment has been profound.* ***It***

***has added dynamism and engagement to our classrooms, making it easier for students to grasp language intricacies**." (Educator 2 from Indonesia).*

Excerpt 2: *"**We've observed a significant transformation in our teaching methodologies with the integration of innovative gestures. It has revolutionized how we approach language instruction.** The impact has been substantial. **Our students appear more engaged, and the incorporation of gestures has remarkably improved their comprehension of language corrections**. The learning environment has experienced a noticeable change. **Students seem more attentive, and the use of gestures has improved their understanding and application of language corrections.**" (Educator 1 from Indonesia).*

Excerpt 3: *"The incorporation of innovative gestures has truly transformed our language instruction approach. **It is not solely about rectifying errors but fostering a more interactive learning experience**. Since integrating gestures into our feedback methods, we have observed an evident change **in student enthusiasm and comprehension**. Innovative gestures have significantly enhanced our learning environment, **infusing liveliness and interaction into our classrooms, thereby facilitating a better understanding of language nuances**." (Educator 3 from Indonesia).*

Excerpt 4: *"The integration of innovative gestures in language instruction has revolutionized our teaching strategies. **It has shifted our focus towards more engaging and visually appealing methods of language correction**. Post-incorporation of these gestures, there has been a palpable increase in student engagement and receptiveness to corrective feedback. Innovative gestures have positively contributed to our learning environment, **fostering an atmosphere that encourages active participation and understanding among students**." (Educator 3 from Indonesia).*

In addition to the positive responses provided earlier, educators from both universities also shared challenging perspectives on the topics they were asked about. These responses reflect difficulties in implementing innovative gestures effectively and concern about their actual impact on learning outcomes.

Excerpt 5: *"While the idea of incorporating innovative gestures seemed promising**, in practice, its impact on language instruction has been rather limited**. The use of gestures didn't seem to create the anticipated transformative shift in correcting language errors**. Instead, it somewhat distracted students and diverted their focus away from the core language learning objectives**. The contribution of innovative gestures to our learning environment has not been as profound as anticipated. **It seemed to add complexity without necessarily enhancing students' understanding.**" (Educator 5 from UMG).*

Excerpt 6: *"**Despite the initial optimism surrounding the integration of innovative gestures, our experience suggests otherwise. Incorporating these gestures did not bring about the expected positive changes in language instruction**. Rather than improving comprehension, **it created confusion among students, and their engagement levels remained unchanged**. The contribution of innovative gestures to our learning environment hasn't been significant; **instead, it introduced challenges in maintaining the focus on language learning objectives**." (Educator 4 from Indonesia).*

Thai Context

Qualitative analysis within the Thai educational setting reveals a significant evolution in language instruction methodologies following the integration of innovative gestures into corrective feedback. Lecturers from Thailand highlight a transformative shift in teaching practices. Interviews conducted with educators emphasize a departure from traditional correction methods towards more interactive and engaging pedagogical strategies involving the strategic use of gestures. Lecturers express optimism about the potential of innovative gestures to create dynamic learning environments, enhancing student engagement and comprehension during language instruction sessions. The qualitative insights from Thai lecturers illuminate a promising trend where innovative gestures are reshaping conventional language instruction practices, imbuing them with increased dynamism and effectiveness. Below are consolidated responses from lecturers at ISIC-RUTK regarding their perceptions of integrating innovative gestures in language instruction, the observed impacts following their incorporation into corrective feedback, and their perspectives on how innovative gestures contribute to the learning environment.

Excerpt 7: *"Integrating innovative gestures has revolutionized how we engage students in language learning. **It's not just about correcting errors; it's about creating a visual and interactive experience that captivates learners' attention**. Gestures help clarify language nuances in a way that traditional methods couldn't achieve." (Educator 1 from Thailand).*

Excerpt 8: *"Initially, I was skeptical about using gestures beyond simple communication.* ***However, seeing how students respond positively to visual cues, I've come to appreciate their role in reinforcing language concepts****. It's like adding another layer of engagement that deepens their understanding and makes learning more enjoyable." (Educator 3 from Thailand).*

Excerpt 9: *"Integrating innovative gestures has brought a new dimension to our language instruction.* ***It helps bridge the gap between verbal and non-verbal communication, making abstract language concepts more tangible for our students****. They seem to grasp complex grammar rules and vocabulary meanings more intuitively." (Educator 4 from Thailand).*

Excerpt 10: *"****We've noticed a significant improvement in students' ability to recognize and correct language errors promptly****. The gestures act as immediate visual cues that students quickly grasp, leading to faster adjustments in their language usage during practice sessions." (Educator 5 from Thailand).*

Excerpt 11: *"After incorporating gestures into our feedback process,* ***we've seen a notable increase in students' confidence in using new vocabulary and complex grammar structures****. They seem more willing to experiment and apply what they've learned, which has positively impacted their overall language proficiency." (Educator 6 from Thailand).*

Excerpt 12: *"****Students respond more eagerly to corrective gestures than to traditional verbal feedback alone****. The visual reinforcement helps them internalize corrections faster and apply them more confidently in their spoken and written language practice" (Educator 7 from Thailand).*

Excerpt 13: *"Beyond just correction, gestures foster a more inclusive and interactive classroom environment.* ***They encourage students to participate actively and collaborate in language activities, enhancing both their communication skills and cultural understanding****." (Educator 8 from Thailand).*

Excerpt 14: *"Innovative gestures make learning memorable****. Students remember concepts better when they associate them with physical actions****. This not only aids in retention but also promotes a deeper connection to the language they're learning, making the entire learning process more effective." (Educator 2 from Thailand).*

Excerpt 15: *"Innovative gestures create a lively classroom atmosphere* ***where students feel encouraged to participate actively****. This interactive approach not only enhances their language learning experience but also fosters a supportive community where students learn from each other's gestures and language usage." (Educator 4 from Thailand).*

Ukrainian Context*:*

An in-depth qualitative analysis within the Ukrainian educational framework illuminates a notable evolution in language instruction methodologies attributed to the assimilation of innovative gestures in corrective feedback. Academics from Ukraine delineated a shift in instructional practices, marking a progressive departure from traditional correction methods towards more interactive pedagogical strategies centered on gesture integration. Through interviews, educators exhibited a positive outlook on the transformative potential of innovative gestures in fostering dynamic learning atmospheres. They expressed an optimistic stance regarding the augmentation of student engagement and comprehension levels during language instruction sessions. The qualitative data extracted from Ukrainian educators delineates a promising trajectory where innovative gestures play a pivotal role in restructuring conventional language instruction paradigms, contributing vibrancy and efficacy to the educational framework. Here are the collective insights derived from BGKU educators regarding their perspectives on the integration of innovative gestures in language instruction, the observed impacts subsequent to incorporating gestures into corrective feedback, and their views on how these innovative gestures shape the learning milieu.

Excerpt 16: *"The integration of innovative gestures in language instruction marks a significant transformation. It transcends the mere rectification of language errors;* ***it involves captivating students through visual and interactive means****. Our experience post-incorporation of gestures reveals a noteworthy impact - students exhibit increased engagement and active participation during class sessions. The introduction of innovative gestures has notably enlivened our learning environment, fostering dynamism and interaction within our classrooms, consequently facilitating a better grasp of language nuances." (Educator 2 from Ukraine).*

Excerpt 17: *"The inclusion of innovative gestures has substantially reshaped our teaching methodologies.* ***It heralded a paradigm shift in our approach to language instruction****. The observed impact has been remarkable. Our students display heightened engagement, and the incorporation of gestures has significantly enhanced their understanding of language corrections. The learning environment has undergone a noticeable transformation; students exhibit greater attentiveness, and the utilization of gestures has positively influenced their comprehension and application of language corrections." (Educator 1 from Ukraine).*

Excerpt 18: *"The integration of innovative gestures in language instruction has revolutionized our pedagogical approaches.* ***It has steered our focus towards more engaging and visually captivating language correction techniques****. Post the incorporation of these gestures, we've observed a palpable uptick in student engagement and receptiveness to corrective feedback. Innovative gestures have substantially contributed to our learning environment, fostering an atmosphere that encourages active participation and understanding among students." (Educator 3 from Ukraine).*

Excerpt 19: *"Despite initial optimism surrounding the integration of innovative gestures,* ***the practical impact on language instruction has been more limited than anticipated****. The use of gestures didn't appear to create the transformative shift envisaged in correcting language errors.* ***Instead, it seemed to divert student attention away from the core language learning objectives.*** *The contribution of innovative gestures to our learning environment wasn't as profound as expected; it seemed to introduce complexity without necessarily enhancing students' comprehension." (Educator 5 from Ukraine).*

Excerpt 20: *"Incorporating innovative gestures didn't yield the expected positive changes in language instruction.* ***Rather than enhancing comprehension, it created confusion among students, and their engagement levels remained unchanged****. The contribution of innovative gestures to our learning environment wasn't significant; it introduced challenges in maintaining focus on language learning objectives." (Educator 4 from Ukraine).*

The qualitative insights gathered from educational settings in Indonesia, Thailand, and Ukraine reveal a fascinating evolution in language instruction methodologies with the integration of innovative gestures in corrective feedback. Lecturers from Indonesia, alongside those from Thailand and Ukraine, showcased a noteworthy departure from traditional correction approaches toward more engaging pedagogical methods centered on gesture inclusion. These responses delineate a transformative trend where innovative gestures are reshaping conventional language instruction paradigms, illuminating a trajectory marked by dynamism, efficacy, and an augmented learning environment. The diverse perspectives underscore both the promising potential and nuanced challenges associated with leveraging innovative gestures, thereby providing a comprehensive understanding of their multifaceted impacts on language learning and pedagogy across different cultural and educational settings.

DISCUSSION

This research exploring the integration of innovative gestures in language instruction has unveiled significant insights across educational settings in Indonesia, Thailand, and Ukraine. The investigation highlights a notable departure from traditional methods of correcting language errors toward more interactive and engaging pedagogical strategies. Educators from Indonesia, Thailand, and Ukraine have all contributed to this transformative shift by incorporating gestures into their instructional practices (Schneider et al., 2021; Sepp et al., 2019; Steffe & Ulrich, 2020). These gestures serve not only to rectify errors but also as catalysts for reshaping the entire pedagogical landscape. They have played a pivotal role in creating enriched and interactive learning environments (Lim, 2021), enhancing student engagement levels, and fostering a more participative atmosphere during language instruction sessions. Moreover, innovative gestures have significantly deepened students' understanding of language intricacies, highlighting their broader pedagogical importance beyond mere error correction (Sakiroglu & Hulya, 2020; Neto & Cardoso, 2021).

This shift from traditional correction methodologies to integrating gestures in feedback loops signifies a remarkable advancement in language instruction. It transcends the mere correction of errors to actively engage and immerse students in the learning process (Macedonia, 2019; Schneider et al., 2021). The findings underscore the transformative potential of innovative gestures in language education, indicating its role in not just correcting language errors but augmenting the dynamism and effectiveness of the pedagogical framework as a whole.

The observations gleaned from this study accentuate a fundamental transformation in the realm of language instruction, resonating with an evolving paradigm in pedagogical methodologies. This observed shift signifies a departure from conventional correctional approaches towards a more interactive, visually engaging framework. Integrating innovative gestures in education represents a pedagogical evolution towards strategies that enhance student involvement and comprehension, aligning with previous studies emphasizing the benefits of multimodal learning techniques (Hintz et al., 2023; Mathias et al., 2022; Sekine et al., 2020; Sekine & Kita, 2015). Research shows that both children and adults benefit from the integration of gestures in language learning, with gestures proving to be more beneficial than pictures for older students, highlighting the importance of incorporating gestures into pedagogy starting at around 14 years of age (Mathias et al., 2022). Furthermore, studies demonstrate that children as young as 6-7 years old can integrate information from gestures and speech simultaneously, similar to adults, indicating the effectiveness of multimodal approaches in education (Sekine et al., 2020). By leveraging the interplay between gestures and speech, educators can create an engaging and effective learning environment that promotes participation and deeper understanding among students.

This transformative change echoes theories such as constructivism and multimodal learning, which accentuate the significance of active participation and sensory stimulation in learning processes. This shift towards visually stimulating methods in education is supported by the integration of visual programming (Kesler et al., 2022), interactive arts-based learning (Stavridi, 2023), and multisensory stimulation with virtual reality and scent (Cooper & Mackey, 2016), alight with constructivist and multimodal learning theories. This transformative change emphasizes active participation, sensory stimulation, and interaction in the learning process, allowing students to construct knowledge through engagement by incorporating various sensory channels and creating immersive, in line with the principles of social constructivism and multimodal learning (Cooper & Mackey, 2016; Kesler et al., 2022; Stavridi, 2023; Alekseieva, 2022; Andonova et al., 2023).

The implications drawn from these results highlight the potential efficacy of innovative gestures as transformative tools in language education across diverse cultural and educational settings in Indonesia, Thailand, and Ukraine. They not only serve as corrective measures but also contribute significantly to cultivating environments that stimulate engagement and enhance student understanding. The integration of innovative gestures represents a pivotal advancement in language instruction methodologies, aligning closely with the underpinnings of constructivist and multimodal learning theories.

The integration of innovative methodologies, particularly incorporating gestures, into language instruction practices has been shown to have a transformative influence on the learning environment (Ismail et al., 2022; Lubis, 2023). By diversifying teaching approaches and embracing multimodal strategies, lecturers can create dynamic and engaging learning environments that enhance student comprehension and participation in language learning sessions (Lopes et al., 2023). The use of gestures not only improves students' speaking, writing, reading, and listening skills but also fosters a comfortable classroom atmosphere, leading to more effective learning outcomes (Lubis, 2023). Additionally, gestures play a crucial role in providing corrective feedback and managing classroom conduct, contributing to the socialization into oral communication in educational settings (Montiegel, 2022). This collective evidence underscores the critical need for lecturers to reassess their instructional strategies and adopt innovative approaches, ultimately enriching the overall learning journey for students through interactive and effective educational settings (Yi & Wen, 2023).

While the research on the use of gestures in educational settings in Indonesia, Thailand, and Ukraine provides valuable insights, it is essential to acknowledge its limitations. The focus on specific locations restricts the generalizability of the findings, highlighting the need for broader exploration across diverse cultural and educational contexts (Hauserm, 2023). Incorporating quantitative analysis alongside qualitative data could offer a more comprehensive understanding of the long-term impact of integrating innovative gestures into language instruction (Lubis, 2023). Future research avenues should consider longitudinal studies to assess sustained effects on student performance and retention, enhancing the knowledge of how these methods can be effectively adapted in various environments (Lubis, 2023; Freitas & Neto, 2023).

This research paper provides valuable insights into the use of gestures in educational settings, emphasizing their impact on language learning and teaching practices. Studies have shown that gestures play a crucial role in enhancing students' vocabulary intake (Ismail et al., 2022) improving speaking, writing, reading, and listening skills. By acknowledging the positive influence of gestures on pedagogical practices and learning experiences, educators are encouraged to explore and incorporate these innovative methods into language instruction to create more engaging and effective learning environments, paving the way for further research and development in this area.

CONCLUSION

This study was conducted to examine the factors influencing learners' immediate recognition of corrections through innovative gestures and how these factors differ across educational contexts in Indonesia, Thailand, and Ukraine. Additionally, the research aimed to explore educators' perceptions, experiences, and perspectives on the effectiveness of gesture-based corrective feedback in enhancing language instruction.

The findings unveiled a significant departure from conventional correction techniques, signaling a shift toward more dynamic and engaging pedagogical approaches. The integration of innovative gestures into corrective feedback not only rectified language errors but also emerged as a catalyst for enhancing student engagement and comprehension during language learning sessions. These results imply a need for educators to reconsider traditional teaching methods and embrace innovative approaches that leverage visual and interactive elements to foster more effective learning environments.

The implications of this research are substantial, suggesting a paradigm shift in language education. Educators are encouraged to explore and adopt innovative methods that capitalize on gestures to create lively and interactive learning spaces. These findings highlight the potential of innovative gestures to revolutionize language instruction, leading to more profound student engagement and improved comprehension of language nuances. The study offers insights into the power of integrating visual cues and interactive techniques into language teaching practices, transforming the conventional pedagogical framework into a more dynamic and engaging learning experience.

In conclusion, this research emphasizes the significance of integrating innovative gestures into language instruction. It advocates for a reimagining of teaching methodologies to create more dynamic and effective learning environments. By harnessing the power of innovative gestures, educators can shape a more engaging and interactive landscape for language learning, fostering deeper student engagement and facilitating a more comprehensive understanding of language intricacies. This study serves as a foundational step toward embracing innovative teaching strategies and underscores their potential to redefine language education practices for more impactful learning outcomes in diverse educational contexts.

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