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Developing Intonation Through Gestures in Early English Language Teaching

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Abstract

Existing research has proved the strong link between gestures and speech both in the first language (L1) and the second language (L2) acquisition. Despite the significant benefits of incorporating gestures into language instruction, there remains a gap in research concerning their impact on very young learners, especially in non-Western settings like Vietnam. The current study investigates the effects of using gestures to teach English intonation to very young learners. The study adopted a quasi-experimental design, and it recruited 49 participants aged 4 to 6 years at a language center. The two intact classes were randomly assigned as the control and experimental groups. The learners in the experimental group were taught intonation patterns of some English sentence types, such as YES/NO questions, WH questions, and statements through gestures, while traditional instructions without any gestures were applied in the control group. Two primary tools were utilized for data collection: intonation tests and observations. The findings demonstrated that learners who received gesture-based teaching significantly showed improvements in their intonation. Additionally, these learners showed more engagement and active participation in class. These results highlight the benefits of using gestures in teaching English intonation, especially in early English language teaching in Vietnam.

Keywords: English intonation, gestures, very young learners, Vietnamese, early English acquisition

Introduction

According to Zulfugarova (2018), intonation refers to the modulation of voice pitch across phrases and sentences. Intonation plays a crucial role in verbal communication because it conveys emotions, structures speech, and shapes the interpretations of others' intentions. Besides, intonation can help distinguish between statements and questions, which makes language learners produce more fluent and clear speech (Wichmann, 2000). Meanwhile, in early language acquisition, the surrounding environment and educational methods are critical in mastering the language. According to Vygotsky's (1978) sociocultural theory, children develop language abilities through both formal teaching and casual interactions. This development occurs both physically and mentally. Moreover, the use of gestures in early childhood language

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acquisition has been proven to reflect natural communicative behaviors and cognitive development stages (Church et al., 2004).

In educational settings, gestures can help L2 learners enhance learning outcomes by providing non-verbal cues that reinforce verbal instruction (McNeill, 1992). In this way, it facilitates understanding and retention. In addition, gestures can help organize thought and link abstract concepts with physical actions, leading to language improvements (Goldin-Meadow, 2011). Recent research in L2 intonation teaching has demonstrated that learners' intonation could be improved by the use of technological tools in pedagogical instructions, namely the computer software Praat for phonetic analysis (Le & Brook, 2011), Google Text-to-Speech for shadowing techniques (Le et al., 2022) and Chatbot AI (Hoang et al., 2023). Several scholars (e.g., Baker, 2014; Iizuka et al., 2020; Thompson & Renandya, 2020) also agreed that gestures in pronunciation training across segmental and suprasegmental levels were significant. In particular, Tellier (2008) and Macedonia (2014) suggested that gestures can help remember the language longer. Given the significance of integrating gestures in L2 instruction teaching intonation, there is a noticeable gap in applying these techniques to young learners, especially in non-Western contexts like Vietnam.

In this research, the target learners were aged 4 to 6 years for two reasons. First, this is a critical stage of linguistic development where intonation patterns and rhythmic speech are becoming internalized. Second, as Goldin-Meadow (2009) argued, gesture-based learning could be particularly effective for this age group as gestures are naturally integrated into their communicative methods. The main goal of this study is to compare the effectiveness of a gesture-based approach with traditional teaching methods in developing English intonation. The results of this study hopefully can offer structured insights into the practical implications of such pedagogical strategies. The gestural approach reflects the natural integration of gesture and speech in communication and taps into the intrinsic learning styles of very young learners. Subsequently, the study addresses the two following questions:

1. To what extent do the learners who received gestural instructions improve their English intonation?
2. What are these learners' reactions to this gestured-based intonational teaching approach?

Literature review

Theoretical Foundations of Early English Acquisition

The benefits of early language exposure are underlined by Garton and Copland (2019), who stated that teaching English to very young learners, particularly those aged 4 to 6 is crucial. They explained that early exposure enhances listening skills and pronunciation, thus leveraging the developing brain's receptivity to new sounds. Despite the fact that there might be slower progress in grammar, the overall benefits of improved pronunciation and listening comprehension over time cannot be overlooked for long-term development. What is more, early language learning is critical for achieving proficiency even as children continue to develop their first language (Serrano, 2018). The learning process often involves oral exposure to new

languages through interactions that include both facial expressions and gestures. These factors set the foundation for full verbal communication in L2 acquisitions. As Halliwell (1992) and Cameron (2001) outlined, the teaching principles for very young learners should promote a learning-centered approach. This approach is backed by the social learning and cognitive development theories of Vygotsky (1978) and Piaget (1952). According to these theories, learning occurs through social interactions and is strengthened by scaffolding and structured activities. Such activities help children focus on crucial elements of L2 learning, like intonation.

Teachers should prioritize comprehension and communication when teaching English intonation to these young learners (Cameron, 2001). Gestures are recommended for tasks that require both verbal and nonverbal cues. This makes the activities more engaging, and learners can master the spoken language in a meaningful and interactive manner. To conclude, the integration of gestures in teaching can make learning more effective and align with learners' natural learning behaviors, resulting in deeper understanding and retention of language skills.

Intonation in English Language Proficiency

In linguistics, intonation is fundamentally described as the melody of speech or sentence, often involving pitch and modulation variations. These variations extend simple sounds. In Allen's (1971) definition, intonation includes additional aspects such as rhythm, melody, pitch variations, stress, volume, and pause durations. Allen (1971) added that these components are closely linked to the broader concept of prosody or suprasegmentals. Moreover, intonation is considered part of a comprehensive gestural framework, which is essential for effective communication by Bolinger (1985). He identified two elements in defining intonation: body language and facial expressions. Meanwhile, according to Zulfugarova's definition (2018), intonation refers to the melody of speech, sentence stress, and rhythmic patterns. Therefore, intonational patterns can signal different sentence types and functions, such as declarative sentences, commands, and questions, all of which have distinct communicative roles.

Chun (2002) stated that intonation serves multifaceted functions in spoken language, including grammatical, attitudinal, discourse, and sociolinguistic aspects. Regarding grammatical aspects, intonation helps structure speech and guides the listener to interpret the speaker's intent. For instance, rising intonation typically signals a question or prompts a response, whereas signaling a conclusion or command should use falling intonation. For attitudinal aspects, intonation conveys emotional cues, such as sarcasm or anger. Speakers can express their attitudes and emotions using intonation to make the interaction more effective. At the discourse level, intonation can be used to organize speech. The act of emphasizing or deemphasizing certain elements using intonation aims to maintain focus and coherence. It also facilitates transitions in topics or the introduction of new information, which helps listeners navigate the flow of conversation. In terms of sociolinguistic areas, intonation functions as a marker of identity. Chun (2002) explained that intonation patterns can distinguish speakers by regional, social, or professional attributes and influence how messages are interpreted as well as how speakers are positioned within social contexts. In sum, given the interplay of intonation across different layers of language, it is pivotal to pay more attention to intonation in obtaining more effective communication in early L2 development.

Gestures in English Learning

Language and gestures are fundamentally interconnected (McCafferty, 2004). In L2 learning, this interconnection can help enhance comprehension and expression because it enables L2 learners to minimize obstacles in the development of vocabulary, grammar, and discourse (Gullberg, 2006, 2009). The relationship between gestures and language is demonstrated in the learning process as both input and output. For the former, gestures can capture attention and enhance semantic understanding thanks to the multisensory engagement. Conversely, for the latter, gestures help structure the prosodic elements of speech, such as rhythm and stress patterns (McCafferty, 2006). What is more, due to the distinct differences between Vietnamese and English in phonological structures, the role of intonation is more apparent in achieving English proficiency for Vietnamese learners. To illustrate, Vietnamese is characterized as tonal and syllabic-timed, and it maintains consistent timing across syllables. In contrast, English is stress-timed, which means that it has variable intonation that affects stress perception and production within its language (Wennerstrom, 2001).

McNeill (2000) proposed the common classifications of gestures, pointing out four types of forms: deictic, iconic, metaphoric, and beat gestures. Each type has specific communicative functions. Deictic gestures, for instance, indicate objects or concepts. Iconic gestures visually represent the objects they describe. Metaphoric gestures convey abstract ideas, while beat gestures synchronize with speech rhythms to emphasize particular points or words (McNeill, 2000). These gestures help learners bridge linguistic gaps and facilitate a deep understanding during interactions.

The role of nonverbal communication, specifically gestures, in reinforcing verbal messages and enhancing cognitive processes has been documented in prior related literature (Bolinger, 1983; Goldin-Meadow, 2009). Studies by Kendon (2004) and McNeill (2005) highlight the inseparable relationship between speech and gestures. These researchers emphasized the significant contribution of gestures in enhancing expression and thought during communication. Moreover, Gentilucci and Dalla Volta (2008) advocated that gestures and spoken language share a common motor control system. Therefore, it plays a part in communication, especially in L2 learning. Gestures can help young L2 learners acquire language more effectively (Goldin-Meadow, 2009). This benefit is confirmed by McCafferty (2006), who elucidated that using gestures synchronously with speech in education settings is an effective way to master language features. Specifically, this approach can make students grasp abstract language concepts, thus enriching their learning experience. Despite its integral part in communication, how gestures complement L2 speech in EFL contexts is still underexplored.

Research on Gestures and Intonation in English

A review of related literature on teaching English intonation among EFL learners has shown a recent integration of technology to enhance pronunciation or intonation. Specifically, Le and Brook (2011) utilized the computer software Praat for phonetic analysis in their study. Six participants used the software to analyze their phonetic stress patterns. The input focused on yes/no and WH questions. The findings uncovered that thanks to the immediate visual feedback provided by digital tools, learners could identify their errors and enhance their pronunciation.

In a similar vein, in Le et al.'s study (2022), the benefits of the shadowing method with the assistance of Google Text-to-Speech in improving students' intonation were also observed. Seven participants used this technique for pronunciation practice. After the practice, they could reduce their flat tone and achieve more comprehensible English intonations. Moreover, the findings of the study by Nguyen et al. (2023) also revealed learners' positive attitudes towards the use of podcasts in teaching intonation. Ngo (2017) also conducted an experimental study to manipulate intonational instructions, concentrating on teaching tonicity and tone. His findings suggested that the learners' pronunciation could be improved by affecting their intonation perception and production.

The crucial role of gestures in teaching pronunciation also received recognition from recent research, ranging from individual sounds to the melody of speech. For instance, Baker (2014) uncovered that gestures are important for developing linguistic items at the word level. These results were reported by five experienced teachers with master's degrees in English teaching. Similarly, this argument is supported by Iizuka et al. (2020), arguing that the use of kinetic activities, such as handclapping, in pronunciation instruction can boost phonological skills and memory. In their study, Japanese EFL students who practiced pronunciation with handclapping outperformed those who did not in developing L2 segmental features. This effect goes beyond segmental levels. Thompson and Renandya (2020) postulated that gestures can also be used in corrective feedback in pronunciation instruction at suprasegmental levels.

Regarding very young learners, a study by Tellier (2008) attempted to examine the effect of gestures on L2 memorization. The study recruited 20 French EFL children with an average age of 5.5. The groups of participants who received vocabulary instructions with gestures, including mimicking the gestures while repeating the words, demonstrated an increase in memorizing English vocabulary. The results stressed the important role of gestures as visual and motor modalities in L2 vocabulary learning. This view is advocated by another research study conducted by Macedonia (2014), which found that gestures can improve vocabulary learning. In other words, L2 learners can boost their ability to remember and recall words by using gestures during learning.

In teaching intonation, Smotrova (2017) and Girsang et al. (2021) investigated how gestures are integrated into L2 teaching and learning. Smotrova (2017) discovered that teachers could use instructional gestures to help learners identify and generate syllables, determine word stress placement, and master rhythmic patterns in producing L2 speech. Besides, Smotrova (2017) underlined that gestures performed by learners can help them gain control over some pronunciation features. In the same manner, in a qualitative study conducted by Girsang et al. (2021), students were found to use similar paralinguistic features in their unique manner. It was revealed that their pitch levels varied, with some speaking at low pitches and others at high pitches.

Altogether, the abovementioned studies highlight the critical role of gestures in English communication and their multifaceted benefits across domains of language acquisition. Gestures can be used as a powerful instructional pedagogical tool in teaching aspects of language such as pronunciation and intonation. Specifically, gestures can act as a bridge to convey prosodic features more effectively and support learners in internalizing the rhythm and

melody of English speech.

Despite the proven benefits of incorporating gestures into language instruction, there remains a gap in research concerning their impact on very young learners, especially in non-Western settings like Vietnam. Existing studies have mainly focused on older learners or have been conducted in Western educational contexts. Cultural differences and educational practices may influence how gestures are perceived and utilized in these settings. Hence, there is a need for more investigations to warrant localized research. A tonal language, Vietnamese presents distinct challenges and opportunities for English intonation acquisition. Therefore, this study aims to address this gap by investigating the effectiveness of a gesture-based approach in teaching intonation to very young Vietnamese English learners. This topic has not been widely studied before.

Methods

Participants

There were 49 participants in this study. They were between 4 and 6 years old and enrolled in a Vietnamese language center. The two intact classes were randomly assigned to either the experimental group (24 participants) or the control group (25 participants). These learners were chosen as the result of convenient sampling. These learners were young, so the researchers asked for informed consent informally from their parents or guardians. They were fully briefed on the study's purpose, procedures, and their right to withdraw participation at any time. The researcher also guaranteed that there was no harm, only benefits for the learners. During the intervention, the experimental group received English intonation instruction through a gesture-based method, while the control group followed a traditional instruction method without gestures.

Design of the Study

This study adopted a quasi-experimental design to investigate the effectiveness of gesture-based teaching methods in developing English intonation among very young learners in the Vietnamese context. The experimental group and control group received differing approaches, and the main difference between the two intonational instructions between the two groups are described as follows:

In the experimental group, the teaching sessions employed specific gestures aimed at emphasizing the intonational patterns of English, such as the distinct rising and falling pitches associated with questions and statements. Specifically, learners imitated the teachers' gestures while producing the patterns, or they could generate spontaneous body movements. These gestures were incorporated into dynamic and engaging tasks like game-based activities. In this way, these children could recognize and reproduce intonational patterns and, at the same time, stay actively engaged and interested in the learning process.

Conversely, the control group adhered to a more traditional model of intonation instruction that focused solely on verbal cues without the support of accompanying gestures. The content delivered to this group mirrored that of the experimental group in terms of topics and themes

but was demonstrated through conventional teaching methods. Common techniques include listening to the teacher and repeating things. Regardless of the use of games, these activities mainly relied on auditory reception and verbal repetition.

Data collection

Two primary methods were used to collect data: the intonation test and observation. Based on the WIDA Speaking Test format designed by the World-Class Instructional Design and Assessment (WIDA) Consortium, the researchers created an intonation test for these young learners (for more details, please visit https://wida.wisc.edu/). The test was customized to serve the purposes of the current study. The test had two tasks: describing pictures and responding to everyday prompts about topics such as family and hobbies. The evaluation was conducted based on the WIDA rubrics with some additional aspects. There were five rubrics: linguistic complexity, language control, stress patterns, rhythm, and fluency. The assessment was carried out by an English native speaker who was informed of the criteria for marking without knowing which group was the experimental or control group.

The second instrument was observation. During the 16-session observation phase, learner interactions and learning processes were meticulously recorded using a structured observation sheet. The purpose of this tool is to capture classroom dynamics, learner participation, and the effectiveness of a gestural teaching approach in learning intonation and non-verbal cues. This detailed information could provide evidence for further analysis of the impact of the gestural method on students' intonation mastery and overall learning experience. In this way, it could offer valuable insights for understanding this gestural approach in early language acquisition.

Data analysis

For the quantitative data, T-tests were run using SPSS 23. The purpose was to analyze pre-test and post-test scores. This analysis could detect significant differences in intonation between control and experimental groups. In other words, these significant differences could indicate the effectiveness of the gesture-based approach in teaching intonation among these very young learners. Content analysis was utilized to analyze the qualitative data. The researchers carefully read the information recorded in the observation sheet many times for analysis. The main themes were identified based on the key topics in the observation sheet. This could offer insights into learners' reactions to the gesture-based teaching approach.

Several rigorous measures were taken into consideration to ensure the reliability and validity of the study. First, the lesson plans for the two groups were validated by an experienced English teacher. This expert made sure the plans matched learning objectives and were uniform in content. Instruction time was identical in the two groups. The only different variable was the use of gestures. Second, the intonation tests were customized and adapted from standardized WIDA assessments. This ensured the validity of the tests. Finally, qualitative data from observations was gathered using a triangulation method. In this way, qualitative data complemented the quantitative data by providing deeper insights into student engagement in addition to the effectiveness of the gesture-based approach.

Ethical Considerations

Ethical considerations were carefully addressed to uphold the integrity of the research. Parents or guardians were fully briefed on the study's purpose, procedures, and their right to withdraw participation at any time. After that, informed consent was obtained. The physical and psychological well-being of the young participants were also guaranteed. The study also ensured confidentiality through secure data management practices and maintained transparency regarding the research's nature, potential risks, and benefits.

Results/Findings

In response to the first research question regarding whether very young EFL learners enhance their intonation through gesture-based instruction, the findings indicate that these learners do indeed show improvement. Initially, both groups demonstrated comparable intonation abilities, as indicated by the pre-test scores with a t-value of 0.619 and a p-value of .539, showing no significant differences at the study's onset.

Table 1

Within-group Mean Difference between pre-test and post-test for the two groups

Scores				T-test		
	Mean	*SD*	*Mean Difference*	*df*	*t*	*Sig. (2-tailed)*
Pretest-CG	7.15	1.65	0.00417	23	.042	.967
Posttest-CG	7.75	1.39				
Pretest-EG	8.04	1.85	0.51200	24	6.04	.000*
Posttest-EG	8.58	1.54				

*p< .05 level

Post-intervention, significant improvements were observed in the EG's intonation. The paired T-test results showed that the EG's post-test scores (Mean=8.58, Standard Deviation=1.54) were significantly higher than their pre-test scores (Mean=8.04, Standard Deviation=1.85), with a t-value of 6.04 and a p-value of .000. The CG also saw improvements, though less pronounced. Further analysis using independent sample T-tests revealed that the EG significantly outperformed the CG in post-test intonation performance, with a t-value of 2.087 and a p-value of .042. This indicates the effectiveness of gesture-based teaching in enhancing intonation skills among very young EFL learners.

Table 2

Between-group Mean Difference for the pre-test and post-test

					95% Confidence Interval	
	SE Difference	*df*	*t*	*Sig. (2-tailed)*	*Lower*	*Upper*
Pre-test	.311	47	0.619	.539	-.701	1.324
Posttest	.865	47	2.087	.042*	.031	1.699

*p< .05 level

In response to the second research question regarding learners' reactions during learning

intonation with a gesture-based approach, analysis of qualitative data revealed that the class showed active engagement and participation. Initially, students seemed to show unfamiliarity with coordinating gestures and speech. The teachers had to remind them consistently and repeatedly in a gentle and playful manner. Gradually, the learners became curious and excited about demonstrating their own body movements in a fun way. They were shifting from reserved behaviors to more participation. Later on, they became disciplined and willing to synchronize gestures with speech. From their facial expressions and active participation via hand raising and laughter, the atmosphere in the classroom was livelier. Their positive reactions and engagements during the intervention indicate the effective implementation of this gesture-based approach.

Despite the benefits, there were some challenges to implementing this gestural approach. Initially, some of the learners were distracted and showed a lack of cooperation. Some of them made noise during class because they were uncontrollably active. In contrast, some were overly reserved. These obstacles were unavoidable because, at this point, these learners tended to love playing games and having fun. Under this circumstance, the teacher had to exhibit considerable patience and adaptability to manage the classroom. Sometimes, teachers had to use rewards to motivate learners' participation. The overall findings of this study suggest that gesture-based instruction could improve the learner's engagement in learning and their ability to perform English intonations effectively, regardless of some initial challenges. This suggests that incorporating gestures into intonation instruction can be an effective strategy for enhancing English skills among Vietnamese very young learners.

Discussion

This study sought to explore the effectiveness of integrating gestures into intonation teaching for very young learners in Vietnam. The experimental group was taught intonation with gesture-based methods, while the control group was taught intonation with traditional methods. The results indicate that pupils in the experimental group displayed notable improvements in intonation accuracy when compared to their counterparts in the control group. Despite equal amounts of time on tasks, the intonation scores of the experimental group showed better improvements.

This result was consistent with those of previous research, which also observed the benefits of gestures in teaching English pronunciation (e.g., Tellier, 2008; Iizuka et al., 2020). These studies showed that gestures could enhance learning. In other words, providing visual and kinetic reinforcement can help learners master intonation. Those learners who are young with limited memory spans can better retain and recall language patterns, particularly intonational patterns, thanks to the use of gestures. Moreover, what was discovered in the current study was in line with the findings of Smotrova (2017) and Girsang et al. (2021). These researchers suggested that using gestures with speech could promote more fluent speech and remove the monotonous tone, resulting in more native and natural output.

Furthermore, qualitative data in the study also indicated that the gesture-based approach could enrich the classroom atmosphere. Integrating gestures in producing intonational patterns could

be embedded in games, making intonation lessons lively and interactive. The activities could create a game-like and engaging learning environment for these young learners. Besides, this approach fostered active participation and enthusiasm among learners keen to mimic and creatively adapt gestures. As a result, they could master intonation or language fluency more effectively. The dynamic interaction within the classroom deepened the bond between learners and teachers and among the pupils themselves via fun physical and verbal activities. This collaborative and supportive educational environment featuring an enjoyable atmosphere is critical in helping young learners master the L2 language. Taken together, using gestures to teach intonation to very young learners was found to be beneficial for learners mastering intonation patterns and experiencing a pleasant learning atmosphere. This lays the foundation for achieving fluency of speech and strengthening memorability of speech in English.

Conclusions

In conclusion, this paper reported the results of an investigation into the effects of gesture-based instruction on the intonation of 49 very young Vietnamese EFL learners aged 4 to 6. The study was conducted at a language center in Ho Chi Minh City. The findings demonstrated that learners who received gesture-integrated teaching significantly improved in intonation accuracy compared to those taught with traditional methods. The results also showed that this method enhanced the learners' intonation and increased their enthusiasm for English classes. The use of gestures was found to facilitate language acquisition effectively by capturing the students' attention and enhancing their focus. This reflects the natural language acquisition processes observed in young learners.

The study has the significant pedagogic benefits of integrating gestures in teaching intonation to very young EFL learners. Given the benefits of gestures in teaching intonation, teachers should implement this approach via various activities, particularly game-based tasks, to maximize its benefits. The implementation of gestures in teaching intonation can help capture attention from learners and also help learners enhance memory retention and linguistic understanding. At the same time, learners' interest in language is also stimulated thanks to this engaging learning environment. For learners, the gesture-based method proves particularly engaging and effective, catering to their limited attention spans and preference for interactive learning. It utilizes auditory and visual stimuli to maintain focus and deepen cognitive processing, making the learning experience impactful and memorable. Suffice it to say that this multimodal approach not only aids retention but also makes the learning process enjoyable, encouraging active participation and physical involvement, which are critical for young learners. For researchers, these findings open new avenues for exploring the efficacy of gesture-based language teaching further. There is potential for studies that examine different types of gestures and their specific impacts on various aspects of language learning, such as pronunciation, rhythm, and fluency.

However, the study acknowledged several limitations. First, the demographic information of the participants, who were very young Vietnamese learners, may restrict the generalizability of the findings to other settings. Second, the duration of the study, which was two months with 16

sessions, was relatively short, which raises questions about the long-term effect of gesture-based teaching methods. Finally, the primary use of observation for data collection may have missed other aspects of classroom interactions that video recordings could capture.

There are some recommendations. Future studies should involve learners from different age groups, proficiency levels, and cultural backgrounds to enhance the generalizability of the findings. Moreover, the duration of intervention can be extended to obtain more comprehensive data on how the sustained use of gestures influences language acquisition over time. Lastly, future work should combine video analysis with other qualitative methods, such as interviews and learner diaries, to get deeper insights into learners' perceptions and experiences of gesture-based teaching. This could provide a more robust understanding of how gesture-based teaching can be effectively implemented to support L2 development.

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