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Research Articles

Communication Immediacy: Behaviors and Perception in a Thai Instructional Context
- *Atitaya Wiengnil, Jaray Singhakowinta*

Exploring Teachers' Perceptions Towards the Integration of AI Tools in the Language Classroom
- *Rusma Kalra*

The Effects of Home-Based English Language Activities on Thai Preschoolers' English Vocabulary Development: A Study of Thai Preschoolers with Limited English Proficiency Parents
- *Poowadol Srimalee*

Gender and Situational Variation of Pitch Dynamism in Thai Speakers
- *Athit Wu*

Academic Article

Translanguaging Pedagogy for Meaning Making through Classroom Interactional Competence in Thai EMI Context
- *Aummaraporn Nooyod, Eric A. Ambele*

Book Review

Exploring intercultural communication: Language in action
- *Pa Pa Soe*

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NIDA Language and Communication Journal is the official journal of the Graduate School of Language and Communication, National Institute of Development Administration. The journal, ranked in the first tier of Thai Journal Citation Index (TCI), is currently published as a periodical, with two issues annually (June and December). The purpose of this journal is to disseminate information of interest to language and communication scholars, and others interested in related social sciences. The journal presents information on theories, researches, methods, and ideas related to language and communication as well as related interdisciplinary social sciences. The editors welcome a wide range of academic papers, including research articles, review articles, and book reviews.

Note from the Editor

Greetings from *NIDA Journal of Language and Communication* (*NIDAJLC*). The journal is committed to publishing quality research and academic papers in the areas related to language and communication in various contexts. We welcome both disciplinary and interdisciplinary endeavours that pushes the boundaries of humanities and social sciences.

True to our mission, this issue touches upon an array of explorations, examining language as communication in an instructional context, the language classroom as a setting to explore teachers' perceptions, vocabulary as a specific area of English language development, and language in the broader social context, focusing on the specific issue of gender. The four research papers adopt wide-ranging perspectives and methods, revealing insights that contribute to advancement in the field of language and communication studies as well as other related areas such as language teaching and sociophonetics.

Not only does the research yield academic contributions, but it also addresses a number of contemporary issues, thereby potentially offering practical solutions. The first paper by **Wiengnil and Singhakowinta** explores communication immediacy as a means to promote positive relationships between teachers and students, providing a context that is conducive to more effective language learning. Another pressing issue in language teaching and learning is the use of AI in the language classroom. Though the benefits of AI have been widely discussed, implementation remains limited. **Kalra** draws our attention to teachers' perceptions as one of the determining factors. **Srimalee**, addressing the same issue of language learning, takes us outside of the classroom context investigating home-based English language activities among preschoolers as one of the ways to develop English language skills from an early age. **Nooyod and Ambele**'s academic paper gives a review of translanguaging as a strategy to improve classroom interaction. The three research papers and one academic paper attend to the urgent need to improve Thai students' English language skills and proficiency level which has been trailing behind that of neighbouring countries over the last couple of years. On a different note, the last paper by **Wu** presents a sociophonetic study, relating human sound with the "trendy" issue of gender, gender variation, and gender in interaction. The study compares perceptual views and results from rigorous phonetics and phonology and offers fresh insights into linguistic realization of gender in communication and interaction. The issue concludes with **Pa Pa Soe**'s review of the book, *Exploring Intercultural Communication: Language in Action* by Zhu Hua for anyone interested in intercultural communication and research.

Enjoy reading and have fun researching. See you in the next issue!

Savitri Gadavanij
Editor

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Communication Immediacy: Behaviors and Perception in a Thai Instructional Context

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Abstract

Teachers' communication immediacy arguably fosters and maintains positive relationships between teachers and students. Recognizing that not all communicative behaviors are universally consistent or understood, this study aimed to investigate instructors' immediacy behaviors and students' perceptions of the effectiveness of those behaviors in inducing their perceived immediacy in a Thai university. The participants were 234 undergraduate students and two instructors. The collection of research data employed direct observation, questionnaires, and focus group interviews. The findings showed the engagement in various immediacy behaviors of the teachers at different levels of frequency. Students perceived the effectiveness of their teachers' immediacy behaviors in inducing their perceived immediacy which resulted in reducing interpersonal distance between teachers and students. Cultural influences, in addition to the implication of the findings, were discussed.

Keywords: immediacy; instructional communication; perceived immediacy

Introduction

In instructional communication, regardless of the subject matter, communication serves as a tool to facilitate teaching and learning. Studies in this field focus on the interaction between teachers and students to improve both student learning and teacher effectiveness. Immediacy behaviors by instructors, as highlighted by researchers in instructional communication over the past decades (Furlich, 2014; McCroskey, 1994; Millette & Gorham, 2002), play a crucial role in fostering positive teacher-student relationships and enhancing student engagement in learning activities, potentially leading to improved learning outcomes.

Regarding the relationship between the communicative behaviors and the relational impact on the communication partners, Gurrero et al. (2013) stated that the communicative behaviors would affect the development of relational closeness only when the perception toward a behavior is acknowledged by the message receivers. Likewise, Kelly (2012) asserted that the decrease of psychological distance caused by

the perception of immediacy was a two-fold process. Message receivers should perceive the immediacy being conveyed through a particular immediacy behavior from the message sender in the first place in order to decrease the sense of distance and enhance the perception of closeness. If the receiver fails recognize the immediacy conveyed through the communicative message, the effect on reducing relational distance and strengthening interpersonal relationship would not be achieved. The mediator of the two constructs, immediacy behaviors and the impact on psychological distance, is called perceived immediacy.

Although previous literature on communication immediacy has confirmed the relationship between the immediacy behaviors of the teachers and the relational and affective outcome in students, the measurement seemed to have been done on a direct association between a set of immediacy behaviors and relational or affective effects such as motivation, teacher credibility, and self-disclosure on the communication partners (Barahona Guerrero, 2017; Christensen & Menzel, 1998; Ellis, 2004; Frymier & Houser, 2000; Furlich, 2014; Hsu, 2010; Pribyl et al., 2004; Velez & Cano, 2008; Witt et al., 2004). This, to some extent, might lead to conceptual confusion as a particular communication behavior might not receive similar responses among individuals in different circumstances. An examination into the immediacy behaviors and the perceived immediacy, the mediating effects, in the message receivers would contribute to a better understanding of this matter within given contexts. Therefore, this study aimed at identifying instructors' immediacy behaviors in classroom instruction and exploring the effectiveness of immediacy behaviors of the instructors in inducing students' perceived immediacy.

Immediacy in Context

Originally introduced to the field of communication study by Albert Mehrabian (1966), immediacy has been a subject of interest for communication scholars for decades. Mehrabian's Immediacy Principle was related to the typical behaviors people engaged in during their communication interactions. The principle stated that "people are drawn toward persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer" (Mehrabian, 1971, p. 1). This underscores Mehrabian's perspective of immediacy as a manifestation of liking, demonstrated through various communication behaviors.

According to Richmond and McCroskey (1992) and Richmond et al. (2003), Mehrabian's concept of immediacy served as the foundation for investigating the field of instructional communication. However, the focus has since shifted to the use of immediacy behaviors to induce positive relational effects (e.g., liking) rather than emphasizing the psychological constructs that could prompt these behaviors.

In instructional communication contexts, immediacy, as defined by Richmond et al. (2018), pertains to the perception of psychological or physical closeness between teachers and students, leading to a reduction in distance between them. This perception is influenced by both verbal and nonverbal immediacy behaviors, which signal the teachers' willingness to approach and be approached by their students.

Immediacy behaviors which were found in classroom communication included both verbal and nonverbal communicative behaviors. Gorham (1988) mentioned a set

of verbal messages utilized by teachers in instructional contexts. These verbal cues can convey a sense of immediacy. These behaviors were available in Gorham's verbal immediacy measure, namely the Verbal Immediacy Behavior Scale which incorporated 17 items of verbally immediate behaviors such as using personal examples, inclusive pronouns (i.e., *we* and *our*), humor, and address forms (i.e., calling students by their names). These verbal messages were considered immediacy communicative cues as they carried the connotation of immediacy and thus fostered rapport between the communication partners: teachers and students.

In addition, nonverbal cues also play a crucial role in communication. Richmond et al. (2003) identified five categories of nonverbal behaviors that can convey a sense of immediacy in instructional communication. These categories include eye behavior (e.g., eye contact), body movement (e.g., moving around the classroom while teaching), proximity (e.g., moving closer to students when talking to them), tactile behavior (e.g., touching students on the shoulder or arm while talking to them), and vocalization (e.g., the use of a variety of vocal expressions when talking to the class). These nonverbal behaviors could signify the degree of psychological distance between people and cultivate the perception of immediacy.

As the current study is conducted in an instructional context, communication between instructors and students is a primary emphasis. Communication immediacy in this study refers to the relational communication construct which can be expressed through both verbal and non-verbal immediacy behaviors. Immediacy behaviors are those behaviors that communicate warmth and positive affect, express willingness to engage in interaction, and decrease psychological distance between the interlocutors (teachers and students in this circumstance). The perception of these immediacy messages would foster a sense of positive relational closeness and contribute to an enhanced learning experience for the students.

Perceived Immediacy as a Mediator

The concept of perceived immediacy was originally proposed by Kelly (2012), referring to the mediating perceptions of the degree of psychological closeness by a message receiver toward the message sender. This perception can be prompted by immediacy behaviors such as sharing personal examples, using inclusive pronouns (e.g., *we* and *our*), making eye contact, keeping close proximity, and addressing people by their names. Given that not all immediacy behaviors inevitably result in identical perceptions across different individuals, Kelly (2012) asserted that investigating the mediation between these behaviors and their associated outcomes is valuable. This investigation helps to understand how these behaviors are perceived and how they can be suitably applied in different contexts.

As previously mentioned, evidence from communication literature has confirmed the relationship between communication immediacy and the affective outcome between the relational partners. Despite the considerable number of immediacy studies conducted for over decades, Kelly (2012) and Kelly et al. (2015) have raised concerns about the depth of understanding of the theory. This lack of understanding could potentially cause confusion regarding the concepts of immediacy behaviors and perceived immediacy. The concern arises from the fact that not all

individuals perceive a particular immediacy behavior in the same way. Instead, they react based on their perception of the immediacy message conveyed through a specific behavior, rather than responding directly to the behavior itself. Previous studies investigated the relationship between the immediacy behavior inputs and the relational and affective outcomes (e.g., liking, self-disclosure, and motivation). However, these studies often overlooked the psychological mediator, or perceived immediacy, as they directly examined the association between a set of behaviors conveying immediacy and affective outcomes (Barahona Guerrero, 2017; Christensen & Menzel, 1998; Furlich, 2014; Hsu, 2010; Pribyl et al., 2004; Velez & Cano, 2008; Witt et al., 2004). The frequency of occurrence might indicate the presence of immediacy behaviors, but it provides little insight into the psychological impact on message receivers. Therefore, to thoroughly investigate communication immediacy, both immediacy behaviors and perceived immediacy must be considered. This comprehensive approach is especially important in specific contexts, such as Thailand, where empirical reports on both behaviors and perceptions of these behaviors remain limited.

Communication Immediacy through Cultural Perspectives

Perceived immediacy of message receivers determines their response to particular immediacy behaviors from the message sender. According to Chen and Starosta (2005), the underlying rule governing both verbal and nonverbal human communication is culture. Therefore, understanding cultures is crucial for comprehending communication characteristics within specific societies.

Andersen (2012) explained the relationship between the degree of immediacy and cultures using the notion of contact culture developed by Hall (1966). Since immediacy relates to the expression of closeness, intimacy, and willingness in communicative interactions, cultures that embrace considerable expression of immediacy are regarded as contact cultures. Anderson (2012) asserted that people from contact cultures tend to stand closer and engage in more frequent physical contact compared to those from low-contact cultures. In contrast, individuals from low-contact cultures maintain a wider interpersonal space and engage in less frequent physical contact.

In addition, Andersen (2012) also elaborated on the influence of context culture, as described by Hall (1976), influences the communicative behaviors among people from different backgrounds. Context variations addressed differences in communication styles, particularly the directness of the communicative messages. People from high context cultures, especially those from Asian countries such as China, Japan, Korea, and Thailand, tend to be implicit and rely more on non-verbal communication. As a result, individuals from high-context cultures are adept at detecting and understanding non-verbal cues and subtle messages that are not explicitly expressed, such as true feelings or opinions. In contrast, low-context cultures are more expressive and explicit. Individuals from low-context cultures use more verbal cues and tend to be more direct in their communication.

Further to Hall's (1966) classification of contact cultures and Hall's (1976) concept of context orientation, immediacy communicative behaviors can also be

understood through different cultural dimensions as proposed by Hofstede (2001), including individualism versus collectivism and power distance.

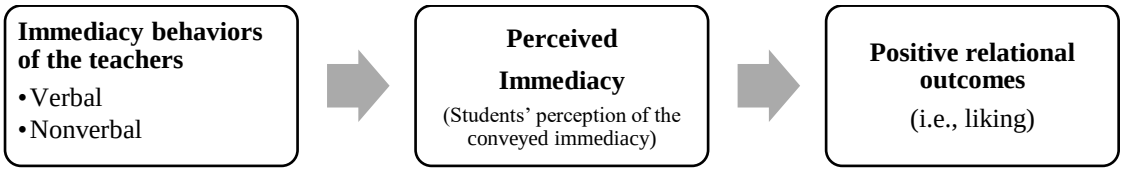
Collectivism and individualism are cultural orientations that explain how communication is influenced by one's relationship with others. According to Andersen (2012), individualists tend to be independent, verbally and emotionally expressive, and maintain more interpersonal distance. In contrast, collectivism emphasizes group cohesion, proximity, and conformity to collective norms, often suppressing extreme emotional expression. Cutrone (2005) found that collectivists demonstrate supportive communicative behaviors, such as nodding to show attentiveness during conversations, reflecting their orientation toward group harmony. In essence, collectivists prioritize group unity, whereas individualists prioritize independence and self-expression.

Cultural differences in power distance, the degree of willingness of people to accept the inequality of power distribution within society, significantly influence communicative behaviors, as discussed by Samovar et al. (2014). Societies with low power distance emphasize equality among individuals, whereas high power distance cultures place importance on acknowledging status differences and unequal power distribution. Andersen (2012) observed variations in tactile behaviors between these cultural systems, noting that physical contact, such as touch, is often avoided in high-power distance societies due to its perceived inappropriateness. Furthermore, Andersen (2008) also observed that subordinates in high-power distance cultures display visible bodily tension when interacting with superiors, often smiling as a gesture of politeness and deference. This hierarchical relationship was also evident in the classroom context of the cultures with large power discrepancies, as reported by Gudykunst and Kim (1992). For example, in Asian cultures students are expected to exhibit modest and deferential behavior toward their teachers.

Theoretical Framework

Effective communication can foster a better relationship between individuals and consequently lead to favorable outcomes in various circumstances. In an instructional context, immediacy behaviors are communicative behaviors that convey immediacy (e.g., warmth and willingness) in interactions. These behaviors have the potential to promote engagement between teachers and students (Richmond et al., 2018). Immediacy behaviors are broadly classified into verbal forms (Gorham, 1988) and nonverbal immediacy behaviors (Richmond et al., 2003). Perceived immediacy, as proposed by Kelly (2012), acts as a mediator between immediacy behaviors and relational outcomes. This perception is prompted by immediacy behaviors, causing message receivers to respond based on how they perceive these behaviors, rather than responding directly to the behaviors themselves. Thus, when a message receiver perceives the conveyed immediacy (indicating the willingness to approach and be approached by the communication partner) through the communicative behaviors of the sender, this perception can potentially reduce the relational distance between them. Subsequently, this can influence how the message is received and responded to, as illustrated in Figure 1.

Figure 1
Theoritecal Framework



Since behaviors are perceived differently by individuals, investigating both immediacy behaviors and perceived immediacy, which mediate how message receivers respond, enhances understanding within specific contexts. Therefore, this study aimed to investigate instructors' immediacy behaviors in a Thai university and their effectiveness in inducing students' perceived immediacy. The two research objectives were: (1) to identify instructors' immediacy behaviors in a Thai university context, and (2) to explore the effectiveness of immediacy behaviors of the instructors in inducing students' perceived immediacy.

Methodology

The research design utilized a mixed methods approach incorporating both quantitative and qualitative studies to address the two research questions: (1) *What are the immediacy behaviors that instructors use in their classroom instructions?* and (2*) What are the students' perceptions of the effectiveness of the instructors' immediacy behaviors in inducing their perceived immediacy?* The data collection techniques used included direct observation, survey questionnaires, and focus-group interviews.

Participants

The study included two Thai instructors and 234 Thai students from a university in Thailand. The instructors were selected using non-probability sampling, specifically purposive sampling, for direct observation. Both instructors were Thai, with one female and one male informant instructor.

Student participants were selected using a non-probabilistic purposive sampling approach, with 234 students invited to participate in the questionnaire administration. This included 36 male students and 198 female students. Participants were from different academic years: 50 sophomores, 114 juniors, 68 seniors, and 2 fifth-year students. All participants were enrolled students who had experienced on-site classroom learning and were studying in a public university in northern Thailand during the data collection period (first semester of the academic year 2021).

Direct Observation

Two instructors were observed for their communication behaviors during their classroom instruction using the direct observation checklist for instructors' immediacy behaviors. The checklist consisted of 29 items of immediacy behaviors adapted from Gorham's (1988) verbal immediacy scale and Richmond et al.'s (2003) revised-nonverbal immediacy measure. The 29 items of immediacy behaviors were classified

into 15 verbal behaviors and 14 nonverbal behaviors. The list of immediacy behaviors is similar to the Immediacy Behavior Questionnaire and Perceived Immediacy Questionnaire as shown in Table 1. However, one item, "*address me by name or nickname"*, was excluded from the direct observation checklist as the observed data was collected by the researcher, and there was item number 5 "*address students by name or nickname*" captured the data regarding how the teachers addressed their students in the classes.

The immediacy behaviors were recorded using partial interval recording approach (PIR). According to Pustejovsky and Swan (2015), PIR involves dividing the observation period into intervals, during which observed behaviors are rated dichotomously (yes/no) based on whether they occurred in each interval. In this study, each interval lasted for 30 minutes.

As data collection took place during the COVID-19 pandemic, only laboratory classes were conducted on-site, following the university's policy. The observations were carried out in laboratory classes taught by two instructors: two classes were taught by male instructor with 12 and 20 students (lasting two hours and five hours respectively), and two classes were taught by the female instructor, each with 8 students (lasting two hours per class meeting). Thus, a total of 22 intervals were observed: 14 intervals from the classes taught by the male instructor and 8 taught by the female instructor. All class meetings were conducted in Thai.

The direct observation was conducted with the researcher acting as a complete observer. Data collection was overt, as the instructor informants were aware of the observation's purpose and the researcher's presence in their classes. However, they were not asked to modify their behaviors. Therefore, the obtained data reflects the actual immediacy behaviors the instructors engaged within their classroom environments.

The data from the direct observation checklist were analyzed manually, counting the frequency of the intervals at which the behaviors occurred and reporting the percentage of their occurrence to capture the data regarding the actual immediacy behaviors exhibited by the instructors.

Questionnaires

The Immediacy Behavior Questionnaire and Perceived Immediacy Questionnaire were administered to 234 student participants form different classes. The two questionnaires consisted of 30 items of immediacy behaviors (16 verbal and 14 nonverbal behaviors) in a five-point Likert scale adapted from Gorham's (1988) verbal immediacy scale and Richmond et al.'s (2003) revised-nonverbal immediacy measure, as shown in Table 1.

Table 1

Immediacy Behaviors

	Immediacy Behaviors	Type of Behavior
1.	Use personal examples or talks about experiences she/he has had outside of class.	Verbal
2.	Ask questions or encourages students to talk.	Verbal

	Immediacy Behaviors	Type of Behavior
3.	Get into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.	Verbal
4.	Use humor in class.	Verbal
5.	Address students by name or nickname.	Verbal
6.	Address me by name or nickname.	Verbal
7.	Get into conversations with individual students before or after class.	Verbal
8.	Initiate conversations with students before, after or outside of class.	Verbal
9.	Refer to class as "our" class or what "we" are doing.	Verbal
10.	Provide feedback on individual work through comments on papers, oral discussions, etc.	Verbal
11.	Ask how students feel about an assignment, due date or discussion topic.	Verbal
12.	Invite students to telephone, send a Facebook or Line message, email, or meet with him/her outside of class if they have questions or want to discuss something.	Verbal
13.	Ask questions that solicit viewpoints or opinions.	Verbal
14	Praise students' work, actions or comments.	Verbal
15.	Discuss about things unrelated to class with individual students or with the class as a whole.	Verbal
16.	Be addressed by his/her nickname by the students.	Verbal
17.	Gesture while talking to the class.	Nonverbal
18.	Lean toward students when talking to them.	Nonverbal
19.	Move closer to students when talking to them.	Nonverbal
20.	Look at the class while talking.	Nonverbal
21.	Smile at the class while talking.	Nonverbal
22.	Move around the classroom while teaching.	Nonverbal
23.	Be animated when talking to students.	Nonverbal
24.	Sit or stand close to students while talking to them.	Nonverbal
25.	Has a very relaxed body position while talking to the class.	Nonverbal
26.	Maintain eye contact with students when talking to them.	Nonverbal
27.	Use his/her hands and arms to gesture while talking to students.	Nonverbal
28.	Smile at individual students in the class.	Nonverbal
29.	Look directly at students while talking to them.	Nonverbal
30.	Use a variety of vocal expressions when talking to the class.	Nonverbal

Regarding the Immediacy Behavior Questionnaire, the participants were asked to recall an on-site class they attended and rate the frequency of each immediacy behavior exhibited by the instructor in that class ranging from 1 (never) to 5 (always).

The Perceived Immediacy Questionnaire was designed to assess the extent to which specific immediacy behaviors of instructors conveyed their willingness to approach and be approached by students. Participants were asked to indicate their perception of the effectiveness of each immediacy behavior of the instructors in expressing the instructors' willingness to approach and be approached by students on a 5-point scale, ranging from 1 (very ineffective) to 5 (very effective).

The quantitative data from the Immediacy Behavior and Perceived Immediacy Questionnaires were analyzed using descriptive statistics to calculate the mean and standard deviation. Each item of the questionnaires was analyzed separately to examine

the average frequency of occurrence for each immediacy behavior and to report students' perceptions of the behavior's effectiveness in expressing the instructor's willingness to approach or be approached by students.

Focus Group Interviews

Nineteen participants were recruited to the focus group interviews based on the results of the Perceived Immediacy Questionnaire to further explore insights regarding the data gained from the questionnaires. Ten student interviewees were those who scored the highest, and the other nine students scored the lowest in the Perceived Immediacy Questionnaire in order to obtain the most complete data from different groups of students. There were four focus group interviews with 4-5 students participating in each. The primary language for the interview was Thai in order to prevent difficulties that might occur because of a language barrier.

The interview protocol used as a guideline for the focus group interview consisted of two sections of questions: (A) the immediacy behaviors of the instructors (e.g., *Instructors' immediacy behaviors refer to instructors' behaviors that increase psychological closeness between instructors and students. What specific behaviors come to mind when you think of instructors' immediacy behaviors?*) and (B) the significance of the perceived immediacy as a mediator between immediacy behaviors and the development of positive relationships between students and their instructors (e.g., *How are teachers' immediacy behaviors significant to your relationship with your teachers?*)

Regarding the qualitative data from the focus group interviews, thematic analysis was conducted in order to obtain the findings related to teachers' immediacy behaviors and how they played roles in inducing students' perceived immediacy. According to Clarke and Braun (2013), thematic analytical process is divided into six consecutive stages of: familiarization with the data, coding, searching for themes, reviewing themes, defining and naming themes, and writing up. The data from the interviews were analyzed through this systematic six-stage process of thematic analysis.

Results

Immediacy Behaviors of the Instructors

The findings from the questionnaire revealed that all immediacy behaviors of the teachers were found although with different frequencies. Five behaviors occurred at a very high frequency: inviting students to contact the teacher via different channels or to meet with the teachers outside of class if they have questions or want to discuss something (M = 4.38, SD = 0.74); referring to class as *our class* or *what we are doing* (M = 4.28, SD = 0.84); maintaining eye contact with students when talking to them (M = 4.22, SD = 0.85); looking directly at students while talking to them (M = 4.22, SD = 0.81), and looking at the class while talking (M = 4.21, SD = 0.87). The behaviors with a very high level of frequency are summarized in Table 2.

Table 2

Instructors' Immediacy Behaviors at the Very High Level of Frequency from the Immediacy Behavior Questionnaire

Immediacy behaviors	Mean	S.D.	Type of behavior
12. Invite students to telephone, send a Facebook or Line message, email, or meet with him/her outside of class if they have questions or want to discuss something.	4.38	0.74	Verbal
9. Refer to class as "our" class or what "we" are doing.	4.28	0.84	Verbal
26. Maintain eye contact with students when talking to them**.**	4.22	0.85	Non-verbal
29. Look directly at students while talking to them**.**	4.22	0.81	Non-verbal
20. Look at the class while talking**.**	4.21	0.87	Non-verbal

However, the least frequently occurring behaviors found at the moderate level included being addressed by his/her nickname by the students (M = 3.26, SD = 1.33), moving around the classroom while teaching (M = 3.26, SD = 1.21), leaning toward students when talking to them (M = 3.25, SD = 1.15), getting into conversations with individual students before or after class (M = 3.23, SD = 1.20), and moving closer to students when talking to them (M = 3.18, SD = 1.21), as presented in Table 3.

Table 3

Instructors' Immediacy Behaviors at the Moderate Level of Frequency from the Immediacy Behavior Questionnaire

Immediacy behaviors	Mean	S.D.	Type of behavior
16. Be addressed by his/her nickname by the students.	3.26	1.33	Verbal
22. Move around the classroom while teaching.	3.26	1.21	Non-verbal
18. Lean toward students when talking to them.	3.25	1.15	Non-verbal
7. Get into conversations with individual students before or after class.	3.23	1.20	Verbal
19. Move closer to students when talking to them.	3.18	1.21	Non-verbal

Regarding data obtained from the direct observation, all 29 behaviors on the checklist were observed, albeit with varying frequencies. As depicted in Table 4, from the total 22 observed intervals, the highest frequency (22 intervals, 100%) of the observed immediacy behaviors were seven nonverbal behaviors, which included: (1) gesturing while talking to the class, (2) moving around the classroom while teaching, (3) sitting or standing close to students while talking to them, (4) having a very relaxed body position while talking to the class, (5) maintaining eye contact with students when talking to them, (6) using his/her hands and arms to gesture while talking to students, and (7) looking directly at students while talking to them.

Table 4
Instructors' Immediacy Behaviors with the Highest Frequency from the Direct Observation

Immediacy Behaviors	Intervals	Percentage	Type of Behavior
17. Gesture while talking to the class.	22	100	Nonverbal
22. Move around the classroom while teaching.	22	100	Nonverbal
24. Sit or stand close to students while talking to them.	22	100	Nonverbal
25. Have a very relaxed body position while talking to the class.	22	100	Nonverbal
26. Maintain eye contact with students when talking to them.	22	100	Nonverbal
27. Use his/her hands and arms to gesture while talking to students.	22	100	Nonverbal
29. Look directly at students while talking to them.	22	100	Nonverbal

On the other hand, as listed in Table 5, the findings revealed five behaviors that occurred least frequently, totaling four intervals or 18.18% out of the total 22 intervals. These behaviors were all verbal behaviors including (1) initiating conversations with students before, after or outside of class; (2) asking how students feel about an assignment, due date, or discussion topic; (3) inviting students to telephone, send a Facebook or Line message, email or meet with him/her outside of class if students have questions or want to discuss or clarify any points; (4) asking questions that solicit viewpoints or opinions; and (5) being addressed by his/her nickname by the students.

Table 5
Instructors' Immediacy Behaviors with the lowest Frequency from the Direct Observation

Immediacy Behaviors	Intervals	Percentage	Type of Behavior
8. Initiate conversations with students before, after, or outside of class.	4	18.18	Verbal
11. Ask how students feel about an assignment, due date, or discussion topic.	4	18.18	Verbal
12. Invite students to telephone, send a Facebook or Line message, email, or meet with him/her outside of class if students have questions or want to discuss or clarify any points.	4	18.18	Verbal
13. Ask questions that solicit viewpoints or opinions.	4	18.18	Verbal
16. Be addressed by his/her nickname by the students.	4	18.18	Verbal

According to the data from the interviews, students revealed that the sense of immediacy could be expressed through the following verbal behaviors of the teachers: making small talks with students, addressing individual students with their names, using inclusive pronoun *we* or *our* when referring to the entire class, checking if students can

follow the lesson, repeating or recapping the answers of the students, and encouraging students to speak out in the class as illustrated by the following statements from the interviewees:

> *I like it when teachers engage in small talk with the class before starting the lesson. This could be about current news or campus events, providing a refreshing start to the class. (S2)*
>
> *When teachers refer to us (the whole class) as 'we' or 'our class,' it gives the impression that the teachers consider themselves part of our group, and it makes me feel less distant. (S6)*
>
> *Instead of 'you', the teacher calls us by our names when it is specific to an individual student. (S14)*
>
> *I think of Ajarn __[the name of the teacher]__. He often repeated students' answers. I knew that he was truly listening to us (the students). I liked it when he encouraged students to speak up and repeatedly reassured the class not to worry about whether their answers were correct or not. He simply wanted to hear from the students. (S12)*

Students also mentioned different nonverbal cues that could express immediacy of the teachers, including eye behavior, smiling, kinesthetic movement, proximity, and tactile behavior. On the other hand, cautions and recommendations have also been mentioned regarding the engagement of some communicative behaviors that could potentially yield undesirable consequences. For example, while eye contact is generally viewed as an immediacy behavior, it might also be perceived as intimidating when accompanied by non-immediacy cues such as frowning or head shaking. To avoid this negative impact on the teacher-student relationship, eye contact should take place with some other immediacy behaviors such as head nodding or smiling. Physical touch was another issue raised during the focus group discussions. Many students reported that a slight tap on their shoulders by the teachers could communicate a supportive or an encouraging message. However, the issue of gender differences between teachers and students has also been discussed, as tactile contact can be sensitive in interactions between teachers and students of different gender.

Students' Perceptions toward the Effectiveness of the Teacher's Immediacy Behaviors in Inducing Perceived Immediacy

From the questionnaire, four immediacy behaviors were reported as very effective in expressing the instructor's willingness to approach and be approached by students. All of these four behaviors were nonverbal, including looking directly at students while talking to them (M = 4.26, SD = 0.79), being animated when talking to students (M = 4.21, SD = 0.86), maintaining eye contact with students when talking to them (M = 4.21, SD = 0.80), and using a variety of vocal expressions when talking to the class (M = 4.21, SD = 0.91), as shown in Table 6.

Table 6

The Very Effective Immediacy Behaviors to Express the Instructors' Willingness to Approach and Be Approached by the Students

Immediacy behaviors	Mean	S.D.	Type of behavior
29. Look directly at students while talking to them.	4.26	0.79	Non-Verbal
23. Be animated when talking to students.	4.21	0.86	Non-Verbal
26. Maintain eye contact with students when talking to them.	4.21	0.80	Non-Verbal
30. Use a variety of vocal expressions when talking to the class.	4.21	0.91	Non-Verbal

Considering the five categories of nonverbal immediacy behaviors identified by Richmond et al. (2003), these four behaviors can be classified as follows: (1) eye behaviors (e.g., *looking directly at students while talking to them* and *maintaining eye contact with students when talking to them*), (2) body movement (e.g., *being animated when talking to students*), and (3) vocalization (e.g., *using a variety of vocal expressions when talking to the class*). Notably, tactile behaviors and proximity cues were not found to have the same level of impact.

Out of the 30 items of immediacy behaviors, 25 behaviors were rated effective in conveying the instructors' willingness to approach or be approached by the students. Only one behavior, *being addressed by his/her nickname by the students*, was reported as neither effective nor ineffective to express the willingness of the instructors to approach and be approached by the students (M = 3.33, SD = 1.33).

However, none of the immediacy behaviors was found ineffective in expressing the willingness of the teachers to approach or be approached by the students. From the interviews, students' perceptions of the teachers' immediacy behaviors had an impact on both their perceptions of desirable teacher qualities such as empathy, openness, and approachability and the formation of positive relationships between teachers and students, as illustrated by the following statements from the interviewees:

> *To me, when the teachers are open to students' opinions, it shows they genuinely care about the diversity of students' needs and backgrounds and take them into consideration when teaching. Since students come from various backgrounds, their progress may not be the same at the same pace. (S11)*

> *These [immediacy] behaviors of the teachers showed that they were trying to approach and be friendly with the students. They bridged the gap between themselves and the students and also created an open environment for students to approach them. It was a mutual effort, where not only the teachers were friendly to students but also approachable, allowing students to reach out to them as well. (S2)*

This positive impression, in turn, contributed to academic benefits, including increased engagement in learning activities, reduced learning anxiety, and enhanced motivation for learning, as an interviewee noted:

> *With this positive perception, I felt that attending the class was enjoyable and relaxed even though the learning content might not be easy at all. It appeared that I was motivated to work hard and strive for excellent achievement in the course. (S4)*

Discussion

Instructors' Immediacy Behaviors

The findings revealed students experienced different immediacy behaviors, including both verbal and nonverbal cues, from their teachers at varying frequencies. Teachers had numerous opportunities to engage in these behaviors across a range of communication situations, from small talk before lessons to interactions during lectures and conversations after class. This may account for the higher frequency of some behaviors compared to others. Communicative cues such as the use of inclusive pronouns and eye contact were clear and explicit, making them easier for students to recognize.

Moreover, cultural background seemed to play a crucial role in the engagement of some particular immediacy behaviors. For example, the use of collective pronouns can be understood within the context of the collectivism cultural dimension (Hofstede, 2001). Collective pronouns such as *we* or *our* can express the teachers' intentions to foster inclusivity among all class members including both the teachers and students. This verbal immediacy behavior helps reduce distance between teachers and students, thereby strengthening the sense of collectiveness. In addition to this collectivist orientation, as noted by Cutrone (2005), backchanneling behaviors such as head nods, smiles, or indications of attentive listening are used in collectivistic cultures to show supportive engagement and interest in communication partners. The frequent engagement in eye behaviors, such as maintaining eye contact while interacting with students, identified in this study, can also be regarded as backchanneling behaviors indicating the attention and support of the listeners (teachers) to the speakers (students). These communicative cues such as using inclusive pronouns and backchannel behaviors, to some extent, reflect Thailand's collectivist cultural background, which emphasizes group cohesion.

One of the five least frequently occurring behaviors was the verbal practice of teachers being addressed by their nicknames. A plausible explanation for this phenomenon can be found in the influence of Thai culture. In Thailand, teachers are typically addressed by their professional title *Ajarn*, a neutral and respectful term of address. Although *Ajarn* can be followed by the teacher's full name or nickname specifically, addressing teachers simply as *Ajarn* does not diminish the level of respect conveyed. In addition, considering this practice through the lens of Hofstede's (2001) power-distance cultural dimension is relevant. Respecting hierarchy is a fundamental value in interactions between subordinates and individuals of higher status, particularly in high power-distance cultures. Addressing teachers with the professional title *Ajarn*

in the Thai context, which falls under the high power-distance cultural framework, reflects the respect that students hold for their teachers. This notion aligns with the findings of the study by Jenvdhanaken and Rangponsumrit (2020), who investigated cultural differences between Thai and Spanish teachers. Their research reported a greater level of power distance in Thai culture compared to Spanish culture, highlighting the use of *Ajarn* to address teachers as an example of the hierarchical relationship between teachers and students in Thailand

Additionally, leaning toward the students while talking to them and moving closer to students when talking to them were also the least frequently observed behaviors in the questionnaire. The proxemic issue was also raised during the interviews, where students expressed discomfort when teachers stood too close or within hand-reach distance. This incidence can be explained in light of low contact culture as described by Hall (1966), who classified cultures into high contact and low contact cultures according to the degree of interpersonal space between communicators. High contact cultures (e.g., South Americans and Arabs) tend to maintain closer interpersonal space and engage in more frequent physical touch, while low contact cultures (e.g., Asians), utilize a larger space in their interpersonal interactions. Given that Thailand falls within the low-contact cultural group, the act of a teacher moving too close to students might be perceived as inappropriate, potentially invading personal space and causing discomfort. In the context of this study, where all participants were Thai, it is reasonable to anticipate the adoption of a low-contact spatial manner in their interactions. Consequently, the frequency of these two proxemic behaviors was lower than others.

Moving around the classroom while teaching was rated as the least frequent occurrence in the questionnaire; however, it was observed most frequently during the direct observations. This contradiction in the data could be attributed to the class size. Moore et al. (1996) mentioned that smaller class sizes allow students to perceive the teacher's immediacy behaviors to a greater degree compared to larger classes with more students. Teaching a smaller class provides teachers with more space and time to interact with each student, which is a limitation in larger classes. In this study, the observations were conducted in laboratory classes with a small number of students and a considerable amount of space. Instructors were able to move around and visit each student's work station to discuss and monitor their assigned experiments. Consequently, the frequency of this immediacy behavior was high during the observations. However, the questionnaire findings may be influenced by larger class sizes, leading to lower observed frequency of this behavior compared to the direct observations.

Students' Perceived Immediacy Influenced by the Instructors' Immediacy Behaviors

Considering the findings of this study, the notable perceptions toward the effectiveness of the four nonverbal behaviors (i.e., *looking directly at students while talking to them*, *maintaining eye contact with students when talking to them*, *being animated when talking to students*, *and using a variety of vocal expressions when talking to the class*) might stem from being a high-context cultural society, similar to many other Asian countries (Hall, 1976). In terms of directness and explicitness of the

communicative messages, individuals from high-context cultures tend to employ a greater array of non-verbal cues and are able to understand implicit messages. This stands in contrast to individuals from low-context cultures, who generally exhibit a more direct and explicit communication style. D'souza (2018) studied students' perceptions of teacher immediacy behaviors within the Thai educational context. Thai students, both male and female, were similarly able to recognize the nonverbal immediacy behaviors of teachers. The influence of Thailand's high-context culture was identified in connection with a communication style characterized by indirectness and a reliance on nonverbal cues. Thus, as the context of the current study was Thailand, the influence of the high-context culture on the communication style of the participants could be anticipated. This is supported by the fact that eye behaviors, body movements, and vocal tones were found to be highly effective in eliciting the perceived immediacy among the participants.

However, concerning the exclusion of tactile and proximity communicative cues from the group of highly effective cues for inducing students' perceived immediacy, this outcome could be attributed to the influence of low-contact cultures (Hall, 1966) as previously discussed. Individuals who adhered to norms of the low-contact cultures maintain greater interpersonal distance and minimize physical touch during interpersonal interaction. Becoming too close spatially or engaging in excessive physical contact in such low-contact contexts could be viewed as an intrusion into personal privacy and thus deemed inappropriate. Consequently, in order to align with the appropriate norms within this low-contact cultural context and facilitate the development of smooth interpersonal relationships, teachers are expected to be aware of these limitations and integrate them as part of their code of conduct. The findings of this study are similar to those of Phondee et al. (2022), who investigated teacher immediacy behaviors in Thai secondary schools. The study reported that the practice of lightly touching students' shoulders or arms to express care and concern by the teachers was found at the lowest frequency, despite being categorized as an immediacy behavior.

In addition to the above mentioned low-contact cultural influence, Thailand is also characterized as a high power-distance society based on Hofstede's (2001) PDI. Within high power-distance cultures, there is a tendency to avoid tactile and close proxemic interactions. Moreover, Andersen (2012) reported that communicative behaviors involving physical contact, such as touching, are deemed inappropriate in interactions with superiors. Consequently, it is recommended that such instances should be avoided within high power-distance cultural contexts. Additionally, the researcher also noted that individuals in high power-distance cultures often engage in behaviors that demonstrate respect and appeasement toward those in higher positions. For example, these behaviors might include smiling more frequently (Andersen, 2008) or adopting a modest and deferential attitude toward teachers within a classroom setting (Gudykunst & Kim, 1992).

Students reported their perceptions of the positive qualities encompassed in the immediacy behaviors exhibited by their instructors. When instructors engage in immediacy behaviors, they tend to be perceived as empathetic, open-minded, and approachable. These perceptions can indicate the teachers' degree of approachability, which influences whether students choose to engage or avoid interactions with them. In

other words, students' perceptions of these affective qualities foster the development of a positive rapport between them and their teachers. This positive effect extends to the classroom atmosphere, creating an environment conducive to active student engagement in various activities. This finding aligns with Kelly's (2012) observations, which highlight the role of perceived immediacy as a mediator between immediacy behaviors and their impact on relationship development. Message receivers must first perceive the affective qualities conveyed through immediacy behaviors to determine the degree of relational closeness they are willing to establish with the message senders. Successfully establishing a close relationship between teachers and students consequently benefits the students' learning experience.

Conclusion and Recommendations

In summary, students reported varied experiences with different immediacy behaviors exhibited by their instructors at different levels of frequency. The findings highlighted five immediacy behaviors that instructors engaged in with a very high frequency including *inviting students to contact him/her outside of class for questions or discussions*, *referring to the class using the inclusive pronouns 'we' or 'our'*, *maintaining eye contact with students when talking to them*, *looking directly at students while talking to them*, and *looking at the class while talking*. The engagement in the immediacy behaviors of the teachers could induce perceived immediacy among students leading to a reduction in relational distance between teachers and students. Four communicative cues including eye behaviors (e.g., *looking directly at students while talking to students* and *maintaining eye contact with students when talking to students*), body movement (e.g., *being animated when talking to students*), and vocalization (e.g., *using a variety of vocal expressions when talking to the class*) were reported as highly effective in inducing students' perceived immediacy. In the context of this study, students' perceived immediacy was associated with qualities such as empathy, open-mindedness, and approachability that they perceived in their teachers. Cultural background appeared to play a crucial role in both the engagement and the perception of specific immediacy behaviors. For instance, the influence of the low-contact culture on interpersonal space utilization, collectivism demonstrated through the use of collective pronouns, and power distance reflected in the Thai practice of addressing teachers were all evident factors.

Awareness of this matter in a Thai context would therefore provide a more comprehensive understanding to the development of the communication immediacy theory. In the instructional context, focusing on immediacy behaviors enables teachers to adopt effective and appropriate communicative cues that foster relationships with their students. This positive relationship between teachers and students, in turn, enhances students' engagement in learning activities and supports their overall academic achievement.

Future studies related to instructional communication immediacy should be conducted with different groups of students or a larger sample size. This is in acknowledgement of the limitation of this study, which was conducted during the COVID-19 pandemic. Access to classes with a large number of students was, therefore, limited due to the preventive policy during the virus outbreak. The differences in class

sizes as well as demographic background of the samples might elicit different immediacy behaviors of the teachers and students' perceived immediacy toward certain behaviors.

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Exploring Teachers' Perceptions Toward the Integration of AI Tools in the Language Classroom

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Abstract

This research investigates English instructors' perceptions of the benefits and challenges associated with the integration of AI application tools into an English classroom at an international university in Thailand. Two primary research questions guide the study: (1) How do English instructors perceive the benefits of AI application tools? and (2) How do they perceive the challenges of integrating AI tools? The research mainly adopts a quantitative approach, utilizing a structured survey questionnaire developed based on existing literature. Additionally, semi-structured interviews with 20 randomly selected instructors provide qualitative insights. The findings indicate widespread adoption of AI-powered tools among instructors teaching English at this international university. Notably, language learning applications are the most utilized and the most notable challenge identified by participants is the apprehension that learners may develop excessive reliance on AI tools. This research provides comprehensive insights into perceptions surrounding the integration of AI application tools in English language classrooms at an international university in Thailand. These insights contribute to a deeper understanding of the benefits and challenges associated with AI tools in educational settings.

Keywords: AI in Education; teacher's perceptions of AI; English classroom

Introduction

Initial efforts to integrate technology into language education depended on conventional tools such as projectors and blackboards (Chun et al., 2016). The advent of computers in the 1970s and 1980s marked the initiation of a new era for educators who explored Computer-Assisted Language Learning (CALL) (Beatty, 2013; Chapelle, 2001; Levy, 1997). With the widespread use of the Internet in the 1990s, there was a global increase in language resources, incorporating multimedia elements to enhance interaction (Thorne & Phane, 2005). The introduction of mobile devices in the twenty-first century led to the creation of language learning applications (Mobile-Assisted Language Learning), enabling students to study languages flexibly and independently, at any time and location of their choice (Godwin-Jones, 2011; Kukulska-Hulme & Shield, 2008; Kukulska-Hulme & Viberg, 2018). There is currently a notable upswing in the interest in Artificial Intelligence (AI) within the education and training sector,

primarily attributed to its potential to transform the learning process. AI enables personalized learning, dynamic assessments, and meaningful interactions across online, mobile, or blended learning settings, making it a pivotal concept in the field (Zhang & Aslan, 2021). In the realm of English language learning and teaching, the spotlight is on AI-driven tools, such as the recently introduced Chat GPT, prompting considerable attention as stated by Alsadoon (2021).

Numerous studies have delved into the application of AI-powered tools in English-language learning, as evidenced by research conducted by Alhalangy and AbdAlgane (2023), Alharbi (2023), and Alsadoon (2021). Numerous studies indicate that incorporating AI tools into foreign language learning yields positive effects on learners' motivation (Moybeka et al., 2023), engagement, and academic performance (Khan et al., 2021; Kim et al., 2021). Specifically, AI-driven writing tools such as Quillbot have proven highly beneficial in offering instant feedback and correction suggestions for grammar, punctuation, and expression. They contribute to optimizing sentence structures, word choices, and tones, thereby enhancing the overall quality of the written content (Farhi et al., 2023; Xuyen, 2023). The integration of AI tools into English language learning has also been reported to enhance learners' listening, reading, and speaking skills (Adilbayeva et al., 2022; Ma, 2021). However, despite these positive aspects, some scholars have expressed concerns regarding potential negative impacts of AI tools on language learning, arising from overreliance, lack of human interaction, and a potential decline in critical thinking skills (Bui, 2022; Zimmerman, 2006). According to scholars, the effective implementation of new instructional technologies is closely tied to the attitudes of the teachers leading the lesson (Fernández-Batanero et al., 2021). Despite decades of professional development focused on integrating educational technology, a significant number of teachers still harbor negative views toward incorporating technology in the classroom and are reluctant to adopt it (Kaban & Ergul, 2020; Prensky, 2008b). Instead, they persist in using familiar materials and teaching methods, resisting anything that might lead to unfavorable outcomes (Tallvid, 2016). Furthermore, the anxiety associated with adopting new technologies can pose a hindrance (Bui, 2022; Zimmerman, 2006), impeding teachers' efforts to introduce technology within the learning environment.

Previous studies (Chen et al., 2020; Chounta et al., 2021; Francis et al., 2000) have primarily concentrated on assessing the effects of AI tools in language learning and teaching through the viewpoints of teachers, faculty members, and experts. However, there is a scarcity of research specifically investigating the perceptions of English language teachers in an international university context. With the ongoing progression of AI technology, its impact on the learning of foreign languages, particularly English, is gaining greater significance. It is essential to evaluate the perspectives of English language teachers regarding the incorporation of AI tools. Evaluating English language teachers' perspectives on AI tools is crucial for several reasons: understanding their effectiveness in teaching, guiding training programs for educators, enhancing student engagement through innovative methods, addressing ethical considerations related to AI use in education, allocating resources effectively, and overcoming potential barriers to adoption. This research aims to investigate the English instructors' perception of AI-driven language learning tools in the context of

EFL education at an international university in Thailand. The study seeks to understand instructors' perspectives on the benefits and challenges associated with these tools, as well as their expectations regarding the integration of AI tools into English language teaching and learning. The findings may contribute significantly to pedagogical practices by informing the development of tailored professional development programs for instructors. It can also guide the seamless integration of AI into curricula, support personalized learning approaches, and address ethical considerations crucial for effective and responsible use of AI in education.

The study aims to address two research questions:

1. How do English instructors perceive the benefits of AI application tools in English classrooms at an international university in Thailand?
2. How do English instructors perceive the challenges of AI application tools in English classrooms at an international university in Thailand?

Literature Review

Artificial Intelligence

AI is defined as a computer program or system that has intelligence (Chapelle, 2001). This includes artificially implemented computer programs that have human learning, reasoning, and perceptual abilities, since, as posited by Turing (1950), even machines can think like humans. Currently, the widespread use of AI is predominantly driven by machine learning algorithms, which dynamically generate and employ data-based models. Education, including STEM education, extensively employs AI to assist teachers in their roles as learning facilitators, academic assessors, and counselors through the analysis of education-related big data gathered from students, teachers, and schools (Cukurova et al., 2022). Furthermore, AI enhances assessment methods in traditional classrooms by furnishing timely information on students' learning progress, success, or challenges through the analysis of their learning patterns based on big data (Sánchez-Prieto et al., 2020). AI can provide insights inaccessible through traditional evaluation methods, identifying correct answers and revealing the learner's process leading to them.

Despite demonstrating its potential as an educational tool, questions persist on how AI facilitates meaningful and effective learning. Prior to AI's implementation in education, computer-based learning support systems, also known as intelligent tutoring systems (ITS), appeared promising. ITS was aimed to deliver personalized and step-by-step tutorials using information from expert knowledge models, student models, and tutoring models in well-defined subjects such as mathematics (Holmes et al., 2019). ITS is often considered a precursor to AI in education, offering valuable insights into the application of AI within the educational domain (Paviotti et al., 2013). ITS has been successfully employed in instructing various STEM subjects. For example, Beal (2013) utilized ITS to assess students' math skills by identifying problem-solving errors and presenting relevant problems. These problems were tailored to students' zone of proximal development and supported by integrated help resources. Similarly, Butz et al. (2006) demonstrated the effectiveness of ITS in enhancing students' engineering design skills. Their ITS incorporated an expert system that evaluated students' problem-

solving approaches and offered additional tutoring through interactive materials, thereby assisting students in achieving their learning objectives.

A common theme in several studies, including the examples stated above, is ITS's effort to provide scaffolding. Scaffolding is employed to make learning tasks more manageable and accessible (Hmelo-Silver et al., 2007), aiding students in improving their deep content knowledge and higher-order thinking skills. Scaffolding interventions can take various forms, such as feedback, question prompts, hints, and expert modeling (Kim et al., 2021) similar to what human tutors do in STEM education. The impact of each scaffolding format can vary depending on different learning contexts, performance levels, STEM disciplines, and anticipated outcomes.

Advantages and Disadvantages on AI-based Instruction

Al-Bakri (2021) examined the impact of AI on higher education within Arab countries. The study involved a sample of 100 participants comprising faculty members and students from various universities in the Arab region. Employing a quantitative approach, the study utilized a questionnaire as its primary research tool. Findings indicated several benefits of AI in higher education, including enhanced student engagement, facilitation of personalized learning, and improved efficiency. Nonetheless, the study also identified drawbacks, such as potential job displacement and ethical considerations surrounding the utilization of AI.

Al-Mashaqba (2020) explored the influence of AI on students' learning outcomes at Jordanian universities, involving a sample of 150 university students. Adopting a quasi-experimental approach, the researcher employed pre- and post-tests as the primary research tools. The findings indicated a positive impact of AI on students' academic performance. Specifically, students who engaged with educational tools based on AI demonstrated greater improvement in their academic achievements. The study recommended that Jordanian universities should incorporate AI tools into their educational systems to enhance student outcomes. Additionally, it emphasized the importance of providing adequate training and support for faculty members and staff to effectively utilize these tools.

Tsai, Kovanović and Gasevic (2019) explored the potential benefits and challenges associated with the integration of AI into higher education. The research involved a sample of 18 experts specializing in both AI and education. Adopting a qualitative approach, the study utilized semi-structured interviews as its primary research tool. The findings highlighted several advantages of AI in higher education, such as facilitating personalized learning, enhancing student engagement, and offering intelligent lesson systems. However, the study also identified certain challenges, including the necessity for extensive training for faculty members and staff to effectively utilize AI-based educational tools and concerns about potential biases in AI algorithms.

The research suggested that higher education institutions should carefully evaluate both the benefits and potential drawbacks of integrating AI into their educational systems before adoption. It also emphasized the importance of offering increased support and training to faculty members and staff on effectively utilizing AI-based educational tools, as well as addressing the legal and ethical concerns associated

with the use of AI in education. While previous studies have explored the impact of AI on student engagement, learning outcomes, and the challenges associated with AI adoption, this study focuses specifically on the perspectives of English language teachers regarding the incorporation of AI tools. By evaluating teachers' perceptions, this research aims to identify their concerns about the ethical and pedagogical implications of using AI tools in language teaching.

Teachers' Perceptions of Using Artificial Intelligence

A great deal of research has emphasized the significant role of a teacher's stance on technology use as a pivotal element in successful technology integration. Woodrow (1992) underscored the importance of maintaining a favorable attitude toward incorporating technology into teaching, while Prensky (2008a) asserted that the resistance or lack of enthusiasm among teachers toward technology presents a hindrance to effective integration.

The integration of AI into classrooms faces resistance primarily due to a considerable number of teachers, who harbor negative perceptions toward technology, opting not to employ it (Kaban & Ergul, 2020; Prensky, 2008a). Reasons for such reluctance include teacher apprehension about adopting new technologies (Zimmerman, 2006) and their inclination to adhere to familiar materials and methodologies, thus remaining within their comfort zone (Tallvid, 2016). This resistance poses challenges to the introduction of technology on-site.

Numerous studies exploring educators' perceptions of AI in education have consistently found that teachers commonly anticipate AI's capability to (a) enhance the teaching and learning process by utilizing digitalized learning materials and facilitating multimodal human-computer interactions and (b) address diverse learning challenges faced by individual students, tailoring instruction to their needs even in large classroom settings (Holmes et al., 2019).

Despite these educators' positive expectations of AI in education, researchers have indicated that before adopting AI in the classroom, teachers first need to learn how to use the technology and, most importantly, how to successfully integrate it into their curricula. They also need to understand the importance of AI and the affordances that it can bring to instruction so that they are open to integrating advanced technology into their lessons. Additionally, a great number of teachers and school officials have not yet experienced AI-based learning support and might simply recognize it as slightly more advanced educational technology, which can underestimate the AI's role in the classroom. Consequently, before a successful application of an AI support system into education, it is necessary for teachers to first utilize it themselves so that they can fully understand how it can scaffold learning.

Despite the many advantages, some challenges remain in using AI technology. Ethical considerations regarding data privacy and security must be addressed to protect intellectual property (Lund & Wang, 2023; Ray, 2023; Rodrigues, 2020). Additionally, students need to develop critical thinking skills to evaluate the quality and reliability of AI-generated content and avoid over-reliance on automated tools. Proper training and education on using AI technology effectively and responsibly are crucial (Chan, 2023; Tlili et al., 2023).

Methodology

To answer the research questions, this study adopted a mixed-method research design. The participants were English instructors teaching at the university level. The levels they teach were not classified into beginner, pre-intermediate, and so forth, as the focus of the study was on their experiences, perceptions, and expectations regarding the integration of AI tools in English language learning. Therefore, classification based on teaching levels was not applicable in this context. While the study did not classify participants based on the levels they teach, understanding the levels taught by instructors could be significant in other research contexts. It could provide insights into how AI tools are utilized across different proficiency levels, the specific challenges and benefits associated with each level, and the customization required in AI-driven language learning tools to cater to the diverse needs of students at various proficiency levels.

A total of 208 English instructors participated in the quantitative component of the study by completing the structured survey questionnaire distributed online via Google Forms in January 2024. The questionnaire was developed based on relevant literature and on existing research by Baker (2021), Eaton et al. (2021), Else (2023), Dhawan and Batra (2020), Mintz (2023), and Zhai (2022) with 29 close-ended questions in the form of five-point Likert scale. The questionnaire was divided into three main parts. Part 1 consisted of three items to investigate English instructors' experiences in using different AI-powered language learning tools. Part 2 included 21 Likert-scale questions aiming to evaluate participants' perceptions toward the effectiveness and the challenges associated with AI tool integration in their English language learning at university level. Part 3 consisted of five items to understand the participants' expectations regarding AI tool integration into English language learning. The questionnaire was distributed to the participants online using Google Forms in January 2024. The collected data was then analyzed using the IBM SPSS version 25 to calculate the descriptive statistics.

The overall Cronbach's α of the questionnaire was 0.907 (>0.9), indicating the high overall reliability of this study. Moreover, the reliability coefficients of all dimensions were higher than 0.7, indicating the good internal consistency of the questionnaire. The Kaiser–Meyer–Olkin (KMO) test was 0.879, and $\chi 2$ of Bartlett's test of sphericity reached the 0.01 significance level. In other words, common factors exist among relevant matrixes of questions, indicating the good validity of the questionnaire.

Moreover, a semi-structured interview was conducted with 20 randomly selected instructors. Randomly selecting instructors for research interviews enhances the study's validity by minimizing sampling bias and ensuring a diverse representation of perspectives. This approach captures a broader range of experiences and opinions, and increases the reliability and credibility of the research outcomes regarding AI-driven language learning tools in EFL contexts from different years of teaching experience. Their responses were transcribed, coded, and categorized to identify similar patterns and themes. Mackey and Gass (2005) explained that interviews could reveal phenomena that cannot be seen with direct observations. Furthermore, qualitative data analysis was validated by a consensus of the two coders which showed high inter-rater reliability

between these two coders (Krippendorff 's alpha = 0.95), which is above the minimally acceptable level (α = 0.667) (Krippendorff, 2004).

Two independent coders were responsible for transcribing, coding, and categorizing the interview responses to identify patterns and themes in the qualitative data. The criteria for selecting the coders included their expertise in qualitative data analysis and their familiarity with the research topic to ensure accurate and reliable coding of the interview data.

Semi-structured interviews were conducted with 20 English instructors selected randomly from the participant pool to provide in-depth qualitative insights. The semi-structured nature of the interviews enabled the researcher to elicit rich and deep data from the teacher participants. The open-ended questions encouraged participants to share their personal experiences, insights, and perspectives in their own words, allowing for a more detailed exploration of their thoughts and feelings regarding the integration of AI tools in language learning.

Overall, the study employed rigorous data collection and analysis methods, combining quantitative survey data with qualitative interviews, to provide a comprehensive exploration of English instructors' perspectives on the integration of AI tools in language learning, enhancing the validity, reliability, and credibility of the research outcomes.

Results and Discussion

The questionnaire was distributed to the participants online using Google Forms. The collected data was then analyzed using the IBM SPSS version 25 to calculate the descriptive statistics.

Table 1

Demographic Information of the Participants (N= 208)

Variable	Number	Percentage
Gender		
Male	88	42.5
Female	120	57.5
Years of teaching experience		
0-3	71	33.8
4-8	36	36.7
9-15	31	15
16 -20	19	9.2
21 and above	11	5.3
Proficiency level taught		
Beginner	49	23.7
Pre intermediate	83	40.1
Intermediate	99	47.8
Upper intermediate	71	34.3
Advanced	51	24.6

Table 1 shows the demographic information of the participants.

Figure 1

Instructors' Experiences in using AI Tools for EFL Learning

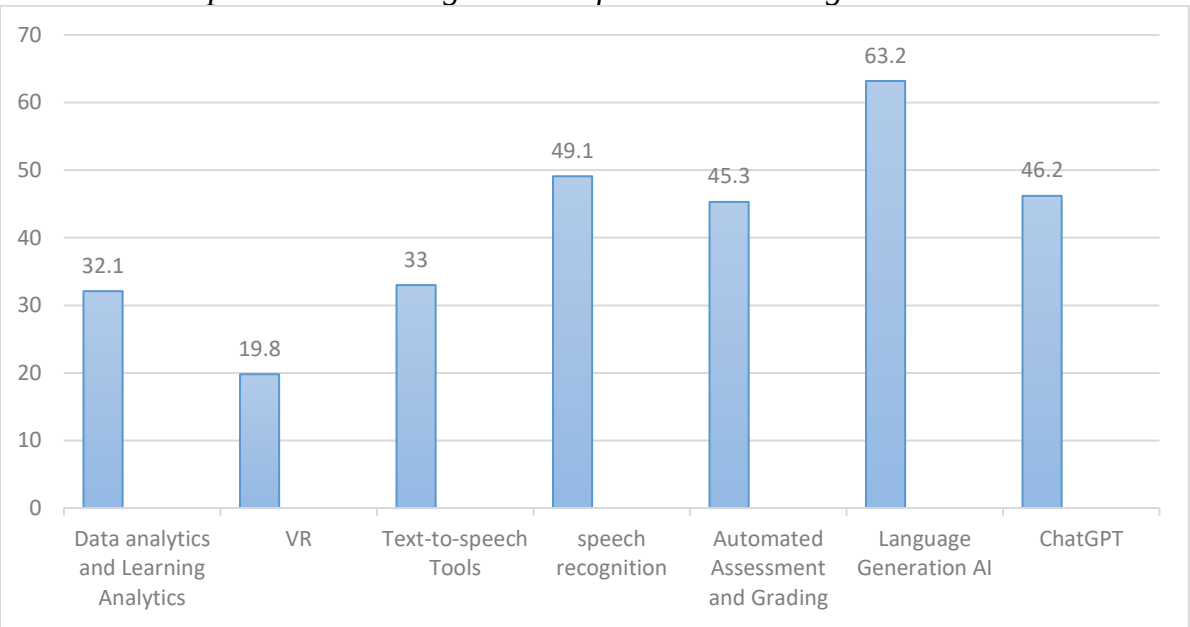

Figure 1 shows the AI-powered tools that instructors have used to facilitate their language classrooms. The findings indicate widespread adoption of AI-powered tools among instructors teaching English at this international university. Notably, language learning applications are the most utilized, accounting for 87.7% of the respondents. Additionally, language generation AI tools such as Grammarly enjoy popularity among 63.2% of the respondents. Automated assessment and grading tools, exemplified by Quizzes and Turnitin, are also prevalent, being used by 45.3% of the instructors. In contrast, virtual reality tools are the least frequently employed by language teachers.

Figure 2

Purposes of Using AI tools by the Instructors

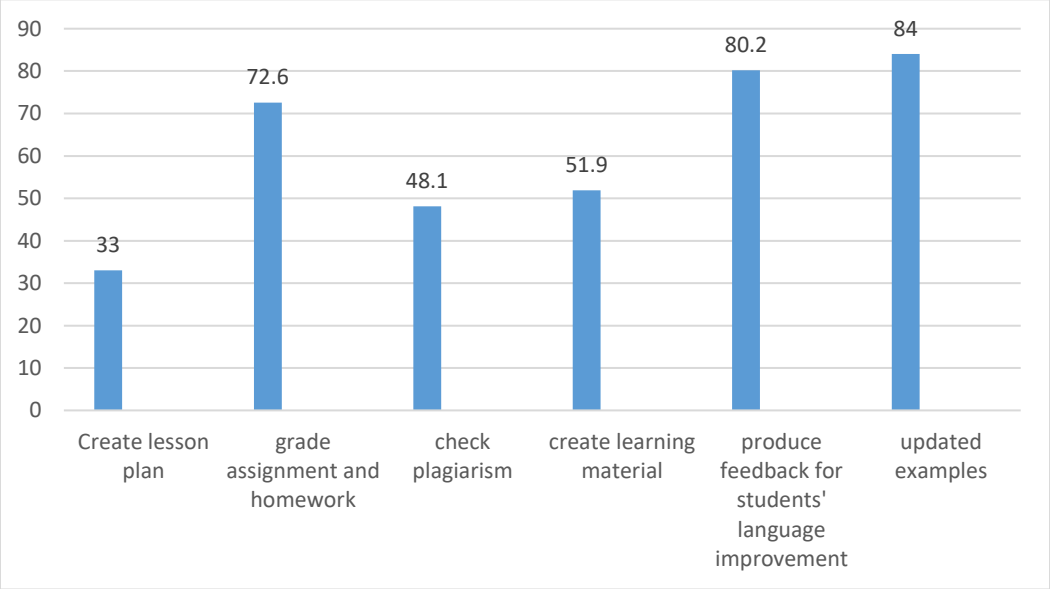

Figure 2 displays the purposes of using AI tools. The study suggests that English instructors use AI tools for various activities, with the majority (84%) using them to improve their English knowledge and skills, including vocabulary, grammar, speaking, listening, writing, and reading. AI tools are also popular for receiving feedback to improve their English (80.2%) and to help with English assignments (72.6%). However, creating learning plans using AI tools is the least common purpose (33%) among language instructors.

Table 2

Perceived Benefits of AI Tool Integration in English Language Learning

Items	Mean	SD
AI can help students save time	3.74	.75
AI can provide information in diverse fields	3.66	.69
AI can help student translate learning materials into different languages, making them easier to understand	3.47	.62
AI can help students better understand theories and concepts	3.53	.72
AI can illuminate ideas in writing and thus provide efficiency and productivity	3.53	.70
AI can provide personalized tutoring and feedback based on the students' learning needs and progress	3.56	.70
AI tools can help increase students' motivation to learn English	3.70	.62
Overall benefit of using AI for students' language learning in the classroom	3.88	.45

The most significant perceived benefit is the increase in motivation to learn (78%). Moreover, it is valued for time-saving (74%), personalized tutoring (72%), and overall classroom benefits (86%).

Table 3

Instructors' Perception of the Barriers of Using AI in English Language Learning

Items	Mean	SD
AI may provide unreliable information to the students	3.61	.73
Ai can produce inaccurate or false references	3.63	.45
AI can produce responses exhibiting logical errors and contradictions	3.60	.67
AI promote cheating and plagiarism	3.72	.33
AI decrease students' abilities to brainstorm and think critically	3.75	.67
Overall challenges of AI	3.63	.35

The most significant challenge identified by the participants is the possibility that learners may become excessively reliant on AI tools (74.6%). This overdependence can negatively impact their critical thinking skills (68%). Additionally, many participants expressed their concerns about the accuracy, reliability, and bias of the information and knowledge provided by AI tools (67.9% and 61.9%).

Based on the semi-structured interview, AI-based teaching allows instructors to use more personalized teaching plans. In particular, computer vision, natural language processing, and data mining in AI technology provide instructors with technological possibilities. Personalized teaching plans can be produced for teachers according to the class condition or individual situation, including teaching plans, classroom exercises, and homework assignments. Moreover, many instructors interviewed reported that AI

tools have the potential to enhance the quality of teaching by enabling teachers to closely monitor students' activities. Through AI, educators can tailor precise practice recommendations for individual learners based on their proficiency levels, aiding them in mastering challenging concepts within the curriculum. Utilizing natural language processing and data mining capabilities, AI facilitates more efficient batch processing of homework assignments, particularly in the assessment of objective questions. Furthermore, AI's natural language processing capabilities enable teachers to respond effectively to personalized queries from students. By mimicking human interaction patterns, AI assistants engage in intelligent communication with learners, offering personalized responses and thereby alleviating instructors' burden in repetitive learning tasks.

I find that AI can be quite beneficial in enhancing students' engagement and motivation. However, it's crucial to strike a balance between technology and traditional teaching methods to ensure effective learning outcomes. (Interviewee 1)

AI-based teaching offers exciting possibilities for personalized learning. With computer vision and natural language processing, I can tailor teaching plans, classroom exercises, and homework assignments to meet the unique needs of each student, enhancing their learning experience and engagement. (Interviewee 2)

Using AI assistants with natural language processing capabilities has significantly reduced my workload by handling repetitive learning tasks. This enables me to focus more on facilitating meaningful interactions with students and addressing their individual learning needs. (Interviewee 3)

The results revealed that instructors' perception of using AI was above the average level. In general, they were positive about the application of the integration of AI into their classroom. Even though most instructors (over 86%) had a high level of satisfaction with the use of AI in educational settings, some challenges were recognized as shown in Table 1 and Table 2. Despite the potential benefits of AI, it is important to approach its implementation with careful consideration. While integrating AI into education holds promise, it also raises ethical concerns, questions of accessibility, and potential shifts in teacher roles (Akgun & Greenhow, 2022; Holmes et al., 2019). These aspects call for thorough evaluation and thoughtful discussion as we move toward an EFL classroom that incorporates AI.

Moreover, through the utilization of AI, instructors can achieve the personalized creation of test papers by employing data mining and text analysis. By examining and consolidating structured data from the question bank, they can tailor exams to different classes based on their learning conditions. It further offers insightful analyses of students' exam performances, diagnoses the reasons for mistakes, compiles class-wide exam results, generates analysis reports on exam performance, identifies recurring error patterns, and assists teachers in delivering targeted instruction. During invigilation, AI-powered computer vision technology comprehensively monitors students' actions in examination room videos. This technology aims to reduce the workload and stress of

invigilating teachers by providing thorough surveillance. In addition, it is designed to enhance the overall quality of invigilation by ensuring adherence to exam rules and promoting fairness in assessment processes.

To enhance the utility of AI for educational purposes, instructors have suggested potential solutions. These include validating AI responses by cross-referencing with reliable information sources, utilizing AI tools as a reference or consultation tool, providing guidelines for its usage, and advocating for academic integrity and ethical applications of AI within an academic context. Recognizing the potential risks it may pose to education, many instructors have proposed strategies to transform AI into an effective teaching and learning tool. These strategies encompass initiatives such as discerning AI-generated information, instructing students on appropriate utilization, and promoting academic integrity among students. Instructors' views on AI differ based on factors such as their teaching philosophy, teaching background, previous exposure to educational technology, and their assessment of the effectiveness and importance of specific technologies. These elements collectively shape their readiness to embrace new educational technologies, as noted by Ryu and Han (2018).

Limitations and Suggestions for Future Research

This study has several limitations that should be acknowledged when interpreting the results and findings. Firstly, the focus on language instructors at this particular international university in Thailand may limit the generalizability of the results to other educational institutions. To enhance the external validity of future research, it is recommended to include participants from diverse educational backgrounds to capture a broader representation. Secondly, the reliance on self-reporting measures, such as questionnaires and interviews, introduces the possibility of response biases and subjective interpretations. To mitigate these limitations, future studies could incorporate additional objective measures or observational methods to provide a more comprehensive and objective assessment of AI's effectiveness and challenges in diverse educational settings. Lastly, this study primarily focused on instructors' perceptions of AI, therefore future research should delve into the pragmatic consequences, obstacles, and levels of student perception linked to the integration of AI in authentic educational environments. Such investigations would facilitate a more profound comprehension of the determinants that impact the successful incorporation of AI in language classrooms, thereby offering guidance for its efficient implementation across diverse educational settings. By tackling these limitations in forthcoming studies, researchers can enhance a holistic understanding of AI application in education, delivering practical insights for its successful integration and utilization across various educational contexts.

To enhance the external validity and generalizability of the findings, future studies could include participants from diverse educational institutions, both within Thailand and internationally. Researchers could conduct multi-site studies involving multiple universities and language institutes to capture a broader representation of English instructors' perspectives on the integration of AI in language learning.

While this study primarily focused on instructors' perceptions of AI, future research should look into the pragmatic consequences, obstacles, and levels of student

perception linked to the integration of AI in authentic educational environments. Researchers could conduct mixed-method studies involving both teachers and students to explore the impact of AI on teaching and learning processes, student engagement, and learning outcomes. This would facilitate a more profound comprehension of the determinants that impact the successful incorporation of AI in language classrooms and offer practical insights for its efficient implementation across diverse educational settings.

Conclusion

There has been a concerted effort to bring about changes in teaching methods for the benefit of future generations. This involves incorporating advanced educational technology and promoting student-centered learning. This global trend holds the promise of enhancing students' performance while increasing their enthusiasm and motivation for learning. The goal of AI-assisted education is to foster students' critical thinking, creativity, problem-solving, and collaboration skills by infusing AI technology into all educational activities with language education (Lin et al., 2021). Achieving this objective relies significantly on the dedication and capabilities of teachers to lead AI education initiatives in their language classrooms.

With the assistance of AI, education has the potential to achieve unprecedented levels of excellence. A resilient educational framework can be implemented wherein instruction becomes more adaptable through the integration of AI-assisted technology. AI tools will facilitate students in gaining knowledge and enhancing the skills necessary in technologically advanced society. The results and findings of this research hold significant implications for English language educators, curriculum developers, and policymakers in the researcher's context and other similar educational settings globally. By understanding English instructors' perceptions of AI tools, educational institutions can make informed decisions regarding the integration of AI tools into language learning curricula.

Author

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The Effects of Home-Based English Language Activities on Thai Preschoolers' English Vocabulary Development: A Study of Thai Preschoolers with Limited English Proficiency Parents

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Abstract

This study investigates the effects of using a set of home-based English language activities (HELAs) on Thai preschoolers' receptive vocabulary development and explores the opinions of parents with limited English proficiency (LEP) in using the HELAs. The participants were 26 pairs of preschoolers and their parents. The instruments employed were as follows: a set of HELAs designed following the ADDIE instructional design model, pre- and post-vocabulary tests used to measure the preschoolers' vocabulary development, a parent questionnaire, and a semi-structured interview. The parents implemented the HELAs at home for a period of four weeks. Each week, the HELAs included four activities: watching a fable video, learning target vocabulary from a vocabulary video, practicing with a picture card, and reading with parents. After the intervention period, the preschoolers showed significant gains in receptive vocabulary. Additionally, the interviews with parents revealed three key benefits of the HELAs that could lead to vocabulary development. These benefits included providing frequent exposure to vocabulary, creating opportunities for deliberate learning of vocabulary, and promoting learning through the combination of verbal (spoken words) and nonverbal (pictures) codes. Furthermore, the findings revealed that LEP parents had positive attitudes toward using HELAs. These findings not only support the effectiveness of using various HELAs in enhancing vocabulary knowledge but also offer insights for involving LEP parents in using HELAs.

Keywords: home-based English language activities; limited English proficiency parents, receptive vocabulary; Thai preschoolers; English vocabulary knowledge

Introduction

The growing importance of English as a lingua franca for communication, education, and future opportunities in the increasingly interconnected world fuels a global trend of preschoolers (ages 3-5) engaging in English as a foreign language (EFL) learning (Butler, 2019; Lai et al., 2024; Zhang et al., 2021). This trend also resonates with Thailand, where a considerable number of Thai EFL learners begin their English learning during the preschool age, although English is officially designated as a

compulsory foreign subject from primary education onward (Nomnian, 2013). The trend of early EFL learning in Thailand is likely driven by the global importance of English and the belief that early exposure to English can significantly improve language proficiency later in life (Khamsuk & Whanchit, 2021; Magnussen & Sukying, 2021; Prongkitsanuluck et al., 2022).

Given that many Thai preschoolers have already started learning English, it is crucial to help them establish a strong foundation of vocabulary knowledge. This is because, without sufficient vocabulary knowledge, these young learners may struggle to understand and engage, whether in basic English communication or classroom instruction (Khamsuk & Whanchit, 2021; Magnussen & Sukying, 2021; Prongkitsanuluck et al., 2022). Moreover, those lacking such a foundation might face challenges in developing more advanced language skills such as reading comprehension (González-Fernández & Schmitt, 2017; Webb & Nation, 2017). As vocabulary is the building block of language learning, the need for effective vocabulary learning activities has risen. In consideration of effective activities, home-based English language activities (HELAs) emerge as a promising option (Lai et al., 2024; Zhang et al., 2021).

HELAs are activities that parents, family members, or caregivers carry out at home to support children's English language development. While the concept of HELAs can be associated with autonomous learning in a home environment, where learners can set their own learning goals, choose content that interests them, and take ownership of their learning (Xie, 2020; Xie & Yang, 2020), the approach for preschoolers tends to be different. In the preschool years, HELAs often involve structured activities with parental involvement (Zhang et al., 2021). This is likely because young learners tend to lack the necessary skills and cognitive abilities to engage in completely independent language learning. Hence, parents play a crucial role in providing guided instruction and learning materials for these activities. In the case of EFL preschoolers, mounting evidence suggests that a wide range of HELAs are associated with their vocabulary development (Lai et al., 2024; Petchprasert, 2014; Sun et al., 2018; Zhang et al., 2021). The plausible explanation could be that engaging in HELAs offers unintended exposure to language input (e.g., listening to stories) and deliberate learning opportunities (e.g., practicing pronunciation during shared reading) (Lai et al., 2024; Sun et al., 2018). Additionally, HELAs can potentially compensate for EFL preschoolers' limited exposure to English both in the classroom and in daily life, a factor that could hinder their vocabulary development (Khamsuk & Whanchit, 2021; Lai et al., 2024; Sun et al., 2018).

Despite the growing body of studies exploring the benefits of HELAs for English vocabulary development among EFL preschoolers in various contexts, there is a dearth of studies addressing this issue in the Thai context. Although the most relevant studies available in Thailand, which employed dialogic reading (Petchprasert, 2014) and storytelling (Khamsuk & Whanchit, 2021) as HELAs, demonstrated positive effects on Thai preschoolers' vocabulary development, these studies have limitations that require further exploration. First, these existing studies (Khamsuk & Whanchit, 2021; Petchprasert, 2014) primarily focused on a single HELA approach (e.g., using only reading or storytelling). Research in the field of vocabulary acquisition, however, has suggested that effective vocabulary learning necessitates a combination of various

learning conditions, such as unintentional exposure to language, deliberate vocabulary learning, and opportunities for practice using the learned words (González-Fernández & Schmitt, 2017; Webb & Nation, 2017). Thus, a single HELA might not fully support all these conditions. For example, while listening to stories excels at providing rich unintentional exposure to new vocabulary, it may not provide as many opportunities for deliberately learning the meaning of those words. Given the potential limitations of utilizing a single HELA, it is worth further investigating how various HELAs could be used together to promote vocabulary learning among Thai preschoolers.

Second, a critical gap exists in previous studies in Thailand that did not directly address the use of HELAs by Thai parents with limited English proficiency (LEP). Instead, the previous studies focused on the HELAs led by parents with moderate English proficiency (Petchprasert, 2014) or by researchers (Khamsuk & Whanchit, 2021). This means their practices may not apply to LEP parents who tend to face various challenges in using HELAs effectively, such as difficulties in using English while doing activities, answering children's questions related to English vocabulary, and providing pronunciation guidance, among others (Forey et al., 2016; Tong et al., 2021). Therefore, a study directly involving LEP parents is crucial, as it can shed light on how LEP parents use HELAs and the specific difficulties they face. This insight into their experience is essential for promoting more effective HELAs that support this under-represented population.

To address these research gaps, this study aims to investigate the effect of using a set of HELAs on enhancing Thai preschoolers' receptive English vocabulary, particularly when implemented by Thai LEP parents. Additionally, the study explored these parents' opinions regarding using HELAs. The findings provide valuable insights into how HELAs can enhance the vocabulary knowledge of EFL preschoolers and shed light on the perspectives of LEP parents involved in this process.

Research Objectives

This study's research objectives are as follows:

1. To investigate the effects of using a set of HELAs to enhance Thai preschoolers' English receptive vocabulary knowledge.
2. To explore the opinion of Thai LEP parents toward using a set of HELAs.

Literature Review

English Vocabulary Knowledge and EFL Preschoolers

Given the diverse cognitive capacities, language proficiency, and developmental needs of learners across different age groups and learning contexts, it is crucial to identify the specific vocabulary knowledge that is most relevant and beneficial for each group (Webb & Nation, 2017). According to Nation (2001), vocabulary knowledge can be classified into three categories: (a) knowledge of form, (b) knowledge of meaning, and (c) knowledge of use, covering both receptive and productive aspects. As the participants of this study were of preschool age, this study solely focused on receptive vocabulary knowledge, referring to the ability to recognize the spoken word when it is heard (Nation, 2001). This emphasis stems from its vital role in helping EFL preschoolers understand basic English communication, participate in classroom

activities, and build a foundation for future literacy skills (Butler, 2019). Generally, EFL preschoolers tend to develop receptive vocabulary knowledge more readily than productive vocabulary (Butler, 2019) since it may only require understanding the form-meaning link of a word to achieve receptive vocabulary mastery (González-Fernández & Schmitt, 2017; Webb & Nation, 2017).

Regarding vocabulary selection for EFL preschoolers, previous studies highlight the importance of basing choices on their cognitive development level (Albaladejo et al., 2018; Bulter, 2019; Hjetland et al., 2023) and the relative value of words (Hjetland et al., 2023; Webb & Nation, 2017). Typically, concrete nouns are often prioritized as preschoolers do not fully develop the cognitive ability to fully understand abstract ideas (Albaladejo et al., 2018; Chamsuparoke & Charubusp, 2021; Hjetland et al., 2023; Webb & Nation, 2017). Moreover, the target words should relate to their daily life and the immediate environment as these words constitute a significant portion of spoken and written communication (Hjetland et al., 2023; Webb & Nation, 2017). Therefore, prioritizing vocabulary relevant to EFL preschoolers' daily lives and aligned with their cognitive development could foster meaningful and effective English language learning for them.

HELAs in EFL Contexts and their Effects on Vocabulary Development among EFL Preschoolers

Drawing from previous studies, HELAs could be tentatively categorized into (1) activities focusing on providing direct teaching of specific language elements, such as discussing the meaning of English words and teaching pronunciation (Forey et al., 2016; Lai, 2024), and (2) activities focusing on providing unintended exposure to English, for example, watching English cartoons, and storytelling (Choi et al., 2019; Lai et al., 2024; Lee, 2010; Sun et al., 2018; Zhang et al., 2021). The quantity and quality of HELAs are often influenced by various parent-related factors such as parents' English proficiency, family socioeconomic status, and parents' belief in their role (Forey et al., 2016; Lai et al., 2024; Lee, 2010). Notably, in the EFL contexts, studies have consistently identified parents' English proficiency as a significant factor influencing both the quantity and quality of HELAs (Forey et al., 2016; Lee, 2010; Tong et al., 2021). Limited English proficiency can restrict EFL parents' involvement in HELAs, particularly in activities that demand a certain level of English proficiency, such as storytelling and English conversation (Forey et al., 2016; Tong et al., 2021). Also, LEP parents may face various obstacles in using HELAs, such as a limited understanding of the English language, difficulties responding to their children's inquiries, incorrect pronunciation, and a lack of confidence (Forey et al., 2016; Tong et al., 2021). Conversely, higher English proficiency empowers parents to employ HELAs more easily and facilitate a broader range of activities, fostering a richer learning environment for their children (Lee, 2010). Therefore, effective use of HELA requires careful consideration of parents' English proficiency.

Concerning the impact of HELAs on vocabulary development among EFL preschoolers, previous studies have revealed positive contributions. Zhang et al. (2021), in their meta-analysis of the home environment and the development of English among ESL/EFL Asian children, found that informal literacy activities at home (e.g., parent-

child book reading) were positively correlated with Asian children's English development, including vocabulary. They further emphasized the benefits of home literacy activities for LEP parents, suggesting they utilize accessible resources (e.g., electronic books and television programs) to compensate for limited English use at home. Similarly, Sun et al. (2018) found that home English media exposure was the strongest predictor for receptive vocabulary skills in young English learners in China. Their study affirmed that the use of home English media has an important role in English development among young EFL learners as it compensates for the lack of English exposure both at home and at school. In line with these findings, Lai et al. (2024) found that Informal Language Exposure at home (e.g., reading with parents and watching English cartoons) was linked to English oral vocabulary in Chinese children. Their finding underscored the potential benefit of home literacy activities in providing rich language exposure. Furthermore, the intervention studies in Thailand align with the aforementioned findings. Petchpasert (2014) found that Thai preschoolers who participated in the dialogic reading program with their parents experienced significant vocabulary growth. This indicated that the interaction between parents and children during the reading session (e.g., discussing the stories and book-related vocabulary) had a positive effect on their vocabulary development. Consistent with Petchpasert (2014), Khamsuk and Whanchit (2021) observed vocabulary growth among Thai preschoolers participating in the in-house storytelling sessions led by the researchers. Their findings highlighted that both frequent exposure to English and deliberate learning of vocabulary occurring at home can positively impact Thai preschoolers' vocabulary development.

The parallel findings from existing literature underscore the significance of HELAs in fostering English vocabulary development among EFL preschoolers. Through participating in HELAs such as reading English books with parents or watching English cartoons, EFL preschoolers naturally encounter new vocabulary. This exposure can trigger the initial noticing and learning of new vocabulary (Nation, 2001). Additionally, certain HELAs, such as explicit vocabulary instruction and pronunciation practice, can facilitate deliberate vocabulary learning. By focusing on explanations, definitions, and correct pronunciation, these activities go beyond mere exposure and can enhance long-term memory (Webb & Nation, 2017). The frequent encounters with new words, as well as the quality of how learners engage with and learn these words through HELAs, could potentially contribute to their progress in language learning.

Theoretical Framework

The following sections delve into key principles that informed the design of the HELAs used in this study. Drawing on research in vocabulary learning, parental involvement, and instructional design, these principles were adapted to create effective vocabulary learning experiences for EFL preschoolers with LEP parents.

1. *Promoting vocabulary learning conditions*

The design of the HELAs was based on several principles to promote vocabulary learning. One crucial principle is to incorporate various activities to promote optimal learning opportunities. This is because the acquisition of new vocabulary is a complicated process that calls for a variety of learning conditions (Nation, 2001).

Therefore, using various HELAs, each with its advantages, could assist and enrich learning in a balanced way (Bulter, 2019; Nation, 2001). Another key principle is providing opportunities for repeated exposure to the target vocabulary. By encountering words consistently, learners have more opportunities to notice new words, retrieve the meaning of previously encountered words, and use learned words in various situations (Butler, 2019; Nation, 2001; González-Fernández & Schmitt, 2017). Also, it is worthwhile to consider incorporating activities promoting deliberate learning of target vocabulary. Focusing on learning a smaller, carefully chosen set of words and their specific features (e.g., meaning and pronunciation) might enhance attention, engagement, and ultimately, long-term retention (Nation, 2001). Furthermore, utilizing learning materials that combine verbal (speech) and non-verbal (visual) codes could be useful. Dual Coding Theory suggests that young learners may acquire vocabulary and deepen their understanding more effectively when information is presented through both channels (Wong & Samudra, 2021). In addition, addressing learners' interests could maximize their engagement in learning. Previous studies have revealed that preschoolers are most likely to actively participate in activities that encourage creativity, provide enjoyment, and encourage active participation (Chamsuparoke & Charubusp, 2021; Nation, 2001; Panapob, & Abhakorn, 2022; Sun et al., 2018). Therefore, HELAs should be designed to meet these engaging elements. Finally, as this current study focused on receptive vocabulary knowledge of spoken words, the activities should prioritize listening tasks over those that require reading, writing, and speaking.

While combining a variety of HELAs, effective implementation requires a well-sequencing approach. Beck et al. (2013) proposed a three-step sequence for teaching new vocabulary to young learners: presenting target words in context, providing deliberate teaching, and offering follow-up activities for practice and interaction. Webb and Nation (2017) further suggested sequencing activities from easier to more challenging tasks to progressively develop learners' skills and knowledge. Strategically combining various HELAs and implementing them through a well-sequenced structure can ensure effective vocabulary learning experiences for young EFL learners.

2. ***Facilitating parental involvement***

Parental involvement is crucial for the successful implementation of HELAs, as parents bear the responsibility for supervising, supporting, assisting, or monitoring their children's learning at home. Drawing from previous multidisciplinary studies, this study proposes key recommendations for designing HELAs to facilitate the involvement of LEP parents. First, it is essential to communicate to parents their role in children's learning achievement. Informing parents about how their involvement can benefit their children's English learning can help them recognize the importance of their role and encourage their participation (Hoover-Dempsey et al., 2005; Lai et al., 2024). Second, the selection of HELAs should consider parents' English proficiency. For LEP parents, utilizing readily available resources such as educational videos can compensate for their language limitations (Tong et al., 2021; Zhang et al., 2021). Activities with high English demands should be avoided or adapted appropriately. Third, parents should be provided with knowledge and resources that they can easily comprehend and integrate into their

daily lives. Offering parents learning resources with step-by-step instructions can help them work with their children at their own pace and within their capabilities. This can also boost their confidence and increase their involvement (Hoover-Dempsey et al., 2005). Lastly, HELAs should be time-limited and interactive. Specific time-limited tasks can help parents understand their role clearly and manage their time effectively according to their life context, while interactive tasks enhance interaction between parents and their children (Hoover-Dempsey et al., 2005). Implementing these recommendations has the potential to facilitate LEP parents in using HELAs more effectively to support their children's learning.

3. ***Employing a systematic developmental process***

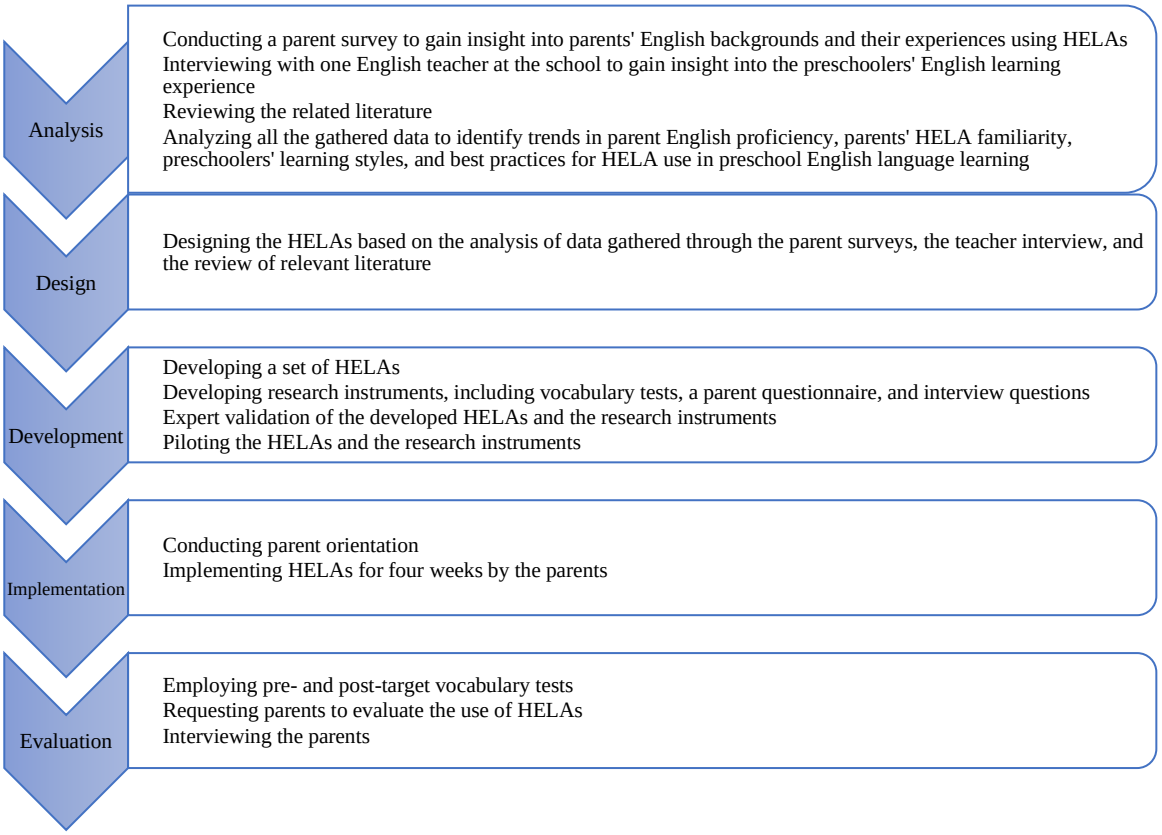
To ensure the set of HELAs in this study was designed to foster vocabulary development in EFL preschoolers and remained practical for their LEP parents, a systematic development process was adopted. This process utilized the ADDIE model (Branch, 2009), a well-established instructional design framework encompassing five key phases: Analysis, Design, Development, Implementation, and Evaluation (ADDIE). In this study, the initial phase, Analysis, involved an analysis of the preschoolers and their parents' English background and their parents' experience in using HELAs, along with a review of relevant literature. This information then laid the groundwork for the subsequent Design and Development phases. Following the development of the HELAs and their validation by experts, a pilot phase was conducted. Subsequently, the fully developed HELAs were implemented for four weeks. This Implementation phase put the developed HELAs into practice to investigate their impact on vocabulary development and their applicability in real-world settings. Finally, the Evaluation phase involved a comprehensive analysis of data gathered through various methods, including vocabulary tests, parent questionnaires, and semi-structured interviews.

Methodology

Research Design

This study employed a mixed methods research design, utilizing both quantitative and qualitative data collection methods. The HELAs in this study were developed and implemented following the ADDIE instructional model (depicted in Figure 1). After a 4-week HELA intervention, pre- and post-vocabulary tests were administered to measure preschoolers' vocabulary development. Additionally, a parent questionnaire was used to gather perceptions toward using the HELA activities. Finally, semi-structured interviews with eight parents were conducted to explore their experiences using the HELA activities and their perspectives on how these activities impacted their children's vocabulary development.

Figure 1
HELAs Developing Processes



Participants

This study employed purposive sampling to recruit 26 Thai preschoolers aged 3-4 years from a preschool in northern Thailand, along with their parents. The preschoolers were purposively selected because their parents had limited English proficiency. The preschoolers were from two classes, each with 13 students. All parents were required to provide an informed consent form and an assent form on behalf of their children. To gain insights into the preschoolers' prior English learning experiences, an initial interview was conducted with one English teacher at the study's outset. Moreover, a parent survey was conducted at the beginning of the study to ensure the comparability of the parents' English language backgrounds and explore their prior experience using HELAs.

According to the survey and interview, all participating preschoolers had approximately one year of English learning experience, primarily within the school, where they learned English two hours per week. The teacher also reported that she focused on teaching basic vocabulary related to daily life, such as places, animals, and the environment. Despite the absence of formal English vocabulary assessments, the teacher observed positive signs of developing vocabulary knowledge in the preschoolers. This was evident in their increasing ability to accurately choose pictures that matched the vocabulary the teacher stated in English. Concerning the preschoolers'

activity preference, both the teacher and parents agreed that they enjoyed watching or listening to fables and playing games such as naming objects in English.

Concerning the parents' English background, they self-rated their skills in four areas on a 6-point scale (Clément & Baker, 2001), ranging from 1 (quite badly) to 6 (very well). Their self-evaluation indicated a level of "quite badly" across all four skills: speaking (M = 1.27), reading (M = 1.42), listening (M = 1.88), and writing (M = 1.15). This indicated limited English proficiency. Moreover, they reported that English was not used in their daily lives or their occupations, meaning they had very little contact with English. Regarding the HELAs currently carried out by the parents, the survey revealed three HELAs, including helping with English homework, using video media, and teaching vocabulary. However, 16 parents out of 26 (61.54%) reported not being involved in any HELAs, indicating that HELAs may not be common practices among the parents in this study.

Data collection Methods and Procedures

To collect the data, four research instruments were employed including the set of HELAs, the pre- and post-vocabulary tests, the parent questionnaires, and the semi-structured interview. The following sections describe each research instrument.

1. A set of HELAs

Enriching the vocabulary learning experience requires utilizing a variety of activities (Nation, 2001). Therefore, this study employed four HELAs, including watching fable videos, watching vocabulary videos, using picture cards, and reading with parents. Prior studies have shown that these activities can enhance vocabulary knowledge by providing opportunities for repetitive exposure to vocabulary, deliberate learning, and exposure to rich verbal and nonverbal representations of vocabulary (Choi et al., 2019; Lai et al., 2024; Lee, 2010; Sun et al., 2018; Zhang et al., 2021). When well-designed, these activities can be particularly engaging for young learners (Panapob, & Abhakorn, 2022; Prongkitsanuluck et al., 2022) and are practical for LEP parents (Khamsuk & Whanchit, 2021; Sun et al., 2018). Moreover, these activities were considered as interesting for the preschoolers in this study, as reported by their parents and the teacher.

Each week, one fable was used as the central theme for conducting the HELAs. Following the instructional sequence recommended in the literature (Beck et al., 2013; Webb & Nation, 2017), parents were instructed to implement these activities according to the sequence of "Watch - Learn - Practice - Read," as detailed in Table 1. This sequence facilitates efficient vocabulary learning for preschoolers. Watching fable videos first introduced new vocabulary within the context of the stories. Following this, watching vocabulary videos and using picture cards provided a more deliberate focus on learning the target vocabulary. Finally, encountering these target words again during reading sessions could further strengthen recall and promote long-term retention. Moreover, the sequence was also carefully structured for the preschoolers, beginning with simpler tasks (e.g., watching videos) and gradually progressing to more advanced activities such as practicing with picture cards and reading with parents. Also, parents'

roles evolved from providing support and encouragement during video watching to actively participating in using picture cards and engaging in shared reading.

The HELA program structured activities into four days, each lasting around 15-20 minutes, taking into account parents' preference for shorter sessions that fit their life contexts and acknowledging their reports of weekend activities planned for their children. However, parents were encouraged to repeat these HELAs on other days outside of the set schedule if their child showed interest in doing them.

Table 1

A Schedule of HELAs for Each Week

Days	HELAs	Material	Parent roles
Monday	Watching a fable video	Videos uploaded on YouTube	Scheduling video viewing, monitoring, and encouraging children to engage in follow-up activities provided in the video
Tuesday	Learning target vocabulary from a vocabulary video		
Wednesday	Practicing with a picture card	Picture cards sent home weekly	Using picture cards, and giving verbal praise
Thursday	Reading with parents	Picture books sent home weekly	Reading with a child in English or Thai, using a point-to-print technique

To ensure the effective implementation of HELAs, the intervention began with an orientation video sent to all parents via the online platform due to the spread of COVID-19 at the time of the study. The video, viewed and acknowledged by all parents, explained the intervention's procedures and parents' roles. Then, throughout the four-week intervention, parents received a weekly package of materials in both electronic and physical formats. Each material was sent or uploaded based on the designated day of use (Table 1). However, fable and vocabulary videos were only available online for one week before being archived. This limited accessibility encouraged participants to focus on each week's activities.

During the week, the parents were requested to complete each activity at least once according to the schedule (Table 1). This structured schedule helped parents focus on a single activity each day. Furthermore, the demonstration videos for each activity were uploaded every week via the online platform to help the parents implement the activities. The online platform also served as a communication channel, allowing parents to ask questions and seek clarification throughout the week.

To monitor progress and maintain engagement, parents were requested to record their activities in a log and submit it to the teacher every Monday. It was informed in

the orientation video that failing to submit the weekly log or participate in fewer than four activities per week could lead to discontinuation from this study. Encouragingly, all parents successfully fulfilled these requirements, ensuring their continued participation throughout the intervention. The next sections provide comprehensive details about the materials used in each activity. These learning materials were designed to promote the use of both visual and verbal information, all while incorporating entertaining elements to capture preschoolers' interest.

1.1 ***Fables videos***

In this study, four fable videos were composed in English by adapting familiar fables that the preschoolers had learned in Thai at school. Each video was approximately 7 minutes long. To create the video, the English script was first composed primarily using vocabulary from the school's English wordlist. This familiarity with both stories and vocabulary aimed to facilitate preschoolers' comprehension when watching the videos in English (Nation, 2001). Each script, comprising approximately 350 words, was proofread by a native English speaker and evaluated by using the Flesch reading-ease test to indicate how difficult a text in English is to comprehend (McClure, 1987). All scripts scored above 90, indicating their suitability for young learners.

The design of the videos featured age-appropriate illustrations that clearly depicted the story and target vocabulary. A Thai professional English teacher narrated the videos, primarily in English, using tone, mood, pace, and gestures that matched the story. However, the narrator occasionally shifted to Thai to maintain preschoolers' engagement. At the end of the videos, the narrator asked follow-up questions about the fable in Thai and encouraged parents to assist their children with answering.

1.2 Vocabulary videos

Following the four fable videos, an additional set of four videos aimed at facilitating deliberate learning of target vocabulary was created. Each video presented 10-13 target vocabulary items including nouns and verbs from each fable. The videos were between 5 and 7 minutes long and primarily utilized Thai throughout. The teacher in the vocabulary video was the narrator in the fable videos.

The teaching process followed a three-step structure: Warm-up, Present, and Play. During the Warm-up, the teacher initiated the session with general questions about the fable to prepare the children for the vocabulary introduction. In the Present phase, vocabulary illustrations were shown, and the preschoolers were prompted to name them in English, with the teacher providing pronunciation guidance. Finally, in the Play phase, the preschoolers engaged in activities, such as identifying silhouettes by naming them in English. Parents played a crucial role in this phase by encouraging their children to share answers, providing support when needed, and offering verbal praise for correct answers.

1.3 Picture cards

Picture cards featured illustrations of 10-15 key target vocabulary items from the fables. These cards prompted simple English dialogues: parents asked "What do you see?" and children responded with "I see..." followed by the vocabulary (e.g., "I see a

hedgehog."). Words correctly answered over three times were considered mastered, allowing parents to focus on items requiring more practice. Furthermore, recognizing that some parents may be unfamiliar with the card practice, a demonstration video was provided weekly.

1.4 Fable books

Each week, the preschoolers received a fable book based on the fable for that week. The books had an illustration accompanied by a narration in English which was simplified into one short simple sentence to facilitate parents' reading (e.g., The tiger was sleeping.). However, if reading in English posed challenges, parents were encouraged to read in Thai and use the point-to-print technique. This involved pointing to characters, objects, and actions, and prompting their children to name them in English. To help parents adopt the technique, a video demonstrating its use was provided every week.

Validating and Piloting the Developed HELAs

The developed HELAs underwent two evaluation processes. Initially, five experts evaluated the content, design, and usability of the activities using a 5-point Likert scale, ranging from 1 (least appropriate) to 5 (most appropriate). The scores, all of which exceeded 4.00, indicated a strong consensus on the appropriateness of the HELAs. Subsequently, to gather insights into real-world applications, a two-week pilot study involving 22 Thai preschoolers and their LEP parents, who were not participants, was conducted. Following the pilot, 22 parents evaluated the HELAs using the same criteria as the experts. Consistent with the expert review, all aspects scored above 4.00, suggesting that the parents found HELAs practical, useful, and well-designed.

2. Pre- and post-vocabulary tests

The pre- and post-vocabulary tests were developed by drawing on the established format and protocol of the Peabody Picture Vocabulary Test (PPVT) (Dunn & Dunn, 1997), a widely used test for assessing receptive vocabulary in young ESL/EFL learners (Zhang et al., 2021). The pre- and post-tests were administered at the school by the English teacher, who underwent training and had a comprehensive understanding of the test's nature. The researcher also served as an observer during the testing. Before the test, the preschoolers practiced on two sample items to ensure a clear understanding of the protocol. During the test, the teacher presented a page in the booklet with four pictures: one target word and three distractors. The pictures differed from those used in the HELA materials to minimize the chance of the preschoolers selecting based on familiarity. Upon the teacher stating the target words, the preschoolers were required to point to the corresponding pictures. Correct responses were scored as 1 point, while incorrect ones received 0 points. The pre- and post-tests were conducted in the same manner and used the same tests.

Concerning the selection of target vocabulary, three to four vocabulary items from each fable were chosen based on two criteria: (1) all target vocabulary were concrete nouns, and (2) they were likely unfamiliar to the preschoolers. To ensure the latter, the teacher confirmed that the chosen words were neither taught nor used in class.

These target words were also not on the school's wordlist which was used to create the English video script used in this study. Additionally, words that 70% of the preschoolers correctly identified in the pre-tests would be excluded. This process resulted in the selection of 15 target words, all of which were retained due to no pre-test item exceeding the 70% threshold. The list of target words is detailed in Table 2.

To validate the test, five experts used the Index of Item Objective Congruence (IOC) form to judge each test item by rating a scale (1 = agree, 0 = not sure, -1 = disagree), depending on how well it directly assesses the target vocabulary. All items scored above 0.600, confirming their validity. The same experts then evaluated the appropriateness of the test administration procedures in two areas, including instructions (e.g., clarity and simplicity of the instruction) and test format (e.g., picture selection), using a 5-point Likert scale (1 = least appropriate, 5 = most appropriate). This evaluation ensured the administration procedure's suitability for use with the preschoolers, as evidenced by average scores exceeding 4.0 across all criteria. To determine the test's reliability, a pilot test with 15 items was conducted with 22 preschoolers who were not participants. This pilot employed a test-retest approach with a three-week interval. The resulting Pearson correlation of 0.872 demonstrated good reliability.

3. Parent questionnaire

Following the intervention, the parent questionnaire, developed by the researcher, was used to gather parents' opinions toward using HELAs. The questionnaire contained eight items categorized into three main areas: content, design, and overall usability of the HELA activities. Each item used a 5-point Likert scale (strongly disagree = 1, strongly agree = 5). To avoid overburdening parents, the questionnaire focused on their overall experience in using HELAs rather than individual activities. This approach was adapted based on the feedback from the pilot study where parents found evaluating each activity repetitive and time-consuming. However, open-ended questions were included, allowing parents to provide specific comments regarding a particular HELA.

4. Semi-structured interview

Initially, 11 parents, representing children with gained scores in the post-test ranging from the lowest (2 scores) to the highest (12 scores), were purposively invited to participate in interviews. However, only eight agreed to participate, as a father and two grandparents, whose children exhibited a difference of two to four scores, were unavailable for the interview session. The participating parents, all mothers, self-reported their English proficiency as "quite poor." Their children demonstrated a difference of five to 12 scores.

Due to the ongoing COVID-19 situation during the study, interviews were conducted online through channels parents were comfortable with, based on their availability. Each interview, conducted in Thai, lasted approximately 20-30 minutes. The interview questions aimed to elicit insight into parents' opinions regarding the effect of HELAs on their children's vocabulary learning and their experiences in using HELAs. These questions were validated by five experts for their validity using IOC,

and all achieved a score of 1.00. Following a trial in the pilot study with six parents, redundant questions were eliminated, and some questions were revised based on the feedback.

Data Analysis

Table 2

Data Collection Plan

Weeks	Data collection plan
Week 1 -2	**Pre-test 1** Target vocabulary: hedgehog, hunter, net, flute, mole, eagle, pumpkin, whistle **Implementation of HELAs (Stories 1-2)** **Post-test 1**
Week 3-4	**Pre-test 2** Target vocabulary: **s**quirrel, grain, jar, scarf, paintbrush, shovel, apron **Implementation of HELAs (Stories 3-4)** **Post-test 2**
Week 5 -6	● **Parents' evaluation of HELAs** ● **Parent interviews**

The pre-tests and post-tests were divided into two sessions to minimize the preschoolers' fatigue and classroom disruption as shown in Table 2. The first session assessed vocabulary from stories 1 and 2, while the second focused on stories 3 and 4. Following the intervention, the parents completed the questionnaires, and eight parents participated in the interviews.

Data analysis involved both quantitative and qualitative methods. The pre- and post-test results were analyzed using a pair sample t-test to determine if using a set of HELAs improved vocabulary knowledge. Data from the parent questionnaire was presented as mean scores and standard deviations, while qualitative data from the interviews was analyzed using content analysis, which involved identifying, coding, and categorizing key themes from the participants' responses.

Findings

This section presents the study's findings in two parts: the effects of using a set of HELAs to enhance Thai preschoolers' English receptive vocabulary knowledge, and the opinions of Thai LEP parents regarding the utilization of the HELAs.

The Effects of Using a Set of HELAs to Enhance Thai Preschoolers' English Receptive Vocabulary Knowledge

Quantitative Results

Table 3

Comparison of the Pre-Test and Post-Test Scores of the Preschoolers

	N	Total score	Mean	SD	Paired t-test (p)	Shapiro-Wilk (p)
Pre-test	**26**	**15**	**4.34**	**1.765**	**9.591(0.000)**	**0.924(0.055)**
Post-test	**26**	**15**	**10.00**	**2.952**		

Table 3 presents key statistics from pre- and post-vocabulary tests conducted with a sample size (N) of 26 participants. The Shapiro-Wilk test indicated that the difference between the post-test and the pre-test of preschoolers' vocabulary growth had a normal distribution (W = 0.924, p = 0.055); thus, the paired t-test statistic could be used to test the mean difference between both tests. The result showed that the post-test score (M = 10.00, SD = 1.765) was higher than the pre-test (M = 4.34, SD = 2.952) with a statistical significance (p = .000). The statistically significant improvement in post-test scores compared to pre-test scores suggests that the use of HELAs, which were specifically designed to promote vocabulary development, could enhance preschoolers' English receptive vocabulary knowledge.

Qualitative Findings

Additionally, qualitative findings from the interviews highlighted three key benefits of the HELAs that likely contributed to the vocabulary gains including providing frequent exposure to vocabulary, creating opportunities for deliberate learning of vocabulary, and promoting exposure to verbal and nonverbal representations of vocabulary.

First of all, six of the parents mentioned similarly that the HELAs provided their children with rich vocabulary encounters throughout the week which could enrich their children's learning of new vocabulary. One of the parents provided the following insights:

> *I think my child learned a lot of new vocabulary because he met these words many times when he did these activities during the week. I think it makes sense that the more my child meets these words, the more he could remember them. (Parent 1)*

Second, the vocabulary knowledge could be potentially enhanced by deliberate learning activities as all parents mentioned that using the picture card was the most useful and the most frequently used activity, followed by watching a vocabulary learning video. Some parents mentioned that while doing these two activities, the

children's attention was on linking words and their meanings, not other elements. This led to better and faster memorization of new words. As one parent expressed:

> *Personally, I think the picture card and vocabulary learning video were the most effective activities that helped my child learn new vocabulary. This is because it is easier when my child focuses only on learning the meaning of a single word. Learning word by word helped him remember new words more easily. (Parent 3)*

Third, a majority of parents also mentioned the benefit of the learning materials that presented or could be used to represent both illustrations and spoken words at the same time. In addition, four parents specifically mentioned that their children were likely to memorize the word more easily by connecting the illustration they saw and the word they heard. Provided below is an example of statements made by a parent:

> *I think the illustration was a very important element that helped my son remember new words faster and longer. My son could remember vocabulary easily because he connected what he saw and what he heard when watching the videos. (Parent 7)*

By integrating quantitative evidence demonstrating improved vocabulary scores with qualitative insights, the study supports the conclusion that HELAs serve as an effective strategy for enhancing English vocabulary development among EFL preschoolers.

The Opinion of Thai LEP Parents toward the Use of HELAs to Support Their Children's English Vocabulary Learning

Quantitative Results

Table 4

The Result of Parent's Opinions toward the Use of a Set of HELAs

Item	Mean	SD	Meaning
Content			
1. The content is interesting.	4.04	0.774	**Agree**
2. The content is age-appropriate.	4.04	0.824	**Agree**
3. The vocabulary is useful.	4.23	0.764	**Agree**
Design			
4. The design is interesting.	4.12	0.816	**Agree**
5. The design is age-appropriate.	4.23	0.765	**Agree**
Usability			
6. It is easy to use.	4.12	0.588	**Agree**
7. It is practical to use at home.	3.96	0.720	**Agree**
8. The guideline is clear.	4.31	0.549	**Agree**
Total	4.12	0.523	**Agree**

The result, as depicted in Table 4, suggests that LEP parents generally have positive opinions regarding the use of a set of HELAs in supporting their children's English vocabulary development. Specifically, regarding content, the parents agreed that the content was interesting (M = 4.04, SD = 0.774) and age-appropriate (M = 4.04, SD = 0.824), with useful vocabulary (M = 4.23, SD = 0.764). In terms of the design of HELAs, they also found it interesting (M = 4.12, SD = 0.816) and age-appropriate (M = 4.23, SD = 0.765). In addition, they perceived the usability positively, finding the provided HELAs easy to use (M = 4.12, SD = 0.588), practical for home use (M = 3.96, SD = 0.720), and with clear guidelines (M = 4.31, SD = 0.549). The total mean score across all aspects evaluated is 4.12 (SD = 0.523), indicating a consistent agreement among the parents regarding the use of the HELAs in supporting their children's English vocabulary development.

Qualitative Findings

Throughout the interviews, parents conveyed a sense of enthusiasm and positivity regarding using a set of HELAs. Their sentiments reflected their satisfaction with the use of HELAs, which they found to be practical and adaptable to their capabilities. The positive view on HELAs is evident in the following statement:

> *I think these activities were practical. They were very useful. It was a great experience. (Parent 2)*

> *I used the picture card several times a week until my child got all the words. It was very easy to use. I just showed the picture. My son had already learned these words from the videos he watched previously. I didn't have to teach him myself. I just played with him using the picture cards. (Parent 7)*

However, the findings from the interviews somewhat contrast with the results from the parent questionnaire when delving into specific activities. In the interviews, most parents expressed a positive opinion toward the use of fable videos, vocabulary videos, and picture cards. On the other hand, six out of eight parents found reading in English to be a challenging task even when the narration was simplified. The following statement reflects parents' opinions regarding the reading activity:

> *Most of the activities are practical and easy to use, except the reading activity because I am not good at reading or telling a story. So, I did this activity only once a week honestly. (Parent 1)*

This challenge persisted even when they were encouraged to read in Thai. This may be related to some parents' unfamiliarity with reading practices, as evidenced by one parent's comment:

> *We didn't do much reading at home back then. Actually, I rarely read with my children even in Thai. Reading is quite a new practice to me. So, reading in English is very challenging. (Parent 4)*

The qualitative finding suggests that LEP parents tended to rely on educational media and a task requiring simpler English practice, such as using picture cards. However, reading in English was perceived as demanding both greater effort and a higher demand for English proficiency. Even reading in Thai was perceived as challenging, as reading can be an uncommon practice in the participants' households. This unfamiliarity with reading likely contributed to the lower preference for reading activities.

Discussion

The Effect of Using a Set of HELAs to Enhance English Receptive Vocabulary Knowledge among Thai Preschoolers

This study revealed that using a set of HELAs by LEP parents significantly enhanced Thai preschoolers' receptive vocabulary development. This finding aligns with previous studies that indicated the positive effects of HELAs on vocabulary learning among EFL preschoolers (Khamsuk & Whanchit, 2021; Lai et al., 2024; Petchpasert, 2014; Sun et al., 2018; Zhang et al., 2021). The insight from the interview suggests that the positive outcomes likely come from the variety of HELAs that create a rich learning environment.

Exploring the elements that led to vocabulary development, frequent exposure to target vocabulary emerged as a key element. To illustrate this point, consider the target vocabulary "hedgehog" presented in the first week's story, "Hedgehog, Mouse, and Tiger." The pre-test conducted at the beginning of week one revealed that most preschoolers failed to identify the picture corresponding to "hedgehog," indicating a lack of prior knowledge of the word. However, the post-test administered at the end of week two demonstrated a significant improvement, with a majority of them successfully identifying the correct answer. This improvement could be attributed to the preschoolers encountering the word "hedgehog" numerous times during the four HELAs conducted in the first week. Supporting this claim, findings from parent interviews revealed that most parents noticed their children acquiring vocabulary due to repeated encounters with target words through the four weekly HELAs. As all parents confirmed conducting all activities at least once a week, this suggests a high probability that consistent and varied encounters with target vocabulary played a crucial role in enhancing vocabulary development. This aligns with existing literature emphasizing the importance of frequent exposure to target vocabulary for L2/FL vocabulary development (Butler, 2019; González-Fernández & Schmitt, 2017; Nation, 2001). Although the exact number of encounters needed for complete L2/FL vocabulary acquisition remains under debate, more encounters likely lead to better outcomes (Butler, 2019; González-Fernández & Schmitt, 2017; Webb & Nation, 2017). This finding also backs up the results of previous studies that have emphasized the role of HELAs in providing rich language exposure, leading to EFL preschoolers' vocabulary development (Khamsuk & Whanchit, 2021; Lai et al., 2024; Petchpasert, 2014; Sun et al., 2018; Zhang et al., 2021).

However, frequent encounters alone do not guarantee robust vocabulary development (Webb & Nation, 2017). To illustrate, the first exposure to the word "hedgehog" likely occurred when the preschoolers watched the fable video "Hedgehog,

Mouse, and Tiger," the first activity of the first week. While watching, the preschoolers may initially notice the word "hedgehog" after hearing it a few times, and connect it to the accompanying illustration. However, their primary focus might be on the overall story, leading to a superficial retention of the word "hedgehog." This notion was supported by existing literature that highlights the limitations of unintentional exposure. It assumes that while such exposure may promote noticing new words, this noticing is often superficial and may not be sufficient for long-term memory (González-Fernández & Schmitt, 2017; Nation, 2001; Webb & Nation, 2017). Thus, the significant improvement observed in preschoolers' scores on the post-test likely suggests that the effectiveness of HELA programs in promoting vocabulary development could be attributed to additional factors beyond mere exposure to new words.

Concerning other possible factors, this study suggests that HELAs promoting deliberate learning of target words, including watching vocabulary videos, practicing with picture cards, and reading with parents, play a crucial role in enriching the quality of encounters with new vocabulary. Parent interviews support this notion, with all parents identifying picture cards and vocabulary videos as the most helpful for helping their children learn new vocabulary. The deliberate learning opportunities to learn target words offered by these activities likely explain their high regard. For instance, watching vocabulary videos provides focused instruction, unlike the initial, unintentional exposure through the fable video. Vocabulary videos feature teachers explicitly explaining the meaning and pronunciation of words, for example, "hedgehog," alongside visual illustrations. This focused instruction can deepen the preschoolers' retention of the previously encountered word "hedgehog" (Webb & Nation, 2017). Moreover, after encountering new words in the vocabulary videos, practicing with picture cards was crucial in promoting retrieval. When asked to name the picture of a spiky animal on the card, the preschoolers would likely try to recall and articulate the word "hedgehog." This active process of recalling and producing the word strengthens the connection between the visual representation and the spoken word (Nation, 2001). Moreover, as practicing with cards focused on small sets of vocabulary at a time, this allowed the preschoolers to focus on vocabulary they had not yet mastered and work on it with their parents, as reported by one of the parents.

Apart from watching the vocabulary videos and using the picture cards, reading in this study also incorporated deliberate learning. While traditional HELA often emphasizes parents reading aloud to their children in English (Zhang et al., 2021), considering the preschoolers' undeveloped reading skills and LEP parents' potential limitations in reading English, this study utilized a more targeted approach using the point-to-print technique. The LEP parents were instructed to read with their children in Thai, and they pointed at illustrations of characters, things, or actions in the book, prompting their children to name them in English. This technique could help the preschoolers connect the words to the broader scene and actions, potentially leading to improved vocabulary retention (Nation, 2001).

The three aforementioned HELAs facilitated a deliberate learning process that is considered an effective method for acquiring significant vocabulary within a short period with long-term retention (González-Fernández & Schmitt, 2017; Nation, 2001). Khamsuk and Whanchit's (2021) study further supports this notion by demonstrating

that explicitly teaching a small amount of English vocabulary during Thai storytelling at home significantly improved Thai preschoolers' English vocabulary knowledge. Building on this finding, this study contributes to the field by suggesting that HELAs do not only provide rich exposure to language, but when well-designed, they can also promote deliberate learning, which can enrich encounters with new words and contribute to vocabulary development.

In addition to the benefits that emerged from the use of HELAs, this study adds to the existing literature by highlighting the benefits of utilizing learning materials that combine verbal and non-verbal codes (Khamsuk & Whanchit, 2021; Wong & Samudra, 2021). This finding is particularly relevant in the home environment, where preschoolers may benefit from available learning materials that present visual and verbal information together, such as electronic books, digital pens, and TV programs (Choi et al., 2019; Zhang et al., 2021). As mentioned by the parents in this study, seeing the illustrations and hearing words at the same time while watching the videos helped the preschoolers effectively associate the spoken word with its visual representation. Many educators support the idea that this association could aid in better understanding and retention of the learned vocabulary (Nation, 2001; Wong & Samudra, 2021).

As discussed previously, the findings of this study highlight the potential of using various HELAs to empower LEP parents to create rich learning environments that can foster their children's English vocabulary development. These activities provide repeated encounters with target vocabulary, but with varying levels of deliberate learning. Also, learning materials that utilize both visuals and sounds further promote vocabulary learning. While the lack of a comparison group, such as those using only a single HELA, prevents drawing a firm conclusion on whether using multiple HELAs is definitively more effective than using a single one, incorporating diverse activities remains valuable in promoting vocabulary learning, as demonstrated in this study.

Opinions of Thai LEP Parents regarding the Use of a Set of HELAs

Overall, the findings revealed Thai LEP parents' positive opinions toward the use of HELAs. However, the insights from the interviews also showed varying opinions on particular HELA. Notably, media-based activities (videos) received strong support, likely because they effectively compensate for LEP parents' language barriers. This finding supports existing research demonstrating that media-based activities serve as useful tools for LEP parents (Forey et al., 2016; Lee, 2010; Sun et al., 2018; Zhang et al., 2021). Moreover, picture cards garnered positive responses as they were considered less instruction-heavy. Interestingly, the findings suggested that picture cards might not require direct vocabulary teaching from parents, as children may already have acquired some vocabulary knowledge through prior media exposure activities (watching fables and vocabulary videos). This finding points toward the potential of combining media-based activities with simple follow-up practices such as picture cards as a practical approach for LEP parents.

However, the study revealed the challenges faced by the parents in reading activities. Despite efforts such as simplifying reading texts, encouraging them to read in Thai using the point-to-print technique, and providing them guidance for reading, persistent challenges were evident. This contrasts with a dialog reading study where

Thai parents found reading to be practical (Petchpasert, 2014). A potential contributing factor to this difference could be the higher English proficiency of parents in the previous study as they perceived their English proficiency to be moderate in all skills. This underscores the significant role of English proficiency in shaping parents' preferences for and effective use of HELAs (Forey et al., 2016; Lee, 2010). Furthermore, this finding supports the previous study (Lai et al., 2024) which emphasized the need to train parents in facilitating HELAs. While weekly guideline videos were provided for reading activities, the lack of in-person training due to the COVID-19 pandemic might have limited parents in acquiring essential reading skills. This could also be a plausible explanation for why reading was perceived as more challenging to adopt compared to others.

Implications

The finding of this study supports the use of various HELAs that do not require a high level of English proficiency and can be effectively utilized by LEP parents. These HELAs may include media-based activities, picture cards, and potentially simpler reading materials, all of which can offer a wide range of learning conditions for vocabulary learning. Understanding the benefits and learning how to use these activities can empower parents to create a learning environment for their children at home. However, the finding also shows that reading activities, even when encouraged to do in Thai, seem impractical for the parents in this study. Therefore, if reading is included, it should be well-designed and consider parents' English proficiency. This study further underscores the need for policies and support from educators and other stakeholders in the field of early English language education to actively engage LEP parents. Schools and teachers can collaborate with LEP parents by offering resources, workshops, and guidance on how to implement HELAs at home. Supporting their involvement can lead to more holistic and successful language learning among young EFL learners.

Limitations and Recommendations for Future Studies

The outcomes of the present study were influenced by several limitations. Concerning the research design, this study included a small number of participants, and there was a lack of a comparison group, which weakened the argument for the effectiveness of the HELAs. The inclusion of more participants and the presence of a comparison group could improve the validity and the generalization of the findings. Furthermore, the COVID-19 pandemic prevented conducting home observations, which could have provided valuable insights into how parents utilize HELAs in their home environment. Future research, if feasible, could incorporate home visits or observations to gain a more comprehensive understanding of such practices. Moreover, the finding of this study is limited by not including the perspectives of the preschoolers themselves and a parent whose child showed the least improvement on the post-test. Including their experiences will further the understanding of HELAs and young learners' English language development.

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Gender and Situational Variation of Pitch Dynamism in Thai Speakers

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Abstract

Human physiology confirms that male and female voices exhibit different fundamental frequencies (F0) intrinsically. However, whether the use of F0 in everyday speech differs between males and females remains contentious. Perceptually, female speech is often considered more fluctuating, swoopy, and melodic compared to male speech. This study aims to investigate this issue by revisiting methods of measuring F0 in utterances to determine whether the differences between male and female speakers mentioned above exist. Pitch dynamism, defined as a two-dimensional value (x, y) comprising pitch perturbation and pitch variance, has been selected as the acoustic variable. Additionally, this study examines the influence of situational context on utterance F0. Recordings were collected from six native Thai students (three males and three females), involving both reading speech and spontaneous speech. The results indicate a significant difference in utterance F0 between male and female speakers, with pitch variance serving as the primary distinguishing cue. Furthermore, the analysis reveals that situational context significantly affects the realization of utterance F0.

Keywords: F0; pitch dynamism; gender variation; situational contexts; Thai language

Introduction

Sex[1] is an important factor in the study of phonetic variation, with gender as a variable. Sound pronunciation and articulation are mainly the consequences of vocal tract anatomy. After the air is inhaled and leaves the lungs, it passes through the vocal folds, causing the membranes to vibrate. This vibration generates a wave, and the frequency of the vibration is called the fundamental frequency (also: F0), which correlates with the pitch of the voice according to the law of vibration: if an object creating a sound wave has a high vibration rate, it is associated with a high pitch. Ohala

[1] Noted that sex and gender refer to different concepts. Sex mainly refers to biological differences, while anything resulting from sex is primarily influenced by physiological factors. Gender, on the other hand, refers to the sexual identity one performs in society, regardless of social norms and expectations. Eckert and McConnell-Ginet (2003) regard sex as a social elaboration of biological differences.

(1984) proposed that voices produced by living beings are innate, having a genetic disposition, and there is a dimorphism, a condition where the two sexes of the same species exhibit different characteristics beyond the differences in their sexual organs, in the vocal tract anatomy. Subsequently, Titze (1989) drew a comparison between male and female larynxes in size, vocal fold membranous length, elasticity of tissue, and pre-phonatory glottal shape. They cited Kahane's (1978) findings that male thyroid cartilage is approximately 20% larger than female thyroid cartilage and Hirano's (1983) findings that the membranous length of the vocal folds grows at the rate of 0.7 mm per year for males and 0.4 mm for females. When fully developed, the male membrane is approximately 16 mm, while it is 10 mm for females. Titze (1989) observed the relationship between the growth of the membrane and fundamental frequency, which shows an inversed relationship: the larger the membrane, the lower the fundamental frequency. This fact has been summarized in Simpson's (2009) work regarding phonetic differences between male and female speech, noting that male speakers tend to exhibit a lower fundamental frequency than female speakers due to thicker and longer vocal fold membranes. Furthermore, this study also mentioned that the vocal tract length differs between males and females, which significantly affects the F0 of male and female speaker. Accordingly, the adult male vocal tract has an average length of 17-18 cm, whereas the adult female vocal tract has an average length of 14.5 cm. Thus, male vocals have a lower pitch than female voices due to lower resonance frequencies caused by this difference in vocal tract length. Therefore, it is widely agreed that speaker's fundamental frequency is the most robust factor helping in the identification of speaker's sex from their own voices (Childers & Wu, 1991; Crystal, 1975; Wu & Childers, 1991)

However, irrespective of the physiology, it remains controversial whether males' use of F0 really differs from females'. Crystal's (1975) observation suggested that crucial suprasegmental differences between the actual speech of males and females in the majority of languages probably exist, despite little investigation. Some studies believe that melodic and fluctuating speech are characteristics associated with typical female speech (Crystal, 1975; Wu & Childers, 1991). Moreover, Austin (1965) also mentioned that from the view of folk linguistics (non-phonetic and experimental), females' use of F0 in utterances is believed to be "swoopy." Crystal (1975) also mentioned anecdotal observations of these characteristics, such as clucking like an old hen, glissando effects, complex tone usage, and a simpering voice. As a result, there are attempts to find the acoustic correlates of this type of feminine speech. Generally, the results from many studies concerning the differences between males' and females' utterance F0, irrespective of their intrinsic F0, vary, and a strong acoustic conclusion does not exist yet (mainly due to research design and the object language, see methodology and discussion).

Aside from its phonetic function, pitch can also serve as a clue to phonological distinctions in various languages. In Thai, the target language of this study, different realizations of F0 at the lexical level lead to distinct word meanings. Thai contrasts five lexical tones (Naksakul, 2016), as shown in Table 1. Mid, low, and high tones are level

tones, whereas falling and rising tones are contour tones. Moreover, pitch in Thai can be used at the interactional level in addition to its use as lexical tones. According to Luksaneeyanawin's (1998) study on Thai intonation, two key factors influence how people modify their pitch: (1) grammatical cues and (2) attitudinal cues. This aligns with Abramson's (1979) research on the impact of lexical tone on sentence prosody in Thai. They showed that the final word in a sentence—typically a grammatical word or sentence particle—indicates the sentence prosody in non-emotive speech, or speech devoid of attitudinal cues.

Table 1
Lexical Tones in Thai

Tone	Word	Transcription	Gloss
Mid	คา	/k^{h}āː/	'To stuck'
Low	ข่า	/k^{h}àː/	'galangal'
Falling	ฆ่า	/k^{h}âː/	'To kill'
High	ค้า	/k^{h}áː/	'To trade'
Rising	ขา	/k^{h}ǎː/	'leg'

Expanding on Abramson's research, Luksaneeyanawin (1998) discovered that, when compared to statements, the pitch range and level in yes-or-no questions and incomplete utterances are, respectively, narrower, and higher. Furthermore, they found that emotional cues or attitudinal meanings—such as emphatic, angry, pleasant, or surprised—also have a significant influence on how Thai sentences sound. These findings are based on Uldall's (1972) theory on intonational meanings. However, despite a slight alteration in the realization of tones in sentences, the intonation system has no effect on the phonological tones. These two studies show that pitch in Thai, particularly pitch at the utterance level, can indicate the speaker's attitude meaning. Pitch can also be seen as a linguistic variable that reflects the speaker's construction of identity.

Therefore, adapting from Luksaneeyanawin's (1998) findings, situational context is also a significant factor affecting one's modification of the fundamental frequency in utterance. Many studies indicate a relationship between pitch and the type of question being asked (Gósy & Terken, 1994; Sicoli et al., 2015). Additionally, some findings reveal the interaction of imperative utterances with realized F0 as well (Sun et al., 2008).

Thus, this research intends to study and compare the use of fundamental frequency by male and female speakers in different situational contexts. Both gender and situation, according to acoustic and perceptual views, tend to have a relationship and interaction with the speaker's fundamental frequency.

Literature Review

As aforementioned, several studies have been conducted to investigate this issue. Early studies mainly focused on intonational differences, such as Eble's (1972), which detected certain intonational patterns predominating in female speech, and Pellowe and Jones' (1978), which suggested that female speakers exhibited more rising tones than their male counterparts.

The first attempt to find the acoustic correlate of these stereotypes was made by Aronovitch (1976). A perception and evaluation test was conducted by recording connected speech obtained through a picture description task, followed by a rating task with polar adjectives (e.g., dominant/submissive). Intensity and fundamental frequency, along with their variance, were used by his participants to categorize speakers as either male or female. It is important to note that the main purpose of this research was to find the relationship between personality judgments and the speaker's sex as inferred from speech. Therefore, the correlates obtained were merely "by-products" of Aronovitch's work. Nevertheless, this study paved the way for other researchers to further investigate these correlates and the differences between male and female speech in terms of pitch realized at the utterance level.

Woods (1992) subsequently studied sex-specific pitch and intonational features in British English. Speech data were collected from 10 male and 10 female informants (five 6-7 years old speakers, and another five 27-32 years old speakers). The findings significantly show that female speakers prefer to use fall-rise and high-fall utterance F0, whereas male speakers prefer level utterance F0. This pattern is consistent in two speech settings: conversation and interview. Snidecor (1951), on the other hand, discovered that males exhibit a greater functional pitch range than females. He found that female speakers possess a slower rate of pitch change than male speakers. Tielen (1989) investigated this issue with a different object language compared to previous studies: Dutch. Ten male and 10 female speakers aged between 40-45 years were asked to produce 13 short sentences and spontaneous speech. The results showed that although male speakers possess a wider range of F0 (13 semitones), in contrast to female speakers (10 semitones), female speakers' utterance F0 has significantly larger variance (calculated by standard deviation [SD]) than male speakers. Henton (1995) found, surprisingly, no difference in male and female use of pitch in utterance, mainly due to the research design: the recordings used for analysis were from another research project about nasality in English and French.

According to previous literature, there are three primary conclusions regarding whether the fundamental frequency (F0) of male speech differs from that of female speech: (1) female speakers exhibit more fluctuation in F0 during utterances; (2) male speakers exhibit more fluctuation in F0 during utterances; and (3) there is no significant difference in F0 fluctuation between male and female speakers during utterances. It is important to consider the Just Noticeable Difference (JND) in F0 perception when interpreting these findings. JND refers to the smallest change in a stimulus that can be detected by a listener. In the context of F0, this means that even if there are measurable

differences in pitch fluctuation between males and females, these differences may not be perceptible to listeners if they fall below the JND.

Moreover, these studies selected different variables—different acoustic correlates—as tools to find the answer, which is another main reason why their results are highly controversial. However, there is a tendency in later works (Henton, 1995; Tielen, 1989) to hypothesize the variance and dynamism of pitch as primary correlates of the folk linguistic description of female speech. By the term pitch variance, which Tielen (1989) used to show the difference between utterance F0 in male and female speech, it is well understood that this refers to the SD of different pitch values in one utterance. Pitch dynamism, according to Henton (1995), is defined as the change in F0 over a specific amount of time (30 milliseconds). For instance, if the F0 of utterance A measured at 1 millisecond is 235 Hz and the F0 measured at 30 milliseconds is 200 Hz, the pitch dynamism of utterance A would be 35 Hz. It should be noted that Henton converted hertz to semitones in her work. While this method of measuring pitch dynamism considers time as a factor, it is, according to Henton (1995) herself, a coarse way of obtaining pitch dynamism, posing limitations on her study. This is because there is a possibility of drastic, abrupt, or sudden pitch rises or falls occurring between 1 and 30 milliseconds. The F0 difference between 1 and 30 milliseconds does not fully represent the ongoing dynamism of the F0 throughout the entire utterance.

Regarding situational contexts that affect a speaker's modification of F0, Brinckmann and Benzmüller (1999) investigated the relationship between utterance type and F0 contour in German. Their findings suggested that the F0 in both wh-questions and declarative questions fluctuates more, with a higher range between F0 onset and F0 offset, compared to statements or yes/no questions. In contrast, Sun et al. (2008) studied pitch in imperative sentences in Standard Chinese and found that, aside from being raised compared to declarative sentences, the pitch range of imperative sentences in Standard Chinese tends to be compressed, implying a different usage of F0 in another specific context. From the two studies above, the idea that situational context is another important factor determining the projection and realization of F0 in a specific utterance cannot be dismissed.

Research Questions

Due to the gap in previous research, which failed to clearly identify the acoustic correlates of folk linguistic and stereotypical descriptions of female speech and could not quantitatively demonstrate whether a difference in F0 usage between male and female speech exists, this study aims to (1) examine whether male speech differs from female speech in terms of pitch, employing acoustic values and measurement methods designed for this purpose, and (2) explore whether the relationship between context and F0 realization in utterances exists. The study focuses on Thai, a tonal language, with the goal of attempting to offer an interesting comparison to previous research primarily conducted on stress languages such as English, French, and Dutch, to determine whether tonal characteristics influence F0 in utterances.

Methodology

Participants

The voice data were recorded from six humanities students, three males and three females, aged between 20-22 years old. All participants were native Thai speakers without any speaking problems or disorders.

Stimuli

Each of them was asked to read five stimuli sentences with no repetition, as if they were literally speaking those sentences. Each stimuli sentence, which typical Thai university students are likely to use in their daily life, represented a conversational context: affirmative, question, negation, imperative, and request. Note that, in order to create a significant distinction, wh-questions were selected rather than yes/no questions (see literature review). After finishing the stimuli sentences, they were asked to describe a picture to obtain simultaneous speech data. The total number of tokens will be six participants x six stimuli (five stimuli sentences + one connected speech) = 36 tokens.

Regarding the control of the number of words, syllables, and tonal distributions between the sentences, as well as repetitions, it should be noted that no such control was implemented in this study. This decision was made to maintain the naturalness of the speech samples. The primary goal was to capture authentic speech patterns without imposing artificial constraints that might influence the natural flow of the utterances. While this approach may introduce variability, it ensures that the data more accurately reflect spontaneous speech. Thus, the average F0 for each speaker eliciting each tone was not measured.

Moreover, this study did not emphasize lexical tone but rather focused on the long-term F0 in utterances, which is automatically normalized through the measurement of coefficient values. Lexical tones in connected speech are coarticulated and have a minimal effect on long-term F0. Nevertheless, an effort was made to control the number of syllables in the stimuli sentences. The affirmative, question, and negation sentences have a relatively similar number of syllables (8-9), whereas the imperative and request sentences have a similar number of syllables (13-14). The words in the stimuli were also controlled to be monosyllabic. Both the stimuli sentences and connected speech were analyzed for pitch dynamism (see measurement and variables sections).

Table 2

Stimuli Sentences, Alongside their Phonetic Transcription and Translation

Sentence type	Stimuli (In Thai script and phonetic transcription)	Translation
Affirmative	วันนี้กูมีเรียนตอนบ่ายโมง wān níː kūː mīː riān tɔ̄ːn bàːj mōːŋ	‘Today I have a class at 13.00’
Question	พวกมึงจะไปนั่งที่ไหนกัน pʰuâk mūŋ tɕàʔ pāj nâŋ tʰîː nǎj kān	‘Where are you guys going to sit (and do something)’
Negation	กูคงไม่ได้ไปกินข้าวด้วยนะ	‘I could not go to eat with you’

	kūː kʰōŋ mâj dâj pāj kīn kʰâːw duâj náʔ	
Imperative	มึงต้องส่งงานมาให้กู ไม่งั้นกูทำต่อไม่ได้ mɯ̄ŋ tɔ̂ŋ sòŋ ŋāːn māː hâj kūː mâj ŋán kūː tʰām tɔ̀ː mâj dâj	‘You must send me the works. Otherwise, I can’t continue doing it’
Request	มึง หารกันได้ปะ กูว่ากูกินจานนี้ไม่หมด mɯ̄ŋ hăːn kān dâj pàʔ kūː wâː kūː kīn tɕāːn níː mâj mòt	‘Can we share this thing? I think I couldn’t finish it by myself’

Figure 1

Illustration of Elicitation of Simultaneous Speech (Jongsukkijpanich, 2021)

Recordings

The recording was made in a silent room using a Zoom H1N microphone covered with a windscreen, placed on a microphone stand. The distance from the microphone to the speaker’s mouth was approximately 15 centimeters. Note that due to the ongoing COVID-19 situation in April 2022 in Bangkok, Thailand, participants were required to wear face masks during the recordings to protect themselves from the virus, as people usually refused to take off their face masks unless it absolutely necessary. Research has shown that wearing face masks can have a slight effect on acoustic speech parameters, such as formant frequencies and center of gravity (Corey et al., 2020; Toscano & Toscano, 2021). However, these effects are generally minimal and do not significantly impact the reliability of F0 measurements. The sampling rate was set to 41,000 Hz, and the recordings were directly captured in Audacity. Participants were asked to speak each sentence as naturally as possible, pause for about 5-7 seconds, and then start speaking another sentence. After recording the read speech, the task description for recording simultaneous speech was given orally by the researcher, and then the stimulus picture was shown to the participant.

Measurement

The recordings were subsequently imported into PRAAT (Boersma & Weenink, 2022). They were later segmented to the points where pitch begins and stops being evident. Within the simultaneously connected speech, the initial utterance, which aligns with the definition of an utterance—a speech with a substantial pause at the beginning and end (approximately 5 seconds)—was selected. The first and last 10% of the segmented utterances were then excised. Following this, the fundamental frequency (F0) of each utterance was measured every 1 millisecond using the pitch listing feature in PRAAT. Any undefined F0 values were replaced with 0. A MATLAB script was utilized to plot the values on a graph, generate a trendline, and compute the coefficients (perturbation), SDs (variance), and other relevant metrics.

Variable

From the literature review, I selected pitch dynamism (Henton, 1995) as an acoustic measure to analyze F0 usage in utterances. As defined, pitch dynamism captures the variation in pitch over time, revealing how speakers modulate their F0 throughout an utterance. However, as noted previously, it lacks the precision needed to fully capture these pitch changes. Fuchs (2018) even proposed using pitch variance as an alternative definition of pitch dynamism to address this limitation. While the SD of utterance F0 can also reveal how speakers modulate pitch, it loses the temporal dimension, which is crucial for understanding F0 usage within an utterance.

Since pitch dynamism cannot be solely determined by the change in pitch over a specific time limit, I propose combining both aspects of dynamism, time, and variance, as used in previous literature. This redefines pitch dynamism with the following definition: pitch dynamism is a two-dimensional coordinate value (x, y) comprised of (1) pitch perturbation (X-axis) and (2) pitch variance (Y-axis).

Pitch perturbation can be defined as the rate and directionality of F0 change over time. It is obtained by measuring the coefficient value/slope from the linear equation $y = ax + b$ created by plotting a trendline through an utterance F0 plot, which is generated by measuring F0 every 1 millisecond. The rate of F0 change is represented by the absolute coefficient value: a higher value indicates a faster rate. The directionality is then represented by the polarity of the coefficient value: positive for rising pitch, negative for falling pitch.

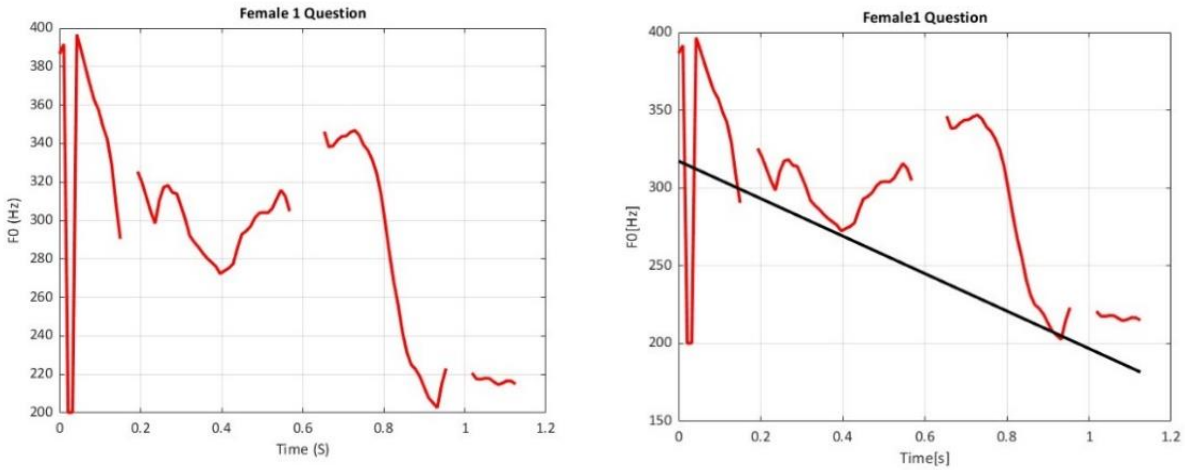
Pitch variance can be defined as the spread of the F0 value within a specific utterance. It is obtained by calculating the SD from the F0 measurement: a higher value indicates greater fluctuation. While pitch perturbation primarily addresses the F0 movement in an utterance, including its directionality, pitch variance focuses on the spread of F0 values. With these two values, pitch dynamism can be plotted on a graph. This method and definition of pitch dynamism, compared to Henton's (1995), are capable of capturing not only the fine-grained pitch movement and directionality over time, but also the variance of the pitch within a specific utterance.

For the statistical and quantitative analysis, t-test and f-test were used to determine whether the different between pitch perturbation and pitch variance,

respectively, in male and female speech was statistically significant. Additionally, ANOVA was used to investigate the interplay between the gender variable and situational variable.

Figure 2

Sample F0/time Plot without (right) and with (left) Linear Trendline of a Question Sentence



Results

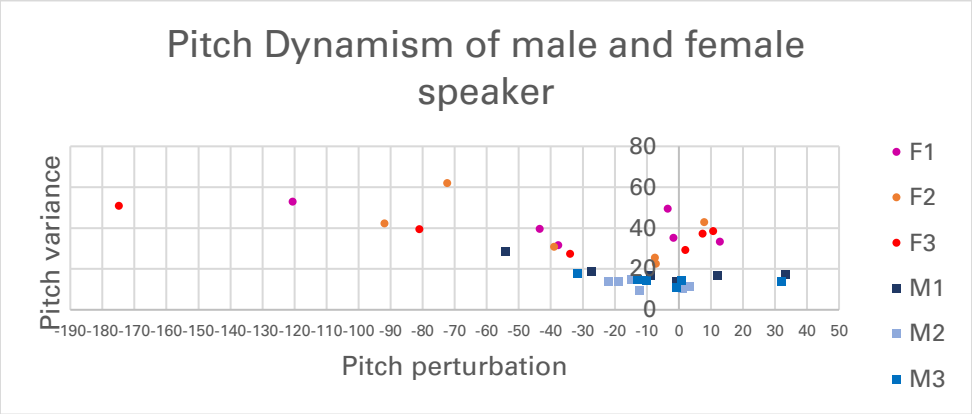
Gender Factor

The plot in Figure 3 provides a visual representation of pitch dynamism for both male and female speakers, specifically examining their pitch variance and perturbation, addressing the first research question.

Most male speakers exhibit a pitch variance below 20, which is relatively low compared to female counterparts, indicating that the spread of their F0 values within a specific utterance is relatively narrow. This suggests that male speakers tend to maintain a more stable pitch range, with less fluctuation in their voice. Additionally, the pitch perturbation for male speakers primarily ranges between -40 and 20. This range demonstrates that the rate and directionality of their pitch changes are generally less extreme. An exception to this pattern was observed with Male Speaker 1 during a question, where the pitch perturbation was higher. This anomaly can be attributed to the situational context.

Figure 3

Plotted Pitch Dynamism of Male and Female Speaker from all Tokens (Both Elicited Read and Spontaneous Connected Speech)



In contrast, female speakers show a wider range of pitch variance, with all of the values extending beyond 20, suggesting variability of the pitch within utterances and a greater range of vocal modulation. Furthermore, female speakers display a broader spectrum of pitch perturbation, ranging from -180 to 50. This broader range suggests a more dynamic use of pitch, encompassing both rapid and varied directionality of F0 changes.

The data clearly demonstrate distinct differences in how male and female speakers use F0 in their utterances. Male speakers tend to have a more constrained pitch variance and perturbation, indicating a more stable and less fluctuating pitch. This stable pitch usage in males contrasts with the greater pitch dynamism observed in female speakers, who exhibit both higher pitch variance and broader pitch perturbation.

By analyzing the pitch variance and perturbation, it becomes evident that female speakers engage in a more dynamic vocal pattern compared to their male counterparts. This dynamic pattern is characterized by rapid and varied changes in pitch directionality and rate, which contribute to a more fluctuating and melodious speech quality. On the other hand, male speakers' more constrained pitch modulation reflects a steadier and less variable vocal pattern.

These observations provide a foundational basis for understanding the acoustic correlates of gender differences in speech. The broader pitch variance and perturbation in female speech are consistent with the stereotype that female speakers often have a more melodious sound.

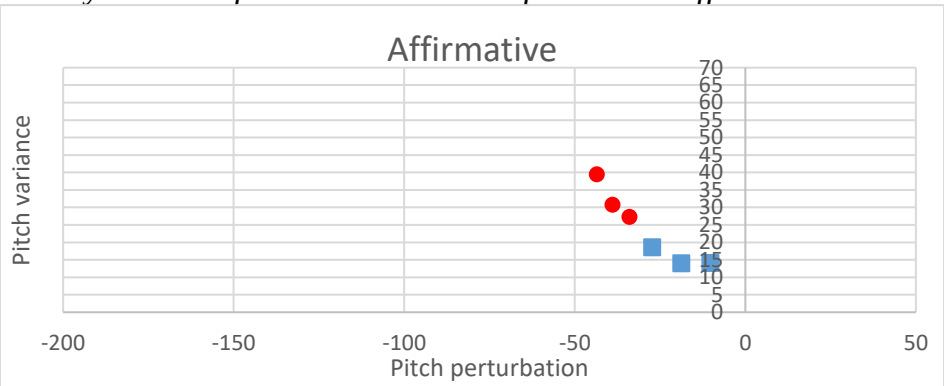
Situational Factor

The situational factor revealed distinct patterns of pitch variance and perturbation based on the type of utterance. Figures 4-9 illustrate these patterns for affirmative, question, and negation contexts, with red dots representing female speakers and blue dots representing male speakers. In affirmative utterances (Figure 4), both male and female speakers show relatively low pitch variance and perturbation. Female

speakers, however, display slightly higher values in both dimensions compared to their male counterparts. This indicates a tendency for female speakers to use a somewhat more dynamic pitch range even in affirmative contexts, but the overall dynamism is still restrained.

Figure 4

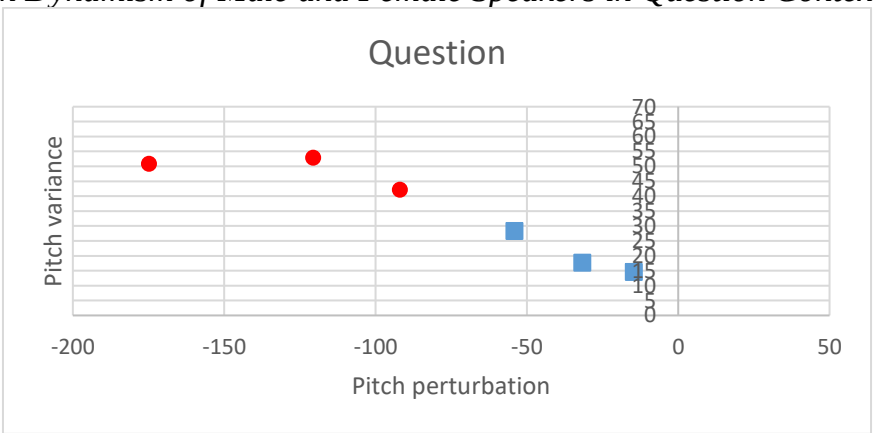
Plotted Pitch Dynamism of Male and Female Speakers in Affirmative Context



Question utterances (Figure 5) exhibit the most distinctive pattern. Female speakers show a broad range of pitch perturbation, extending significantly into the negative direction. This suggests that questions prompt a considerable lowering of pitch among female speakers, potentially as a strategy to convey uncertainty or inquisitiveness. Male speakers also show a noticeable pitch perturbation, but the range is less extreme compared to females. This highlights a situational context where the dynamic use of pitch is markedly influenced by gender, with females demonstrating greater variability.

Figure 5

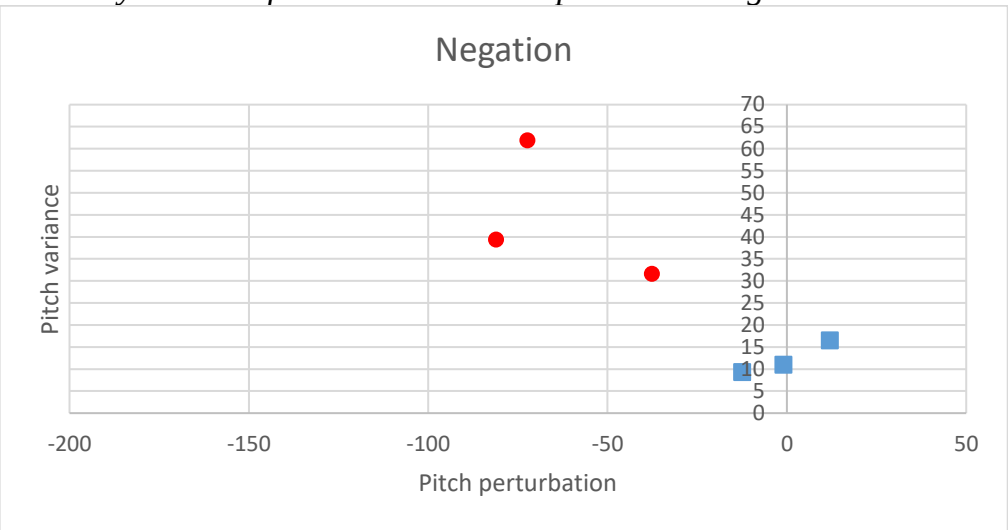
Plotted Pitch Dynamism of Male and Female Speakers in Question Context



Negation utterances (Figure 6) present a diverse combination of pitch perturbation and variance. Female speakers, in particular, exhibit wide-ranging pitch perturbation and pitch variance, indicating a more pronounced modulation in their speech.

Figure 6

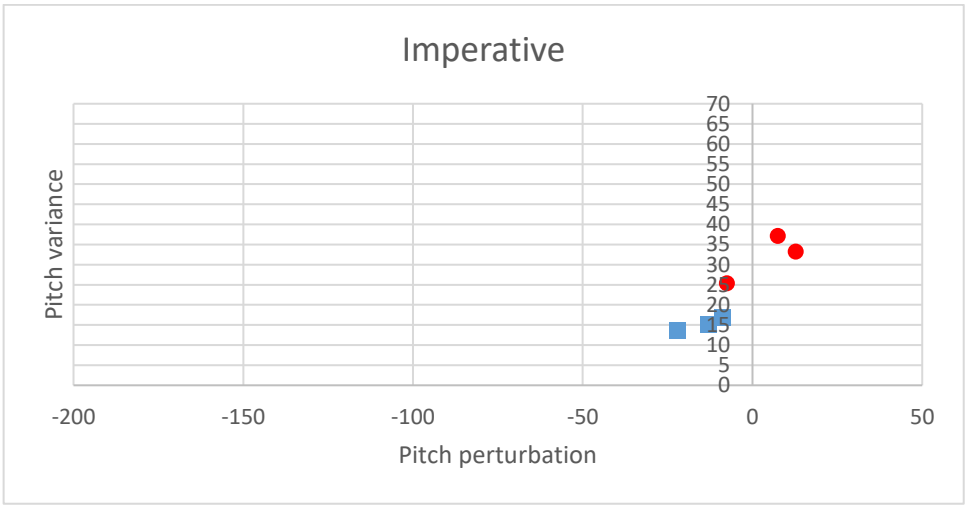
Plotted Pitch Dynamism of Male and Female Speakers in Negation Context



In imperative utterances (Figure 7), there is an interspeaker variation in pitch variance, predominantly influenced by gender. Although female speakers show higher pitch variance, the pitch perturbation remains close to zero for both genders, indicating that while the pitch range varies, the overall direction of pitch change is stable.

Figure 7

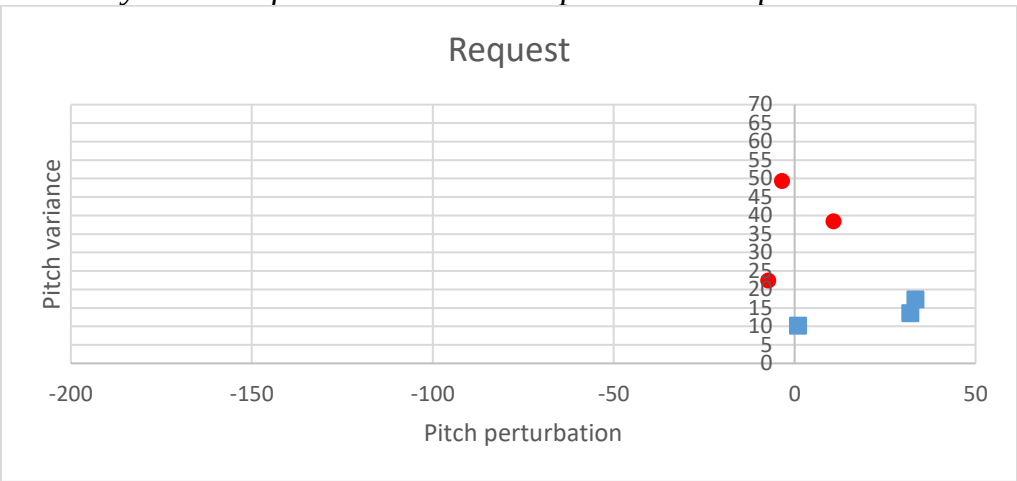
Plotted Pitch Dynamism of Male and Female Speakers in Imperative Context



Request utterances (Figure 8) show a pattern similar to imperatives, with female speakers exhibiting higher pitch variance. Surprisingly, male speakers tend to have a much more fluctuating pitch perturbation in comparison to female counterparts. This could be due to the polite and softer tone typically used in requests, where abrupt pitch changes might be less frequent.

Figure 8

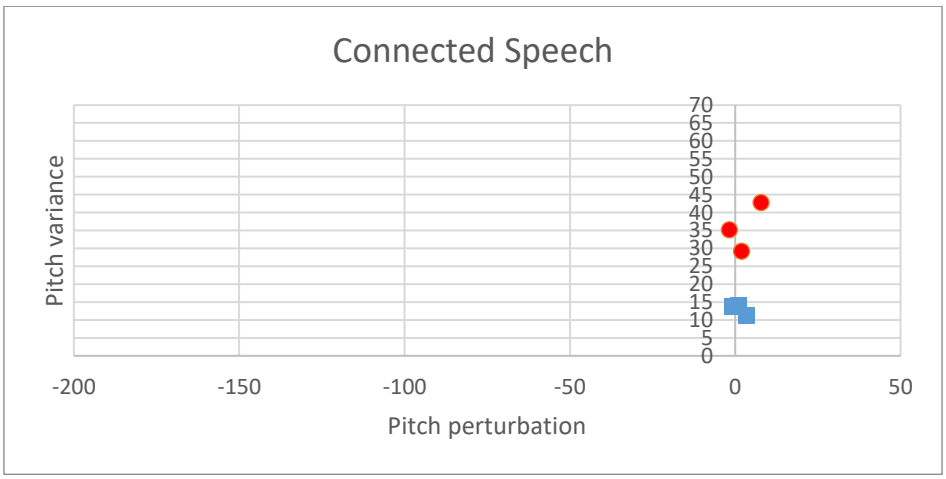
Plotted Pitch Dynamism of Male and Female Speakers in Request Context



In the connected speech, female speakers generally have higher pitch variance and a slightly wider range of pitch perturbation, indicating more dynamic and varied use of pitch in connected speech, whereas male speakers tend to have lower pitch variance and more restrained pitch perturbation, reflecting a more stable and consistent pitch usage. These patterns align with the initial observations from the study, suggesting that gender significantly influences pitch usage, with female speakers exhibiting greater vocal modulation compared to male speakers. Note that the small range of pitch perturbation here results from connected speech mainly containing affirmative sentences.

Figure 9

Plotted Pitch Dynamism of Male and Female Speakers in Connected Speech



Analysis

Figure 9 displays pitch dynamism by gender, and the fact that female speakers exhibit a wider range of pitch dynamism compared to males is demonstrated visually. Subsequently, statistical tests were conducted to confirm the findings. A Welch's T-test

confirmed a significant difference in pitch perturbation between genders (p=0.033792). Further analysis with a two-sample F-test for variances (p=0.000261) revealed a significantly greater difference in pitch variances between genders. The much lower p-value of the F-test suggests that pitch variance is a stronger cue than pitch perturbation for distinguishing male from female speech.

This study's findings support Tielen's (1989) claim that SD is a key indicator to distinguish between male and female utterance F0, independent of physiological factors. The higher pitch variance observed in female speakers aligns with the stereotype of a more dynamic and melodic speech pattern. Conversely, male speakers exhibit a more stable and less variable pitch.

Table 3

T-Test for Pitch Perturbation Difference

T-Test: Two-Sample Assuming Unequal Variances

	Female	*Male*
Mean	-37.4248	-7.2994
Variance	2742.964	444.6502
Observations	18	18
Hypothesized Mean Difference	0	
df	22	
t Stat	-2.26379	
P(T<=t) one-tail	0.016896	
t Critical one-tail	1.717144	
P(T<=t) two-tail	**0.033792**	
t Critical two-tail	2.073873	

Table 4

F-Test for Pitch Variance Difference

F-Test Two-Sample for Variances

	Female	*Male*
Mean	38.26895	14.95684
Variance	108.7332	17.77263
Observations	18	18
df	17	17
F	6.118015	
P(F<=f) one-tail	0.000261	
F Critical one-tail	2.271893	

Unlike the clear patterns observed in other analyses, the situational variation plots were inconclusive, making it difficult to directly compare F0 usage across different contexts. To address this, separate ANOVAs for pitch perturbation and pitch variance were conducted. The ANOVA results revealed that gender alone has no significant effect on F0 usage. However, situational context and the interaction between gender and context were found to have a significant impact. This suggests that F0 usage differs between males and females primarily in specific situational contexts, highlighting the importance of considering context when analyzing pitch dynamism.

Table 5
ANOVA Analysis of Pitch Perturbation
Analysis of variance (ANOVA)

Source	*Sum Sq.*	*d.f.*	*Singular?*	*Mean Sq.*	*F*	*Prob>F*
Gender	722.6785	1	0	722.6785	2.05548	0.167109
Situation	29417.77	4	0	7354.443	20.91789	**0.000000648**
Gender*Situation	20861.99	4	0	5215.499	14.8342	**0.00000879**
Error	7031.724	20	0	351.5862		
Total	58034.17	29	0			

Further analysis using pitch variance ANOVA shows that gender is a significant factor influencing pitch, while situational context alone is not. This suggests that pitch variance is the key indicator of speaker gender, whereas pitch perturbation primarily reflects the speaker's situation.

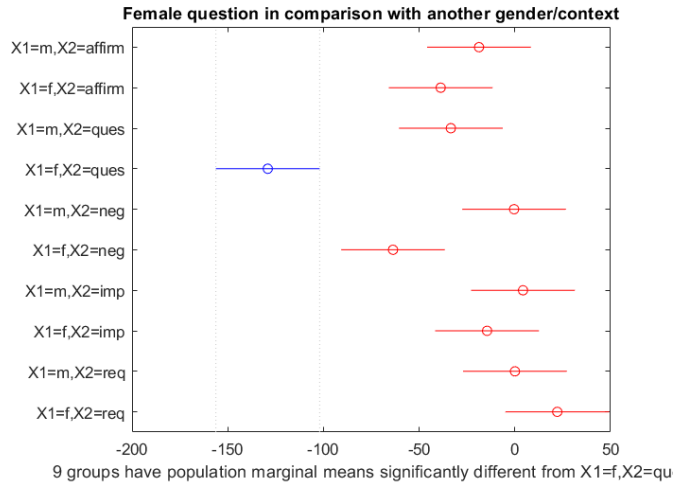
Table 6
ANOVA Analysis of Pitch Variance
Analysis of variance (ANOVA)

Source	*Sum Sq.*	*d.f.*	*Singular?*	*Mean Sq.*	*F*	*Prob>F*
Situation	2881.28	1	0	2881.2754	48.50	0.170123
Gender	518.5953	5	0	103.7191	1.75	**0.000000926**
Gender*Situation	278.8163	5	0	55.7633	0.94	0.477483
Error	1188.171	20	0	59.4085		
Total	5462.342	36				

The visualization of ANOVA results highlights the distinctiveness of female questions, indicating that this context particularly stands out, a topic that will be explored further in the discussion section.

Figure 10

ANOVA Visualization of Female Question in Comparison with Other Contexts



Overall, the analysis confirms that pitch dynamism differs significantly between male and female speakers, with pitch variance being a more critical factor than pitch perturbation, answering the first research question. Situational context plays a crucial role in these differences, suggesting that F0 usage in speech is context dependent. The significant gender-context interaction further underscores the complexity of pitch dynamism and the necessity of considering situational factors in gender-based speech analysis, answering the second research question.

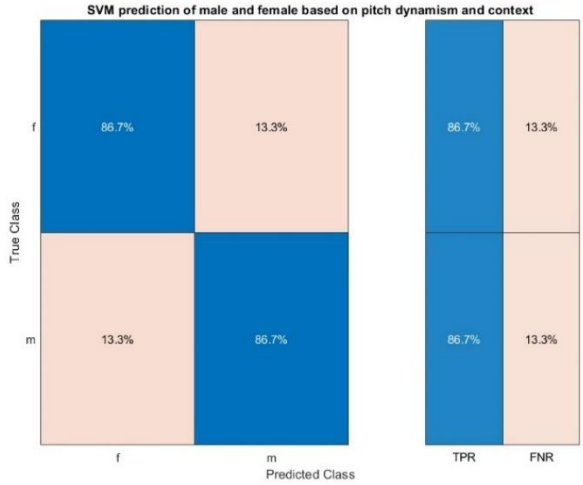
Discussion

Machine Learning Approach

According to several previous studies (Childers & Wu, 1991; Henton, 1995; Wu & Childers, 1991), computational linguists have also explored the topic of distinguishing male speech from female speech using fundamental frequency as a primary distinguishing factor. Given that the method presented in this work yields significant and distinct results in separating male from female speech in specific contexts using redefined pitch dynamism, I employed a Support Vector Machine (SVM) model based on the pitch perturbation ANOVA. SVM is a supervised machine learning model that is particularly effective for classification tasks, as it seeks to find the optimal hyperplane that maximizes the margin between different classes. The SVM model used here demonstrated an 86.7% accuracy in predicting gender based on pitch dynamism, with a 13.3% error rate. This level of correctness supports the findings, with the error rate potentially attributable to the exception mentioned earlier (Male speaker 1, Question).

Figure 11

Result of SVM Prediction Based on Pitch Perturbation ANOVA



Interaction of Context: Explanation of Pitch Perturbation in Different Contexts

The results show a general spread of pitch dynamism in both affirmative and negative utterances, as well as in utterances segmented from connected speech. This is likely due to the generic nature of these utterances. Interestingly, based on the results, negation appears to be a sub-category of affirmation, as both serve to convey facts or opinions. All utterances segmented from connected speech were classified as affirmative sentences.

One male speaker (M1 Question) presented as an outlier, with pitch dynamism falling within the typical range for females. This speaker's F0 exhibited greater perturbation and fluctuation compared to the other male speakers. The situational context likely explains this outlier. Previous research by Brinckmann and Benzmüller (1999) suggests that wh-questions tend to have more F0 fluctuation than other question types and affirmative sentences. Since the stimulus was a wh-question, it is unsurprising that this utterance showed the most pitch fluctuation among the participant's recordings. This is further supported by the finding that the wh-question stimulus elicited the most F0 perturbation in all female participants as well.

The ANOVA visualization shows that the female question is the only one clearly distinct from all others. This suggests that female speakers naturally exhibit more fluctuation and melodic variation in their fundamental frequency (F0) during utterances, and question sentences allow for the greatest variation in F0. These factors likely explain this phenomenon.

Another interesting context to discuss is the imperative. From the general results, a low dispersion of F0 and alignment to zero in terms of perturbation can be observed. Although there are no direct studies on Thai intonation patterns of imperative sentences, the results of this study partly correspond to the findings from Sun et al. (2008), which suggested that the pitch range of imperatives in Chinese, a tonal language, is likely to be compressed. Similar characteristics might be inferred for Thai due to the tonal nature

of both languages, but further research specific to Thai is necessary for a more accurate comparison.

The request context generally exhibits a wide dispersion of pitch dynamism. Here, it cannot be compared directly with the general dispersion in affirmatives, as I consider the request context to be a combination of both question and imperative contexts. The high dispersion, combined with low dispersion, results in an overall general dispersion.

Interaction of Tone and Pitch Dynamism

The results of this research differ from previous studies, such as those by Tielen (1989) and Henton (1995), in several aspects. For instance, Tielen's (1989) study yielded significant results with the SD but with rather low significance. Henton's (1995) study, on the other hand, yielded insignificant results regarding pitch dynamism. I suggest that the differences between the results of these previous studies and the current work can be attributed to the interaction between phonological tone and pitch dynamism (F0) throughout the utterance.

According to Eady (1982), F0 patterns in tone languages, as opposed to stress languages, are influenced by the tone contours of each lexical item in the utterance, resulting in more fluctuating F0 at the utterance level. The previous studies reviewed focused on stress languages such as Dutch (Tielen, 1989) and French and English (Henton, 1995). In contrast, this study investigates Thai, a tone language. Therefore, the significant results regarding pitch variance in this study, compared to the less significant results in previous works, suggest that pitch variance is a primary cue in tone languages. Furthermore, the less significant results for pitch perturbation in this study imply that F0 modification in utterances is language-specific rather than cross-linguistic. Each language has its unique way of modifying F0 throughout the utterance based on the gender of the speaker.

Limitations

This study has several limitations. Firstly, the sample size is small (n=6; m=3, f=3), and the presented demographic factors such as age are also constrained, which limits the generalizability of the findings. It serves as a preliminary case study aimed at confirming the hypothesis that there are differences in the fundamental frequency (F0) between male and female utterances, thereby providing a foundational basis for the proposed research method of measuring utterance F0 using an adapted version of pitch dynamism.

Additionally, the number of tokens (n=36) is relatively low, as efforts were made to ensure each elicitation sounded as natural as possible. Despite these limitations, the results obtained still reflect ongoing patterns in the characteristics of F0 in utterances by both male and female speakers across different situational contexts.

Conclusion

In conclusion, the findings show that variations in the modification of F0 throughout an utterance in Thai exist between male and female speech, with situational context being another main factor influencing these variations, as suggested by the statistical analysis. Furthermore, there is a connection between the type of utterance, its communicative function, and the realized F0 from the speaker. Pitch variance serves as the main cue to distinguish gender, while pitch perturbation serves as the main cue to distinguish conversational context. This study is significant as it addresses the question of male and female F0 differences beyond physiological factors and adds new insight to the ongoing discussion. Additionally, this study paves the way for further research on pitch variation in various utterances, both in the domain of the Thai language and in general linguistic studies. I suggest that future studies investigate the relationship between pitch dynamism and gender identity more deeply, especially in non-normative contexts, as this could enhance our understanding of the construction of gender identity through acoustic correlates.

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Translanguaging Pedagogy for Meaning Making through Classroom Interactional Competence in Thai EMI Context

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Abstract

Translanguaging can be conceptualized as a theory of communication and language use, and, involves the fluid use of multiple languages as an integrated system of communication. It is the process where individuals employ their full linguistic and semiotic capabilities to make meaning, considering languages not as fixed codes by themselves, but as fluid codes framed within social practices. Pedagogical translanguaging is a practice that refers to instructional strategies integrating two or more languages in naturally occurring contexts where boundaries between languages are fluid and constantly shifting. It provides spaces to encourage learners' understanding through discussion activities by using different languages for input and output. This paper explores how translanguaging contribute to knowledge construction of interaction competence within the Thai English Medium Instruction classroom. In particular, the classroom interaction competence builds on ideas related to the centrality of interaction in language learning and focuses on the ways in which teachers' and learners' interactional decisions create learning opportunities in the classroom. Employing translanguaging through classroom interactional competence can encourage learners' deployment of different semiotic resources, especially their free choice and use of languages, in the process of dialogic knowledge construction. The learners can utilize their full linguistic and multimodal repertoires to construct knowledge and facilitate meaning-making processes in the classroom. Therefore, translanguaging can give learners deeper insight into the subject matter discussed and has the potential to promote higher-order thinking and fuller understanding.

Keywords: Classroom Interactional competence; Meaning Making; Thai EMI context; Translanguaging; Translanguaging Pedagogy

Introduction

In accordance with global trends, higher education (HE) institutions have attracted a substantial number of international learners and academic staff to facilitate teaching and learning in the target language. Notably, English medium instruction (EMI) in HE is rapidly expanding worldwide (Macaro et al., 2018; Rose et al., 2020).

In many universities, EMI has been integrated into the classrooms, with English being widely employed to teach academic content (Ra & Baker, 2021). In Thailand, many universities that formerly operated in Thai now offer English-medium program as an option. Some programs even provide double degrees through collaborations with the world-renowned universities. Additionally, certain educational programs adopt a mixed mode of learning, wherein teachers use Thai for teaching, and English serves as the medium of textbooks and written assignments.

However, the adoption of this new medium of instruction may fail to convince students. A significant factor contributing to the failure of English-medium instruction innovation is a lack of understanding of students, social dynamics, and personnel behavior within the host educational environment. Similarly, Thai learners often exhibit unsatisfactory English proficiency. This lack of competency can be attributed to factors such as the insufficiency of a communicative language approach and a supportive environment, an emphasis on receptive language skills and English grammar for examination purposes, inadequate practice in productive language skills, limited opportunities to use English daily, and a lack of confidence in using English. Additionally, there is insufficient language knowledge at the small classroom level (Jiang & Zhang, 2023).

Furthermore, there is a dearth of classroom research on EMI university teachers' teaching practices as well as their efforts to deliver content knowledge and cater for learners' linguistic needs (Gu et al., 2022). At the classroom level, a common concern in universities is that EMI may potentially compromise the quality of content teaching and learning (Rose et al., 2020). This concern becomes particularly relevant when teachers and/or learners lack a sufficient command of English (Zhang, 2018). Similarly, in Thailand, students have limited chances to use English and have not experienced much success in their learning journeys. Therefore, creating a supportive environment for improving English proficiency is essential, allowing teachers and students to share a space for using English.

Thai teachers and learners using English for subject matter may face limitations in their English proficiency, particularly when it comes to explaining complex content. Some teachers who have been teaching other subjects, such as mathematics, science, and social studies, in the context of English medium instruction in Thailand may not have a deep understanding of the content. Previous articles have also indicated that when teachers exclusively use English, learners may experience mental exhaustion as they constantly grapple with complex subject matter expressed in English (Jiang & Zhang, 2023).

To mitigate the issues mentioned above, it is common for teachers to avail the L1 to facilitate and assist learners' content learning (Galloway et al., 2017; Jiang et al., 2019), and using the learners' L1 as a resource can potentially support and not deter learning (Ambele, 2022). A key highlight of the translanguaging concept is that language is open. However, García and Li (2014) emphasize that translanguaging differs from the notion of code-switching. It does not merely involve a shift or a shuttle between two languages but refers to the speakers' construction and use of original and complex interrelated discursive practices. These practices cannot be easily assigned to

one or another traditional definition of a language but constitute the speakers' complete language repertoire. Similarly, extensive research on translanguaging pedagogy illustrates how opening up spaces for learners to use their entire linguistic repertoires creates possibilities for identity development (Parra, 2023). The various translanguaging strategies are adopted to challenge the monolingual ideology (Fang et al., 2022). From a theoretical perspective, Cenoz & Gorter (2022) investigated pedagogical translanguaging and its application for language classes and stated that in terms of learners' multilingual and multimodal repertoires, pedagogical translanguaging plays a key role in facilitating learning. Learners are able to employ multilinguals to confidently communicate and share what they think.

Pedagogical translanguaging focuses on the process of meaning making, knowledge co-construction, empowering students' voices, and developing their identities as bilinguals through planned strategies and activities (Cenoz & Gorter, 2017; 2021; Cenoz & Santos, 2020; Li, 2018). Bilingualism is, therefore, dynamic, focusing on what people do with language to produce and interpret their classroom interactions for deep understanding (Garcia & Otheguy, 2020; Li, 2018). In addition, pedagogical translanguaging tasks engage students to make meaning through both cognitive (awareness) and social factors (lived experiences), and require that learners use their entire repertoire and not only their L1 (Galante, 2020). For instance, a learner whose first language is Thai (L1) and second language is English (L2), even if not yet fully proficient in English, is encouraged to utilize all of these linguistic resources when learning English. Scholars have begun to examine how teachers apply translanguaging in their practices. Informed by the dynamic, distributed, and fluid view of language (Lin, 2019), translanguaging studies have transcended a mere interest in the use of multiple languages for meaning-making. According to Lin and Wu (2015), translanguaging between the L1 and the L2 can be well-coordinated with multimodal resources to facilitate students' meaning-making. Lin and He's (2017) ethnographic study further showcased how teachers and students orchestrated multilingual, multisemiotic, and multimodal resources (e.g., spoken, written, gestures, visual images, facial expressions) in the dynamic flow of interactions and activities. In a similar effort, Pun and Tai (2021) explored the process of students' joint knowledge construction in the context of science laboratory work and demonstrated that multilingual and multimodal resources were used for learning and meaning-making in the flow of action events.

To believe is to have more fine-grained understanding of how knowledge (both content and English language knowledge) is constructed in the multilingual classroom mediated by teachers (Zhang & Zhang, 2020) and learners' translanguaging practices. Translanguaging refers to the use of multilingual, multisemiotic, and multimodal resources to create meaning, ultimately promoting deeper comprehension among learners (Li, 2011, 2018). However, despite the growing body of empirical evidence supporting translanguaging as a valuable pedagogical approach for facilitating meaning-making in EMI and Content and Language Integrated Learning (CLIL), there has been minimal research conducted on translanguaging in the context of EMI in Thailand. To apply translanguaging in the classroom, translanguaging pedagogy begins

with an understanding of learners' language practices. The teachers need to actively support translanguaging for it to be effectively used in the classroom. Translanguaging involves planned activities designed by the teacher, who are not confined in using different languages solely for input and output. Teachers' flexibility and willingness to support students' voices can be strategically utilized by instructional strategies, contributing to the establishment of students' identities. When translanguaging is employed for pedagogical purposes, and learners are encouraged to creatively utilize their language repertoires, the potential for knowledge development becomes boundless. In these settings, teachers and learners can collaborate to promote critical thinking. Therefore, this paper supports translanguaging pedagogy to explore how Thai EFL university teachers incorporate this practice into their classrooms and their perceptions of its application in tertiary education in Thailand.

Theorization of Pedagogical Translanguaging

The term "translanguaging" derives from the Welsh term "trawsieithu" which in earlier times referred to pedagogical practices in bilingual classrooms where teachers and students deliberately altered languages of input and output (Lewis et al., 2012). The scholar defined it as various ways in which individuals who are bilingual participate in communicative activities to comprehend and navigate their multilingual environments. García (2009). In simple terms, translanguaging is a transformative practice that focuses on meaning making through the orchestration of languages and their varieties, along with other semiotic, cognitive, and multimodal resources. It can consider that languages 'are not fixed codes by themselves; they are fluid codes framed within social practices (García, 2009). Following this, Baker (2011) translated the word as translanguaging and introduced it into bilingual education, linking it to the construction of meaning, the shaping of experience, and the acquisition, understanding, and digestion of knowledge through the use of two languages. Translanguaging is built on the idea of languaging, meaning the process of using language to gain knowledge, make sense, articulate one's thoughts, and communicate (Li, 2011; 2018). Therefore, Translanguaging can be conceptualized as a theory of communication and language use, which involves the fluid use of multiple languages as an integrated system of communication (Curle et al., 2020).

As pedagogy, translanguaging transforms the classroom into a translanguaging space where teachers and learners can engage in diverse meaning making systems and subjectivities (García & Li, 2014). It is a transformative and resemiotization process where language users' creativity and criticality can be best displayed. It is also about a new way of being and languaging in a new sociocultural and political context, which allows a fluid flow of discourses and gives rise to new social realities (García & Leiva, 2014). Pedagogical translanguaging has been defined as being planned by the teacher inside the classroom and can refer to the use of different languages for input and output or to other planned strategies based on the use of students' resources from the whole linguistic repertoire (Cenoz & Gorter, 2017).

The idea of a language repertoire (Otheguy et al., 2015) transcends traditional conceptualizations of language and disrupts the notion of languages as discrete, bounded systems. It recognizes all of language users' fluid language and multimodal practices as part of an integrated meaning making system. As practice, translanguaging is about fluid practices that transcend the boundaries between socially constructed and culturally defined languages and language varieties, as well as between linguistic and other semiotic and multimodal resources (Li, 2018). Pedagogical translanguaging is also broad because it is not limited to two languages but extends to three or more languages. This is concerned with the planning, application and extension of multilingual pedagogical strategies and practices based on the student's whole linguistic repertoire. This can be designed at the phonetic, lexical, morphosyntactic, pragmatic and discourse levels and can be implemented in language classes and content classes including oral and written activities (Leonet et al., 2017; Cenoz & Santos, 2020).

Additionally, in a study conducted by Ambele (2022), which examined the views of Thai university EFL teachers on classroom translanguaging in tertiary education in Thailand, the data revealed that, on the whole, the teachers exhibited positive attitudes towards the use of learners' L1 in the classroom (referred to as classroom translanguaging pedagogy) for the purposes of L2 development and content learning. To promote the concept of translanguaging, engaging learners in the learning process is a fundamental pedagogical objective in any classroom.

Translanguaging for Making Meaning in EMI Classrooms

EMI requires teachers to deliver their subject matter in the English language as the medium. EMI can be defined as the practice offering academic subjects such as economics, history, and chemistry through the medium of English where the first language of the majority of students is not English. With English as the teaching language, local content might not be fully understood or appreciated, limiting the depth of knowledge. In contrast, research studies on multilingual classrooms have focused on translanguaging as a transformative, creative and critical meaning-making phenomenon (Creese & Blackledge, 2010; Garcia & Li, 2014). Translanguaging aims to transcend the boundaries between different named languages and also between different modalities, for instance: speech, sign, and gesture (Li, 2018; 2022). It has shown that human languages are highly complex and constantly evolving ways of communication, utilizing various signs and methods. To enhance comprehension of content knowledge in English, translanguaging effectively supports students by incorporating their home language (Jiang & Zhang, 2023).

Conversely, learners typically resorted to using English for simple responses. However, in tasks requiring higher-order cognitive processes such as reasoning, elaboration, positioning, and other intellectually challenging activities, they tended to use their L1 more frequently. In the context of teachers, translanguaging served as a versatile tool with pedagogical, cognitive, and socio-affective functions. It actively engaged learners in interactions and facilitated the modeling of meaning-making in the L2. In contrast, for the students, translanguaging enabled them to actively participate in

and contribute to the collaborative construction of knowledge through dialogic interactions.

Tai (2023) found that EMI teachers can transcend the boundaries of disciplinary knowledge by integrating relevant content knowledge from other academic subjects to facilitate learners' learning of new content knowledge. This illustrates that the construction of a translanguaging space for cross-curricular connection allows learners in the classroom to participate in flexible language usage, while also enabling the EMI teacher and learners to introduce diverse perspectives that assist in comprehending new academic information within a new classroom interactional setting.

This can encourage teachers to provide chances for learners to actively use the English language in their lessons (Turnbull et al., 2011). Nevertheless, it is equally important for teachers to employ their full linguistic and multimodal repertoires strategically and purposefully in EMI classrooms to support and enrich learner's linguistic repertoire in the named L2 and achieve specific pedagogical goals, including facilitating content explanation, and promoting meaningful communication with learners. Several studies explore the development of spaces where translanguaging occurs in EMI classrooms. There should be a dedicated place for translanguaging in EMI settings, offering accessible multilingual, multisemiotic, multisensory, and multimodal communicative resources for teaching and learning.

Hence, this paper aims to explore how translanguaging contributes to knowledge construction of interaction competence within Thai EMI context, emphasizing the transcending of multimodal resources. Specifically, this strategic approach allows teachers to adapt translanguaging pedagogy and provide essential support for learners in the learning process.

Five Advantages of Translanguaging

Scholars have identified several benefits that translanguaging brings to bilingual and multilingual settings. Firstly, translanguaging is likely to reduce affective barriers for individuals lacking confidence in using the L2, thereby diminishing feelings of alienation, anxiety and tension (Ortega, 2020). Likewise, translingual practices promoted learners' active participation and contribution. Secondly, it may improve learners' agency and plays an identity-affirming function, allowing learners to fully express their voices (Arthur & Martin, 2006; Creese & Blackledge, 2010; Lin & He, 2017). Furthermore, learners' spontaneous use of their L1 enabled them to leverage familiar resources to express their ideas freely and comfortably. By using their home language, learners incorporated their daily life experiences (e.g., cellphone, mineral water, battery), which were then connected to and expanded upon the target content knowledge (Jiang & Zhang, 2023). Thirdly, translanguaging can give learners a deeper insight into the subject matter discussed in the classroom and has the potential to promote higher-order thinking and fuller understanding (Baker, 2011). By the same token, translanguaging can contribute to learners' engagement in the content of the curriculum (Infante & Licona, 2021). Fourthly, by utilizing the L1 alongside, rather than instead of, the target language, translanguaging can enhance classroom

communication, facilitate improved participation between weaker and stronger learners, and potentially transform teacher-learner relationships (Palmer et al., 2014; Paulsrud et al., 2017). Lastly, experience in translanguaging can help learners build their linguistic tolerance and flexibility that should enable them to learn additional languages throughout their lives (Garcia, 2009).

In conclusion, the challenges of employing translanguaging involves several aspects: L2 learners must overcome their apprehension to speak both L1 and the target language, effectively express their ideas, engage in in-depth classroom discussions, and facilitate participation among learners of varying proficiency levels. Despite these challenges, translanguaging plays a pivotal role in enhancing classroom interaction competence.

Combining Translanguaging Pedagogy through Classroom Interactional Competence for Making Meaning in Thai Context

Under the sociocultural perspective, knowledge is constructed through social interactions where learners bring their sociocultural histories and communicative resources into relevance (Vygotsky, 1978). Meaning-making processes vary across sociocultural contexts, influenced by individuals' culturally determined literacy practices used for specific cultural and communicative purposes. Therefore, integrating the target language with classroom interaction, where language and content are learned through discussion and co-construction, can mutually enhance the learning process and promote higher-order thinking.

The theoretical concept of interaction competence (IC) was introduced by Kramsch in 1986 as a response to proficiency-oriented approaches in L2 teaching and testing. Kramsch advocated for prioritizing the development of L2 speakers' ability to effectively use their knowledge and resources in grammar, vocabulary, and prosody to engage in real-world interactions.

Classroom Interactional Competence (CIC) is defined as the ability of teachers and learners to use interaction as a tool to mediate and support learning (Walsh, 2006). This concept emphasizes the pivotal role of interaction in language learning and underscores how teachers' and learners' decisions during interactions create opportunities for learning. To deepen the understanding of interaction in foreign language classroom contexts, the paper expands the concept of IC by incorporating translanguaging as an interactional phenomenon. This perspective highlights that learners' proficiency in language is enhanced when they utilize a variety of semiotic resources to facilitate complex social activities.

Within the context of classroom interaction, Walsh (2006) coined the term "Classroom Interactional Competence" which emphasizes CIC as a resource that both language learners and their teachers can draw upon to promote learning in the classroom, without specifying whether the teachers are L1 or L2 speakers of the target language. This conceptualization of classroom interaction competence creates a framework for classroom discussion. It emphasizes the teacher's role in shaping learner contributions through actions such as seeking clarification or repairing learner input,

thereby assisting learners in expressing their intended meanings through practice using translanguaging. Both teacher and learners can benefit from the various ideas presented by CIC without being overly concerned about language usage. In addition to the focus on L1 interactional competence, this paper can provide insight into the full range of semiotic resources L1 native English speakers draw on for effective interaction, complementing findings from existing research on L2 interactional competence (Tai & Dai, 2023). In the Thai classroom context, both the teacher and learners engage in discussions, co-constructing their knowledge by using L1 and L2 to deepen their understanding of the content. As noted by Ambele (2022), these teachers allow learners to strategically use their L1 to accomplish a range of teaching and learning tasks and objectives. This underscores the importance of conducting research on this topic with a diverse sample of Thai teachers across Thailand, including those who may initially oppose translanguaging, as well as learners.

In addition, CIC's focus on real-world language use, rather than abstract linguistic knowledge such as grammar and vocabulary, aligns with the general communicative language movement spearheaded by Hymes's seminal work on communicative competence (Hymes, 1972). Similarly, it is effective in explicating the detailed process of how translanguaging practices are jointly constructed between teachers and learners in EMI classrooms, even though classroom participants are expected to use the target language throughout the lessons under the monolingual policy (Jakonen et al., 2018).

Despite efforts EMI classes to approach native speaker proficiency, most learners never achieve the same level of nativeness as their models. Translanguaging, in essence, refers to practices where teacher and learners draw on their multilingual and multimodal resources from their repertoires in a fluid and dynamic manner to construct meaning in the multilingual classroom setting (Li, 2018). Therefore, developing an understanding of the diverse interactional resources that teachers and learners employ in translanguaging pedagogy can contribute to improved teaching and enhance their multilingual competence. This underscores the importance of integrating translanguaging and classroom interaction competence for meaning construction in the Thai EMI context, thereby enabling effective access to content knowledge.

Conclusion

Translanguaging reconceptualizes language, enabling learners to employ diverse modes within their full communicative repertoire for meaning-making practices. Its application in classroom settings aims to enhance learning empowerment. Various strategies challenge both the teacher and learners while exploring classroom interactional competence in Thai EMI setting by utlizing translanguaging to deepen understanding of content. This approach allows learners to use multiple languages in constructing knowledge and articulating complex ideas, thereby fostering enhanced learning outcomes. Therefore, engaging in discussions or interactions with peers who utilize translanguaging to support their conversations offers an opportunity to comprehend specific content through mutual learning.

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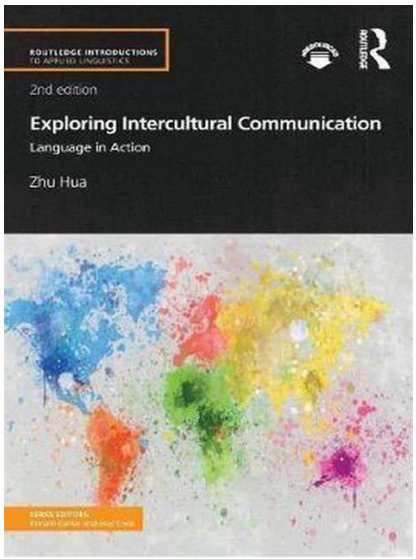

BOOK REVIEW

Hua, Z. (2019). *Exploring intercultural communication: Language in action* (2nd ed.). Routledge.

By **Pa Pa Soe**

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This text explores intercultural communication across various scenarios where language is a key to everyday interactions. It covers both practical issues and theoretical approaches within the field of intercultural communication. There are three main parts, covering 12 chapters. In Part I, the author initially addresses various contexts of intercultural communication by providing insight into potential challenges. In Part II, the discussion leads to theoretical explanations of culture and intercultural communication. Finally, Part III discusses intercultural communication more thoroughly, examining how language influences individuals' thoughts and worldviews. This section also explores theories of culture and cultural identities.

The first part of the book includes *"Intercultural Communication in Everyday Life"* which is divided into five chapters. The author begins Chapter 1 with intercultural communication within the language classroom. This section includes the role of culture in language learning and differences in learners' preferred learning styles such as rote learning and passive learning approaches between East and West. Moreover, the discussion involves the facts and factors contributing to levels of students' participation in a multicultural classroom. In Chapter 2, the author explores the dynamic nature of intercultural interactions in the workplace, particularly in business meetings, small talk, and humor. This chapter provides a brief overview of the general characteristics of workplace diversity and examines how small talk and humor function differently in promoting social cohesion. Chapter 3 focuses on the influence of culture in the business context, primarily within the two contexts of advertising and negotiation strategies. In advertising strategies, the topic covers a wide range of cultural differences in terms of the use of slogans, styles of advertisements, and language choices. Then, the author addresses the differences in rhetoric and conversational styles when making negotiations in international business. In contrast, Chapter 4 explains the experiences of cultural differences between host culture and home culture among migrant families.

Additionally, this chapter discusses whether language and cultural differences impact emotional communication in intercultural marriages as well as the choice of language use and practices among multilingual families and bilingual children. Chapter 5 illustrates intercultural communication in the contexts of studying abroad and tourism. The author highlights common issues such as culture shock in a new environment, often followed by cultural adaptation and the process of establishing social contact with the host culture.

The second part discusses "*Developing Intercultural Communicative Competence"*. This part consists of four chapters. In Chapter 6, the author begins exploring different styles of communication in specific cultures including "high versus low context" by Hall (1976). The discussion, then, extends to the notions of certain cultural aspects such as the level of politeness and directness, and non-verbal cues (e.g., the space and length of gap) in conversational contexts. Next, Chapter 7 describes factors contributing to turbulence in intercultural communication. The author initially defines what turbulence refers to and then identifies the factors contributing to these issues. The turbulence in communication means difficulties encountered when conversational counterparts fail to understand their intended meanings, which then causes consequences such as disagreement, confusion, or resentment. These issues extend beyond merely misunderstanding and miscommunication. In fact, they are all caused by a variety of factors, including "symbolic power", "pragmatic mismatch", "clash of styles", "mismatch in schemas and cultural stereotypes", and "mismatch in contextualization and framing". All these elements are defined by various scholars, including Kramsch (2016), who described symbolic power as the ability to shape thoughts and perceptions of others through subtle acts such as language and cultural practices. Pragmatic mismatches normally occur when participants have difficulty interpreting the meanings in conversations. Another factor in the clash of styles was described by Bailey (1997), highlighting the differences in conversational styles between people from different cultural groups. In addition, turbulence may also arise from a mismatch in schemas and cultural stereotypes as well as in contextualization and framing. Nishida (2005) noted cultural schemas as the perceived knowledge of the cultural traits and values in other cultural groups whereas a mismatch in contextualization and framing occurs when participants are required to contextualize through verbal and non-verbal cues in interactions (Gumperz, 1992).

In Chapter 8, the author continues discussing factors contributing to successful intercultural communication. This section initially discusses Giles' (1973) Communication

Accommodation Theory (CAT), which focuses on the behavioral changes among people from different linguistic and cultural backgrounds when they interact with one another. The discussion further continues to adjustment strategies such as the roles of negotiation and interpreters to achieve the goal of intercultural communication among encounters. Chapter 9 explains the theories on how to enhance intercultural communication competence. The author suggests some theories, including Hymes's (1972) model of communicative competence, which was further divided into six elements: "linguistic competence", "sociolinguistic competence", "discourse competence", "strategic competence", "social-cultural competence", and "social competence" (Ek, 1986); Byram's (1997) Intercultural Competence, defining it as the ability to communicate with people from different cultures without necessarily requiring proficiency in their second language; and Intercultural Communicative Competence (ICC), which indicates the ability to interact with people from different cultural backgrounds using the target language as the medium of communication. The author further discusses relevant approaches for intercultural teaching and learning within the context of foreign languages in Chapter 9.

Finally, the last part illustrates "*Understanding Intercultural Communication Critically*". This part contains three chapters. Chapter 10 primarily shows how the three elements: language, culture, and thought are closely intertwined. This section begins with a brief overview of "The Sapir-Whorf hypothesis" by Whorf (1956), which explains how language shapes individuals' thinking and worldviews. Then, the author discusses how the two languages impact their thoughts and utterances among bilingual speakers. The next section on "Theories of culture" in Chapter 11 illustrates definitions of the term, "culture" by various classic studies, including Samovar et al. (1998) and Hofstede (2001). According to Samovar et al. (1998), culture means "the deposit of knowledge, experience, beliefs, values, actions, attitudes, meanings, hierarchies, religion, notions of time, roles, spatial relations, concepts of the universe, and artifacts acquired by a group of people" (p. 36). The authors described culture as comprising various components which can be acquired. However, Hofstede's (2001) theory seems to focus on the more abstract values of each particular group, defining culture as "the collective programming of the mind which distinguishes the members of one human group from another. Culture in this sense includes values; systems of values are a core element of culture" (pp. 9-10). Basically, theories of culture generally share fundamental values that differentiate one group from another. With these clear definitions of culture provided, the

discussion leads to several methodological approaches for cultural analysis, namely: "interpretive approach: culture as semiotic" – exploring the deeper meanings beyond actions and behaviors (Geertz, 1973); "action approach: culture as a process" – focusing on the dynamic nature of culture and its evolution over time (Holliday, 1999, Fay, 1996); and "critical approach: culture as power and ideological struggle" – power differences within and between the groups (Halualani & Nakayama, 2010). All of them highlight the complex nature of culture and view it differently in each context. Lastly, Chapter 12 looks at the interlink between cultural identities and language practices. Among the multiple types of identities, cultural identity is multi-faceted and encompasses dynamic elements such as race, nationality, gender, and so on. This discussion examines the use of language and its relationship to identity projection in intercultural interactions.

Overall, this book provides a variety of theoretical explanations in various contexts. It is, therefore, a valuable resource for students and lecturers who specialize in language and intercultural communication studies or TESOL, as well as those with an interest in communication studies. In addition, the inclusion of case studies helps readers visualize practical issues on a global scale which enhances their understanding of intercultural communication in everyday scenarios. This text will also help readers better understand communication issues and foster effective interactions in an increasingly globalized world.

Author

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