

RESEARCH AND INNOVATION IN APPLIED LINGUISTICS [RIAL]

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FOREWORD FROM EDITORS

We are delighted to present **Volume 4, Issue 2** of the *Research and Innovation in Applied Linguistics (RIAL)*, published in August 2026. This issue represents another step in RIAL's continuing commitment to disseminating meaningful and high-quality research in applied linguistics.

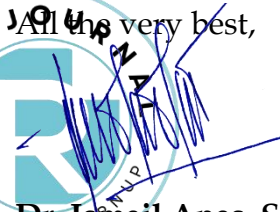
Our sincere appreciation goes to the Director of Politeknik Negeri Ujung Pandang, UPT Bahasa PNUP, and the dedicated team of editors and reviewers for their continued support and commitment to maintaining the scholarly quality of the journal. We also extend our gratitude to all contributing authors for sharing their valuable research with the RIAL community.

This issue features eleven articles, comprising ten research articles and one review article, with contributions from scholars in Indonesia, the Philippines, and Malaysia. The international contributions reflect RIAL's growing engagement in promoting scholarly exchange and collaboration within the broader Southeast Asian academic community.

We hope that the studies and review presented in this issue will provide valuable insights and contribute to further research, teaching practices, and innovation in applied linguistics.

Thank you for your continued interest and support of RIAL.

Makassar, 25th August 2026

All the very best,

The signature is a stylized, cursive script in blue ink, written over a circular stamp. The stamp contains the text 'RIAL' at the top, 'UPT. BAHASA' at the bottom, and a large 'P' in the center.

Dr. Ismail Anas, S.Pd., M.Pd
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EDITORS AND REVIEWERS

We would like to express our sincere gratitude and appreciation to the following reviewers who have contributed to the review process of this Volume 4 Issue 2 [August 2026]. We look forward to continue working with you in the next issue.

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Review Article

Charles Sanders Peirce's Semiotic Analysis of the Meaning of the Whistle in the Indonesian Navy's Communication System

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ABSTRACT

The use of whistles as a nonverbal communication medium remains an important traditional practice within the command system of the Indonesian Navy (TNI AL), despite the rapid development of modern communication technologies. However, academic studies that specifically analyze the meaning of whistle signals in military communication from a semiotic perspective remain limited. This study aims to examine the meaning and function of whistle sounds in the Indonesian Navy using the semiotic framework of Charles Sanders Peirce. This research employed a qualitative design. Data were collected through participatory observation, in-depth interviews with active and retired naval personnel, and documentation analysis of official communication procedures. The analysis applied Peirce's triadic semiotic model consisting of representamen, object, and interpretant, along with the classification of signs into icons, indices, and symbols. The findings show that whistle sounds function as a structured symbolic communication system understood through military training and organizational conventions. Variations in rhythm, duration, and intensity convey specific commands such as assembly orders, military salutes, and emergency signals. These signals also represent institutional values including discipline, hierarchy, and naval identity. The study highlights the continued relevance of traditional communication symbols within modern military communication systems.

Keywords: *Military Communication; Peirce's Semiotics; Communication Systems; Indonesian Navy; Whistle Sound*

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INTRODUCTION

The Indonesian National Armed Forces (TNI) operates within a hierarchical communication structure that requires rapid, accurate, and coordinated responses during routine operations, military exercises, and emergency situations. This integration of modern communication technology and traditional forms of communication has been tested historically and operationally (Turnip, 2025). This integration of modern communication technology and traditional forms of communication has been historically and operationally validated. One traditional communication medium that continues to be consistently used is the TNI AL service whistle (Ramdani et al., 2024). As a metal wind instrument capable of producing loud and consistent sounds, the whistle remains effective in operational environments with high noise levels, including naval vessels, ports, training grounds, and field operations.

In the Indonesian Navy, the whistle functions not merely as a technical device but as an institutional communication instrument embedded within military procedures and organizational regulations. Different whistle patterns, including short blasts, long blasts, and combinations of both, are employed to communicate commands, instructions, warnings, and operational information during military ceremonies, marching drills, guard duties, and emergency situations. The meanings attached to these whistle signals are not inherently derived from the sounds themselves. Their significance is constructed through military doctrine, standard operating procedures, training processes, and continuous organizational socialization.

"Whistle sounds are interpreted, understood, and institutionalized as communication signs within the Indonesian Navy"

The study of whistle signals can be understood through the perspective of semiotics, which examines how signs produce meaning within specific social and institutional contexts. Charles Sanders Peirce conceptualizes semiotics through a triadic relationship consisting of representamen, object, and interpretant. These elements are further categorized: signs are classified into qualisign, sinsign, and legisign. In relation to the object, signs are classified into icons, indices, and symbols, each reflecting a different mode of representation: resemblance (icon), causal or factual connection (index), and convention or agreement (symbol). From the perspective of the interpretant, signs are further categorized into rheme, dicisign, and argument, which describe how signs are interpreted by the observer as a possibility of meaning (rheme), a factual statement (dicisign), or a form of logical and argumentative reasoning (argument) (Aulia et al., 2025). This framework provides a systematic approach for understanding how signs function and how meanings are generated through interpretation.

The relevance of semiotic analysis is closely related to the broader role of nonverbal communication. Nonverbal communication contributes significantly to the formation of perceptions, experiences, and behavioral responses within organizations. It supports

communication effectiveness, facilitates collaboration, and assists in conflict management processes (Rakhmaniar, 2023). Beyond its practical function, nonverbal communication also conveys organizational values, authority, and institutional ideology through established systems of signs.

From Peirce's semiotic perspective, the sound of the TNI AL whistle can be interpreted as a representamen in the form of an auditory sign that refers to an object, namely a command, instruction, or operational condition (Beynon-Davies, 2018). The interpretant emerges when military personnel recognize, understand, and respond to the signal according to institutional rules and organizational expectations. In this context, the whistle primarily functions as a symbol because the relationship between the sound and its meaning is established through convention and organizational legitimacy. Certain whistle patterns may also function as indexes when they directly indicate ongoing situations, such as emergency conditions requiring immediate action.

Despite its continued use within the Indonesian Navy, scholarly attention to whistle signals as a system of nonverbal communication remains limited. Existing studies on military communication predominantly focus on communication technology, command systems, and operational effectiveness, while traditional communication symbols receive considerably less attention (Rasakumaran, 2018). Research specifically examining auditory communication media in military organizations, particularly the TNI AL whistle, is still scarce. Consequently, limited knowledge exists regarding how whistle sounds function as signs, how their meanings are constructed institutionally, and how military personnel interpret these signals within operational contexts.

This gap highlights the need for a semiotic investigation of whistle communication in the Indonesian Navy. Although Peirce's semiotic framework has been widely applied to visual, textual, and symbolic forms of communication, its application to military auditory signals remains underexplored. Therefore, this study aims to analyze the meanings embedded in TNI AL whistle sounds through the semiotic perspective of Charles Sanders Peirce. The study is expected to contribute to the development of organizational communication, military communication, and semiotic studies by providing a deeper understanding of how traditional communication symbols continue to function and maintain relevance within contemporary military institutions amid ongoing communication technology modernization.

This gap highlights the need for a semiotic investigation of whistle communication in the Indonesian Navy. Although Peirce's semiotic framework has been widely applied to visual, textual, and symbolic forms of communication, its application to military auditory signals remains underexplored. Therefore, this study seeks to answer the following research questions:

- (1) What variations of whistle sound patterns are used in Indonesian Navy communication practices?
- (2) How can these whistle sounds be interpreted through Peirce's triadic semiotic

- model of representamen, object, and interpretant?
- (3) To what extent do whistle signals function as symbolic and indexical signs within the Indonesian Navy communication system?
 - (4) How are the meanings of whistle signals institutionalized and standardized through military training and operational practices?

LITERATURE REVIEW

Peirce's Semiotics and Auditory Signs

Charles Sanders Peirce's semiotics constitutes one of the principal approaches in sign studies (Kilstrup, 2015). It emphasizes meaning-making as a triadic relationship among the representamen, object, and interpretant. Unlike Saussure's dyadic model, which focuses on the relationship between the signifier and the signified, Peirce conceptualizes meaning as a dynamic and ongoing process of interpretation. This approach has been widely employed in studies of communication, culture, and organizations because it explains how signs are understood and interpreted within specific social contexts. Peirce's classification of signs into icons, indices, and symbols provides a flexible analytical framework for examining the relationship between sign forms, referential objects, and the meanings generated through communication practices. Organizational semiotics further suggests that symbols, signals, and codes are socially constructed through processes of socialization, training, and institutional legitimation rather than emerging naturally (Aulia et al., 2025).

Semiotic research has predominantly focused on texts, visual media, and popular communication, whereas studies examining auditory signs in formal organizations, particularly military institutions, remain limited. Nevertheless, military environments possess highly structured sign systems that are rich in symbolic meaning. This gap provides an opportunity to apply Peirce's semiotic framework to analyze whistle sounds as a system of nonverbal communication within the Indonesian Navy (Rasakumaran, 2018). Charles Sanders Peirce's semiotics constitutes one of the principal approaches in sign studies. Peirce conceptualizes meaning as a triadic relationship among the representamen, object, and interpretant (Hoopes, 2014). A representamen refers to the form of a sign that can be perceived by the senses, an object denotes the referent represented by the sign, and an interpretant refers to the meaning produced in the mind of the interpreter. Meaning is therefore not fixed but continuously develops through interpretation processes occurring within particular social and cultural contexts.

Peirce classifies signs into icons, indices, and symbols according to the relationship between the sign and its object. Icons are based on resemblance, indices on causal or existential connections, and symbols on socially agreed conventions. This classification provides a flexible analytical framework for examining organizational communication systems because organizational signs derive their meaning from institutional rules,

collective agreements, and repeated practices rather than from inherent properties of the signs themselves (Lammers, 2011).

The application of Peirce's semiotics extends beyond visual signs to auditory signs. Sound functions as a representamen capable of directing attention, conveying information, and eliciting particular responses. Auditory signs often operate as indices because they indicate the occurrence of an event or command, while simultaneously functioning as symbols when their meanings are determined through institutional conventions. Within military organizations, whistle sounds exemplify this dual characteristic. The physical sound acts as an auditory stimulus, while the meaning attached to specific whistle patterns emerges through organizational training, discipline, and shared interpretation. Peirce's framework therefore provides an appropriate theoretical basis for examining how whistle signals acquire communicative meaning and organizational authority within the Indonesian Navy

Nonverbal Communication in Military Organizations

Nonverbal communication refers to the process of conveying messages without using words. This process is manifested through various components, including facial expressions, body movements, eye contact, posture, gestures, distance (proxemics), voice intonation, and sound (Aswaruddin et al., 2025). Nonverbal communication is understood as a crucial element in modern communication studies due to its ability to strengthen, replace, and even dominate verbal messages (Ibrahim et al., 2022; Sjoraida et al., 2024). Nonverbal communication plays a strategic role in the military context because task environments often face high noise levels, limited distance, time pressure, and emergency situations that preclude optimal use of verbal communication.

Military organizations rely heavily on nonverbal communication due to operational environments characterized by noise, distance, limited visibility, time constraints, and emergency conditions. Communication systems within military institutions employ hand signals, flags, lights, sirens, drums, bugles, and whistles to ensure the rapid transmission of commands and coordinated responses (Ramdani et al., 2024). These communication forms facilitate command and control functions while reducing dependence on spoken language in operational situations.

Existing military communication studies primarily focus on operational effectiveness and technological communication systems. Research concerning the symbolic and cultural dimensions of traditional nonverbal communication remains limited. Auditory communication signals, particularly whistles, have generally been examined as functional communication tools rather than as signs carrying institutional meaning. This gap highlights the need to investigate whistle communication from a semiotic perspective that considers both communicative function and symbolic significance within military organizations.

Historical Development of Whistles as Communication Signals

The whistle is among the earliest sound-producing instruments used by humans. Archaeological evidence indicates that whistles were manufactured from bone, wood, shells, and other natural materials. Early societies employed whistles for hunting, ritual activities, group coordination, and communication across distances (Montagu, 2007). Its ability to produce a distinct and far-reaching sound made it an effective medium for conveying messages in environments where verbal communication was limited. Over time, the whistle evolved from a simple signaling device into a recognized communication instrument that served practical, social, and cultural functions in various human communities.

The communicative function of whistles expanded into military contexts during ancient civilizations. Military forces in Greece and Rome utilized sound signals to coordinate troop movements, relay commands, and maintain battlefield organization in environments where verbal communication was ineffective (Talbert & Naiden, 2017). Whistles later became part of broader military signaling systems that included drums, horns, and trumpets for transmitting commands across large formations (Sterling, 2008).

The modern development of whistles accelerated during the nineteenth century following Joseph Hudson's invention of metal whistles. In 1883, Hudson's whistle was adopted by the Metropolitan Police of London because it produced a louder and more distinctive sound than the traditional police rattle (Frühholz et al., 2024). This development established the whistle as an effective auditory communication medium in institutional settings. The ability of whistle signals to convey information rapidly, attract attention, and coordinate collective behavior contributed to their widespread adoption across military, security, sporting, and public organizations (Perrucci et al., 1980).

Whistles as Symbols of Authority and Organizational Control

The significance of whistles extends beyond their practical communication function. Institutional studies indicate that whistles acquire symbolic meaning through their association with organizational authority and legitimacy (Li, 2017). A whistle signal is interpreted as meaningful because it originates from a recognized authority operating within an established organizational structure.

The effectiveness of whistle communication depends on collective acceptance of institutional rules governing interpretation and response. Members of an organization learn to associate specific whistle patterns with particular commands, responsibilities, or behavioral expectations. Repeated exposure, training, and enforcement transform whistle signals into symbols of authority capable of regulating collective action (Miethe & Rothschild, 1994).

The concept of whistleblowing illustrates the broader symbolic significance of whistle-related communication. The term metaphorically refers to warning others about misconduct or violations within an organization, reflecting the historical association between whistle signals, alert mechanisms, and social control (Stewart, 1980). The authority of a whistle therefore derives not solely from its acoustic properties but from the institutional legitimacy that supports and validates its meaning (Peirce, 1985).

Whistle Communication in the Indonesian Navy

Within the Indonesian Navy, whistles function as official auditory communication signals used to regulate activities, transmit commands, notify personnel, and coordinate responses. Whistle signals support communication in environments where verbal interaction may be impractical due to distance, operational conditions, or organizational procedures. The meaning of whistle signals is formally established through organizational regulations, training processes, and institutional conventions. Different whistle patterns correspond to specific commands and expected responses. Personnel learn these meanings through systematic training and repeated operational practice, creating a shared interpretive framework throughout the organization (Kodaeral IV, 2023)

From a Peircean perspective, naval whistle signals operate simultaneously as indices and symbols. The sound indicates the occurrence of a command requiring attention and action, while its specific meaning is derived from organizational conventions recognized collectively by naval personnel. The whistle therefore represents more than a communication device; it functions as a sign system that embodies authority, discipline, coordination, and institutional order. Despite its continuing operational relevance, studies examining naval whistle signals as auditory signs within a semiotic framework remain limited. This gap provides the basis for investigating how whistle sounds in the Indonesian Navy generate meaning, communicate authority, and shape collective behavior through processes of interpretation and organizational practice.

METHOD

Research Design

This study employs a qualitative research approach to explore the meaning and interpretation of whistle sounds within the organizational context of the Indonesian Navy (TNI AL). A qualitative approach was selected because the research focuses on symbolic meanings, interpretations, and communicative practices that cannot be adequately measured through quantitative methods (Sa'diyah & Rafiuddin, 2025). This study employs a qualitative semiotic approach using Charles Sanders Peirce's semiotic framework to investigate the meaning and interpretation of whistle sounds within the Indonesian Navy (TNI AL). This approach was chosen because the study focuses on symbolic meanings, sign interpretation, and communicative practices embedded in whistle signals. The analysis is

guided by Peirce's triadic model of representamen, object, and interpretant, which enables an in-depth examination of how whistle sounds function as signs within military communication. A qualitative semiotic approach is appropriate because these meanings cannot be adequately measured through quantitative methods (Chandler, 2025). In military environments, communication often involves symbolic and nonverbal signals whose meanings are shaped by institutional culture, discipline, and shared training experiences.

This study was situated within an interpretive qualitative that seeks to understand how individuals construct and share meanings through social interaction and cultural practices. The interpretive perspective is particularly relevant for examining whistle communication because the meanings of whistle signals are not inherent in the sounds themselves but are socially and institutionally constructed through military training, organizational norms, and collective experience.

To analyze these symbolic meanings, the study applies Charles Sanders Peirce's semiotic framework. Semiotic analysis enables the researcher to examine how whistle sounds function as signs that are collectively interpreted within a structured military hierarchy. Through this perspective, whistle signals are understood not merely as auditory cues but as communicative signs that convey specific commands, warnings, or situational information. The semiotic framework also allows the research to identify the relationship between the sound itself, the operational context in which it is used, and the interpretation formed by naval personnel.

Research Participants

The research involved eleven informants who were selected based on their professional experience and direct familiarity with whistle communication practices in the Indonesian Navy. The inclusion of participants from different ranks, operational units, and service statuses was intended to capture variations in experience, responsibility, and institutional perspective. Senior officers provided insights into policy and command functions, while operational personnel contributed practical knowledge regarding the implementation of whistle communication in everyday military activities. Retired personnel offered historical reflections that helped contextualize the evolution and continuity of whistle communication practices within the institution.

Table 1

Characteristics of the participants

Code	Status	Rank	Affiliation	Position/Role
P1	Active	Colonel (KH)	Naval Military Command Headquarters	Officer
P2	Active	Colonel	Naval Staff Headquarters	Officer
P3	Active	Personnel	Naval Military Command Headquarters	Operations Unit Personnel

P4	Active	Non-Commissioned Officer	Naval Military Command Headquarters	Permanent Guard Officer (Pagatap)
P5	Active	Major (P)	Marine Corps Training Center, Naval Staff School	Officer
P6	Active	Captain (P)	Naval Staff School	Officer
P7	Active	Peltu Keu	Naval Staff School	Permanent Guard Officer (Pagatap)
P8	Active	Sergeant Bah	Naval Staff School	Personnel
P9	Active	Sergeant Bah	Naval Staff School	Personnel
P10	Retired	Rear Admiral	Retired Indonesian Navy Personnel	Former Senior Officer
P11	Retired	Colonel	Retired Indonesian Navy Personnel	Former Officer

Sampling Technique

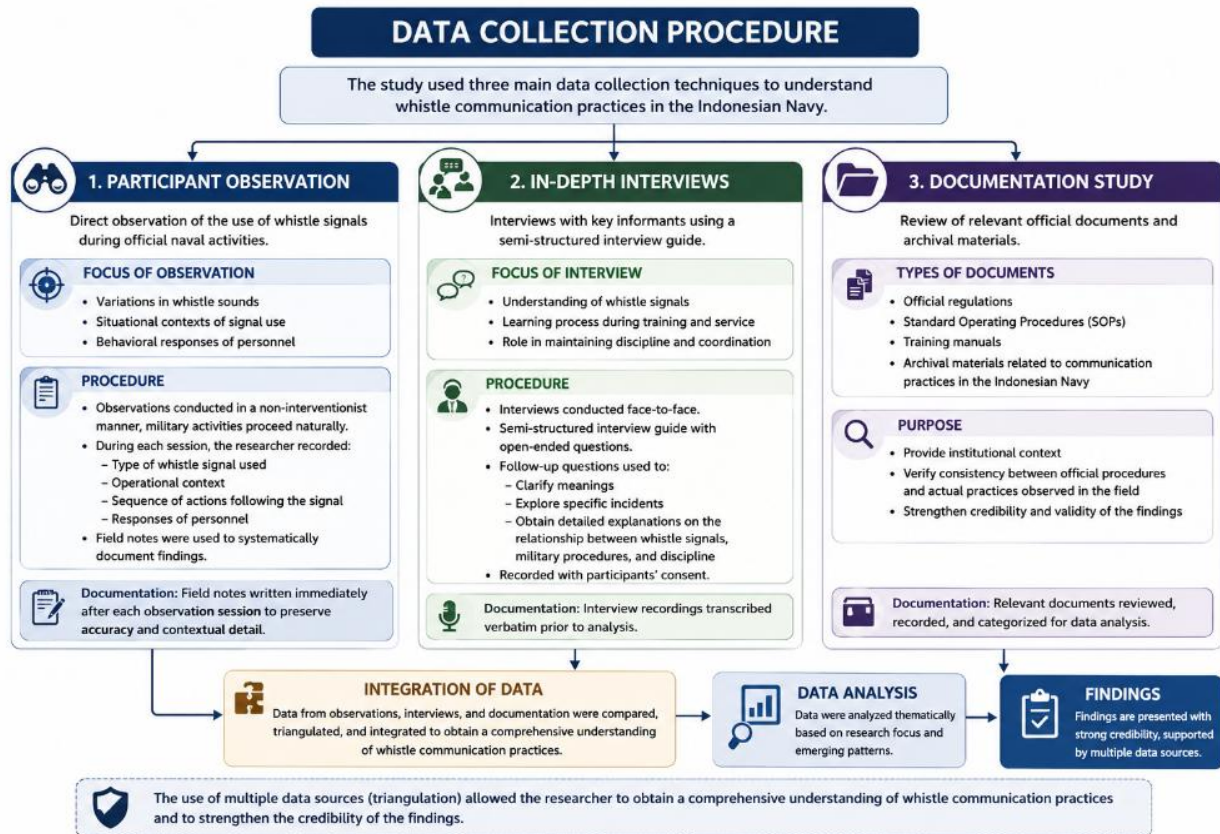
The selection of informants was conducted using purposive sampling. This sampling technique is commonly used in qualitative research when participants are chosen based on specific knowledge or experience relevant to the research topic. Informants were selected based on three criteria: (1) they had served or were currently serving in units that regularly use whistles as part of operational or ceremonial communication; (2) they possessed knowledge of official communication procedures within the Indonesian Navy; and (3) they were willing to provide detailed information regarding their experiences and interpretations of whistle signals. The number of participants was determined using the principle of data saturation. Data collection continued until the information obtained from participants became repetitive and no significant new insights emerged.

The research was conducted within official environments of the Indonesian Navy where whistle communication is routinely practiced. These locations included ceremonial areas, military training grounds, and guard duty posts. Conducting the research in these settings allowed the researcher to observe whistle signals in their authentic operational context. The timing of the research was aligned with the operational schedules and institutional activities of the units involved. Observations were carried out during routine activities such as military ceremonies, marching drills, and guard duty rotations. These contexts provided realistic situations in which whistle signals are used as part of command and coordination mechanisms.

Data Collection Techniques

Data were collected through three main techniques: participant observation, in-depth interviews, and documentation study (Safarudin et al., 2023). The use of multiple data sources allowed the researcher to obtain a comprehensive understanding of whistle communication practices and to strengthen the credibility of the findings.

Picture 1.
Data collection procedure



(Note: This figure was created by ChatGPT with prompt Design an academic infographic showing the qualitative data collection procedure consisting of participant observation, in-depth interviews, and documentation study, followed by data integration, thematic analysis, and findings through triangulation.)

Data were collected through participant observation, semi-structured interviews, and document analysis (Chand, 2025). Participant observation was conducted in a non-interventionist manner during official naval activities to examine the use of whistle signals, their operational contexts, and personnel responses, with field notes recorded immediately after each observation. Semi-structured, face-to-face interviews were conducted with key informants to explore their understanding of whistle signals, how these signals are learned through training and service, and their role in maintaining discipline and operational coordination. Interviews were audio-recorded with participants' consent, transcribed verbatim, and guided by open-ended questions with follow-up probes to elicit detailed explanations. To complement and validate the field data, relevant institutional documents, including official regulations, standard operating procedures, training manuals, and archival materials, were analyzed to provide contextual information and verify the consistency between formal communication protocols and observed practices.

Several strategies were employed to ensure the validity and credibility of the research findings. Source triangulation was conducted by comparing information obtained from different participants, including both active and retired naval personnel. Technical triangulation was implemented by comparing data collected through observation, interviews, and documentation. Time triangulation was also applied by conducting observations under different circumstances and at different times. In addition, member checking was conducted to confirm the accuracy of the researcher's interpretations. Informants were given the opportunity to review and validate the interpretations derived from the interview data, ensuring that the findings accurately reflected their perspectives and experiences (Fikri et al., 2025).

Data Analysis

Data analysis was conducted simultaneously with the data collection process. The initial stage involved data reduction by identifying, selecting, and organizing relevant information obtained from observations, interviews, and documentation. The reduced data were then displayed and interpreted to facilitate the drawing and verification of conclusions (Miles et al., 2014). The researcher focused on identifying patterns of whistle signals, contexts of usage, and interpretations provided by informants.

Following data reduction, the data were coded iteratively to identify recurring themes and patterns related to whistle communication across interview transcripts, observation notes, and documentary evidence. The coded data were then analyzed using Peirce's triadic semiotic model, comprising the representamen (the whistle sound as a sign), the object (the command, situation, or operational instruction represented), and the interpretant (the meaning constructed by naval personnel). Each whistle signal was organized into an analytical matrix containing these three components, along with its situational context and supporting evidence, to facilitate systematic comparison. Finally, the signals were classified as icons, indices, or symbols based on Peirce's typology, enabling the researcher to interpret how whistle signals function as an institutionalized system of nonverbal communication within the Indonesian Navy.

RESULTS

Variations of Whistle Sound Patterns in Indonesian Navy Communication

The findings indicate that whistle signals used within the operational environment of the Indonesian Navy represent a structured and standardized system of nonverbal communication. Observations conducted during ceremonial activities, marching drills, and guard duty operations reveal that whistle sounds are not used arbitrarily but follow established sound patterns that are consistently recognized by personnel. The use of whistles serves as a rapid communication mechanism capable of delivering commands

without relying on verbal instructions, particularly in situations where noise, distance, or operational urgency may limit verbal interaction.

Based on participant observation and in-depth interviews, four primary variations of whistle signals were identified. These include: (1) a single short blast, (2) repeated short blasts, (3) a single long blast, and (4) a sequential combination of short and long blasts. Each variation corresponds to specific operational contexts and conveys particular instructions within the command structure of naval activities.

During the observation period, repeated short blasts were the most frequently encountered signal, accounting for approximately 38% of all whistle communications recorded during drills and ceremonial activities. Single short blasts represented 30%, single long blasts 18%, and short-long combination blasts 14%. Although these frequencies varied depending on the operational setting, the data indicate that assembly and readiness commands constitute the dominant functions of whistle communication within routine naval activities.

The single short blast typically functions as an attention or readiness command. This signal instructs personnel to immediately prepare for further commands or instructions. Observational data show that soldiers respond to this signal by adopting a ready posture and focusing their attention toward the command source. *“When we hear a single short whistle, we immediately understand that further instructions will follow. Everyone is expected to stop other activities and focus on the commander.”* (P3). The repeated short blasts are commonly used to instruct personnel to gather or move toward a designated assembly point. In such cases, the rhythmic repetition of the whistle produces a recognizable auditory cue that prompts coordinated movement among personnel.

The single long blast is generally associated with warning situations or heightened alertness. Informants explained that the prolonged sound pattern immediately signals the need for increased vigilance or rapid situational assessment. This signal is particularly relevant in contexts involving potential threats, emergency conditions, or sudden operational changes. *“A long whistle is usually associated with situations requiring heightened awareness. The sound immediately signals us to assess the situation and prepare for possible action.”* (P5). Meanwhile, the combination of short and long blasts is used to convey specific instructions that are understood through established operational conventions. Interview data indicate that the precise meaning of sequential whistle combinations depends on the operational context and the specific training protocol being implemented. For example, a short-long sequence may signal a transition between activity stages during ceremonial formations, whereas other combinations may indicate movement adjustments during drill exercises. Personnel learn these combinations through repeated practice and operational

briefings, ensuring a shared understanding across units. These signals often appear in ceremonial or training contexts where precise coordination among units is required.

These variations demonstrate that whistle signals operate as a structured auditory system embedded within the organizational practices of the Indonesian Navy. The consistency of interpretation among personnel indicates that these signals have been institutionalized through repeated training and operational use. Rather than relying on spontaneous interpretation, soldiers respond to whistle sounds based on shared knowledge acquired through formal military education and training routines.

Semiotic Structure of Whistle Signals: Representamen, Object, and Interpretant

Semiotic analysis of whistle signals reveals that the communicative function of the whistle can be understood through Peirce's triadic model of signs, consisting of representamen, object, and interpretant. In this framework, the whistle sound itself functions as the representamen, or the perceptible form of the sign. The representamen refers to the specific auditory pattern produced by the whistle, such as short bursts or prolonged tones.

The object of the sign refers to the command, instruction, or situational condition represented by the whistle signal. For example, a repeated short whistle may refer to the instruction to assemble, while a long whistle may indicate a warning or alert condition. The object therefore represents the operational reality or command structure that the whistle signal seeks to communicate.

The interpretant represents the meaning constructed by the soldiers when they hear the whistle signal. This interpretant is manifested through immediate behavioral responses that correspond to the intended command. For instance, upon hearing a short-repeated whistle, personnel instinctively move toward a designated gathering point without requiring additional verbal explanation. The interpretant therefore represents the internalized understanding that connects the auditory signal to a specific operational action.

Evidence from field observations and interview data further confirms the operation of Peirce's triadic sign structure in whistle communication. The representamen was observed in the form of distinct whistle sound patterns used during ceremonial formations, marching drills, and guard duty activities. Observational records documented recurring auditory signals consisting of short repeated whistles and prolonged whistle blasts. The object associated with these signals was identified through interviews with military personnel, who explained that each sound pattern corresponded to specific operational commands, such as assembly, movement initiation, attention, or warning instructions. The interpretant was evidenced by the immediate and consistent responses displayed by personnel following the whistle signals. During observations, soldiers responded to particular whistle patterns by gathering at designated locations, adjusting formations, or

preparing for subsequent commands without verbal clarification. These findings demonstrate that the meaning of whistle signals is not inherent in the sound itself but emerges through the established relationship between the representamen, the object it refers to, and the interpretant constructed collectively by trained personnel.

The research findings indicate that this process of meaning construction operates collectively rather than individually. Soldiers do not interpret whistle signals based on personal perception alone. Instead, interpretation is shaped by shared institutional training and standardized operational procedures. As a result, whistle signals trigger predictable behavioral responses across different ranks and units.

This collective interpretation is particularly important within military environments where communication must be immediate, precise, and universally understood. The semiotic relationship between representamen, object, and interpretant enables whistle signals to function as efficient communication tools capable of coordinating group actions within highly structured organizational settings.

Although the interpretation of whistle signals is generally standardized, several informants acknowledged that ambiguity may arise when environmental conditions interfere with sound transmission. Strong wind, engine noise, or overlapping operational activities may occasionally reduce signal clarity. However, such ambiguities are typically minimized through repetitive training, contextual awareness, and the use of complementary visual commands when necessary.

Classification of Whistle Signals as Symbolic and Indexical Signs

Further analysis using Peirce's typology of signs indicates that whistle signals within the Indonesian Navy predominantly function as symbolic signs. In Peirce's semiotic framework, symbols are signs whose meanings are established through social convention rather than natural resemblance or direct causal connection. The relationship between the whistle sound and its meaning is not inherent in the sound itself but is instead constructed through institutional agreement and training.

Within the Indonesian Navy, the meaning of whistle signals is formally established through military doctrine, training manuals, and operational procedures. Personnel learn to associate particular sound patterns with specific commands through repetitive training exercises and ceremonial drills. As a result, the whistle becomes a symbolic representation of authority and command within the naval communication system.

However, the findings also reveal that whistle signals may function as indexical signs in certain operational contexts. Indexical signs are characterized by a direct relationship between the sign and the situation it indicates. For example, a long whistle blast used as a warning signal often occurs in response to a developing situation that requires immediate

attention. In this context, the whistle sound is directly linked to the presence of an urgent or potentially hazardous condition.

This dual function illustrates the flexibility of whistle signals as communicative signs. While the majority of whistle signals operate symbolically through learned conventions, certain signals acquire indexical characteristics when they are directly connected to situational events. The semiotic role of the whistle therefore depends on the operational context in which the signal is produced.

Table 2

Peircean Semiotic Analysis of Whistle Signals in Indonesian Navy Communication System

Whistle Sound Variation	Representamen (Form of the Sign)	Referent Object	Interpretant (Meaning for Soldiers)	Sign Category (Peirce)
Single short blast	A short and sharp whistle sound	Ready or attention command	Soldiers immediately prepare and focus	Symbol
Repeated short blasts	A rhythmic sequence of short whistle sounds	Command to assemble or form up	Soldiers move toward the assembly point	Symbol
Single long blast	A long and loud whistle sound	Warning or danger signal	Soldiers increase alertness	Index
Short-long combination blast	A sequential pattern of short and long whistle sounds	Specific official instruction	Soldiers adjust their actions according to standard operating procedures (SOP)	Symbol

Source: Research dataset, 2026

Table 2 presents the relationship between whistle sound variations, their representational form, the object they refer to, and the interpretant produced among naval personnel. The table demonstrates that most whistle signals are categorized as symbolic signs due to their reliance on institutional convention, while a smaller number of signals exhibit indexical properties when associated with warning situations.

Institutional Learning and Standardization of Whistle Meaning

Interviews with informants reveal that the meaning of whistle signals is systematically taught and reinforced through various stages of military training. Evidence of this process was obtained from training manuals and corroborated by informant descriptions of basic military education practices. Basic military education introduces recruits to the standardized

whistle patterns used in naval communication. During this stage, recruits learn to recognize different whistle sounds and associate them with corresponding commands.

This knowledge is further reinforced during marching drills, ceremonial activities, and guard duty assignments. These routine practices serve as repetitive training environments where personnel continuously apply whistle-based communication in real operational contexts. Informants emphasized that understanding whistle signals is considered an essential component of military discipline and operational readiness.

Unlike informal communication systems, the interpretation of whistle signals within the Indonesian Navy is not optional or subjective. Personnel are expected to respond immediately and correctly to whistle commands as part of their professional responsibilities. This was emphasized by multiple informants who stated that whistle misinterpretation is treated as a procedural error during training evaluations. Failure to interpret whistle signals accurately may disrupt coordination and compromise operational efficiency.

The standardized nature of whistle communication ensures that personnel from different units or ranks share the same understanding of signal meanings. Similar patterns of signal standardization have been reported in other military and paramilitary organizations, where whistle sounds function as nonverbal command systems that facilitate rapid collective coordination. The findings of this study suggest that the Indonesian Navy shares this broader institutional characteristic while maintaining signal conventions adapted to its specific operational environment. This uniformity allows whistle signals to function as a reliable communication mechanism capable of coordinating large groups of soldiers simultaneously. This effectiveness was observed during drill sessions where coordinated movements occurred within seconds after whistle signals were issued.

The Whistle as an Institutionalized Military Communication System

The findings demonstrate that whistle signals function as an institutionalized auditory communication system within the Indonesian Navy. Their effectiveness lies in their ability to transmit commands quickly, clearly, and uniformly across different operational situations. Whistle communication is particularly effective in environments where verbal communication may be limited by noise, distance, or urgency. In training grounds, ceremonial areas, and guard duty locations, whistle signals allow commanders to deliver instructions that can be immediately recognized by personnel without requiring visual contact or extended verbal explanation. Furthermore, whistle signals reinforce the hierarchical structure of military communication. The authority embedded in the whistle sound reflects the command structure of the organization, ensuring that instructions are transmitted efficiently from commanders to personnel. In this sense, the whistle functions not only as a technical signaling device but also as a symbolic representation of institutional authority and discipline. The findings therefore indicate that the whistle represents more than a simple auditory tool. It operates as an institutional sign system that coordinates collective behavior, reinforces discipline, and maintains operational efficiency within the communication practices of the Indonesian Navy.

DISCUSSION

The findings of this study contribute to a deeper understanding of how nonverbal communication systems operate within military organizations. By applying Peirce's semiotic framework, the study demonstrates that whistle signals function as structured signs whose meanings are produced through institutional conventions and shared interpretive frameworks. This finding supports the argument of Peirce that meaning emerges through a triadic relationship among representamen, object, and interpretant, in which signs acquire significance through ongoing processes of interpretation within specific social contexts (Kilstrup, 2015). The findings also reinforce the perspective of organizational semiotics, which suggests that organizational symbols, signals, and codes are socially constructed through socialization, training, and institutional legitimation rather than through inherent characteristics of the signs themselves (Aulia et al., 2025).

The analysis revealed that whistle sounds function as representamina, operational commands serve as objects, and soldiers' responses constitute interpretants. This finding demonstrates that meaning is not embedded in the whistle sound itself but emerges through shared interpretations developed within the organizational environment. Such results are consistent with Peirce's conception of semiosis as a dynamic process in which signs generate meaning through interpretation (Hoopes, 2014). The findings further support previous studies emphasizing that organizational communication systems depend on collectively shared meanings maintained through institutional structures and repeated practices (Lammers, 2011).

A significant finding of this study is the predominance of symbolic signs in naval whistle communication. According to Peirce, symbols derive their meaning from convention rather than from resemblance or direct causal relationships. The findings indicate that whistle patterns are understood because naval personnel have undergone standardized training that establishes common interpretations of signal meanings. This result confirms the argument that organizational signs obtain communicative power through institutional conventions, training processes, and collective agreement among organizational members (Li, 2017). Within military organizations, where operational effectiveness depends on synchronized action, the existence of shared symbolic meanings is essential for maintaining command and control functions (Talbert & Naiden, 2017).

The findings also reveal that whistle signals occasionally function as indexical signs, particularly when associated with warning situations or immediate operational conditions. This observation supports Peirce's classification of indices as signs that maintain a direct relationship with the situations or events they signify (Kilstrup, 2015). Similar characteristics of auditory signs have been identified in semiotic studies of sound-based communication, which suggest that sounds frequently operate simultaneously as indicators of ongoing

events and as socially constructed symbols (Rasakumaran, 2018). The present study extends these observations by demonstrating how indexical and symbolic functions coexist within a formal military communication system.

From the perspective of military communication theory, the findings highlight the continuing importance of auditory signaling systems in operational environments. Previous studies have noted that military organizations frequently rely on nonverbal communication forms such as hand signals, flags, sirens, bugles, and whistles because operational conditions often restrict the effectiveness of verbal communication (Ramdani et al., 2024). The present findings support this perspective by showing that whistle communication remains an effective medium for transmitting commands and coordinating collective responses within the Indonesian Navy. Unlike previous studies that primarily discuss military signals from a functional or operational standpoint, this study demonstrates that whistle communication also possesses important symbolic and semiotic dimensions.

The institutionalization of whistle signals observed in this study further confirms previous arguments that whistle communication derives its effectiveness not solely from acoustic properties but also from institutional legitimacy and organizational authority (Perrucci et al., 1980). The findings indicate that whistle signals are obeyed because personnel recognize them as legitimate representations of organizational authority. Similar observations have been reported in studies examining the role of whistles as symbols of authority and organizational control, where repeated exposure, training, and enforcement transform whistle sounds into authoritative communication symbols capable of regulating collective behavior (Miethe & Rothschild, 1994). Therefore, the effectiveness of whistle communication within the Indonesian Navy can be understood as the result of both communicative functionality and institutional legitimacy.

The findings also support previous research emphasizing the role of organizational culture and training in maintaining communication effectiveness. Organizational semiotics suggests that shared interpretations emerge through continuous processes of socialization and institutional reinforcement (Aulia et al., 2025; Lammers, 2011). Within the Indonesian Navy, repeated drills, operational exercises, and formal training contribute to the formation of stable interpretants among personnel. Consequently, whistle signals become embedded within soldiers' cognitive and behavioral routines, enabling rapid and coordinated responses. This finding corresponds with military communication studies that identify discipline, training intensity, and procedural standardization as key factors supporting operational coordination (Talbert & Naiden, 2017).

This study contributes to the existing literature by addressing a gap identified in previous semiotic research. Earlier studies have predominantly focused on textual, visual, and popular communication contexts, while investigations of auditory signs within formal

organizations, particularly military institutions, remain limited (Kilstrup, 2015; Rasakumaran, 2018). Furthermore, existing military communication studies tend to emphasize operational effectiveness and communication technology rather than the symbolic dimensions of traditional signaling systems. By examining whistle communication through Peirce's semiotic framework, the present study extends the application of organizational semiotics into the domain of military auditory communication. The study therefore provides empirical evidence that whistle signals function not merely as operational tools but also as institutional signs that embody authority, discipline, organizational order, and collective identity.

From a broader theoretical perspective, the findings extend Peirce's semiotic framework by illustrating how institutional environments influence the formation and preservation of shared interpretants. The results suggest that meaning-making processes are closely connected to organizational structures, training systems, and power relations that regulate interpretation. While Peirce's theory explains how signs generate meaning, the present study demonstrates how military institutions sustain that meaning through organizational practices and disciplinary mechanisms. In this respect, the study expands existing semiotic scholarship by linking semiosis with organizational authority and military culture.

Several limitations should be acknowledged. The study focuses on whistle communication within a specific organizational setting of the Indonesian Navy, which may limit the transferability of findings to other military branches or non-military institutions. The analysis is primarily based on qualitative interpretations of signaling practices and therefore does not measure the operational effectiveness of whistle communication under different field conditions. Future research may compare whistle signaling systems across military organizations, investigate the integration of traditional auditory signals with contemporary communication technologies, and examine variations in signal interpretation across different hierarchical levels. Such studies would contribute to a more comprehensive understanding of military semiotics, nonverbal communication, and organizational communication in contemporary defense environments.

CONCLUSION

The Indonesian Navy's whistle functions as an effective and institutionalized nonverbal communication system in official military practice. Using Charles Sanders Peirce's semiotic framework, this study found that variations in whistle sounds operate as representamen that convey specific commands and prompt immediate responses from personnel. These findings address a gap in military communication research, which has predominantly focused on technological communication systems, by highlighting the symbolic role of traditional auditory communication within a maritime defense organization. The novelty of this study lies in applying Peirce's semiotic theory to analyze whistle sounds as symbols of

auditory communication in a military context. The whistle is not merely a signaling device but also represents military discipline, command hierarchy, and organizational professionalism. This perspective broadens the application of semiotic studies beyond textual and visual signs to institutional auditory communication practices.

The study contributes to organizational and military communication scholarship by demonstrating how traditional sign systems continue to support communication effectiveness and organizational identity within modern institutions. Practically, understanding the symbolic meanings embedded in whistle signals can help maintain command consistency and communication efficiency while preserving military traditions amid technological modernization. This study is limited to whistle communication practices in the Indonesian Navy and relies on qualitative interpretation within Peirce's semiotic framework. Future research could examine similar auditory communication systems in other military institutions, explore their integration with modern communication technologies, or employ mixed-methods approaches to investigate personnel interpretations and communication effectiveness more comprehensively.

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Research Article

Teacher Agency and Institutional Mediation in English Language Materials Development in Philippine Higher Education

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ABSTRACT

English language learning materials are central to higher education, but the institutional processes through which they are planned, reviewed, implemented, and revised remain underexamined. This qualitative multiple-case study investigated faculty-led and institutionally mediated English-language materials development across three Philippine higher education institutions. Data were collected through nine semi-structured interviews, three focus group discussions, six non-participant classroom observations, and analysis of 24 institutional and instructional documents, including syllabi, modules, worksheets, presentation slides, review forms, revision notes, and assessment materials. Inductive thematic analysis showed that faculty acted as creators, adapters, implementers, reviewers, evaluators, and revisers of materials. The materials-development decisions were shaped by syllabi, national higher education quality-assurance expectations, institutional goals, learner needs, professional communication demands, peer review, committee checking, classroom experience, and feedback-informed revision. Cross-case analysis showed that institutional mediation existed across cases but varied in formality. The findings yielded an exploratory institutional adaptation framework comprising curricular and institutional alignment, learner-related needs diagnosis, contextualized and authentic design, collaborative quality review, classroom implementation, evaluation and evidence gathering, and revision and renewed alignment. The findings clarify how teacher agency operates within institutional structures and offer higher education departments a process-oriented basis for organizing the development, review, implementation, and revision of English language materials.

Keywords: *English language materials development, teacher agency, institutional mediation, higher education, qualitative case study*

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INTRODUCTION

Language learning materials connect curriculum expectations, teacher decision-making, classroom practice, and learner needs. In higher education, these materials include printed, digital, multimedia, assessment, and teacher-developed resources. In the Philippines, where English supports academic and professional communication, its contextualized development is a practical concern for faculty and institutions.

Materials development encompasses the selection, adaptation, design, implementation, evaluation, and revision of instructional resources in response to learners, curricular requirements, and teaching conditions (McDonough et al., 2013; Tomlinson, 2012, 2020). In this study, validation refers to practical checking for alignment, clarity, relevance, linguistic accuracy, accessibility, and institutional compliance. Teacher agency denotes faculty members' professionally situated capacity to interpret expectations and make material decisions, whereas institutional mediation refers to the policies, syllabi, outcomes, review procedures, resources, and departmental norms that enable, guide, or constrain those decisions (Li, Wu, et al., 2023; Priestley et al., 2015; Wang, 2022). English language faculty are treated as instructors who develop or adapt materials for their courses, not necessarily as formally appointed curriculum developers.

"Language materials are not merely tools for teaching; they are spaces where teacher agency, learner needs, and institutional expectations meet."

Research recognizes teachers as users, analysts, evaluators, adapters, designers, and writers of language materials (Banegas et al., 2020; Li, Gao, et al., 2023; Ulla & Perales, 2021). It also shows that materials work is shaped by policy, institutional expectations, collective norms, professional identity, and classroom conditions (Li, Wu, et al., 2023; Tarrayo & Anudin, 2023). However, limited process-level evidence traces how faculty agency interacts with formal and informal institutional mechanisms across the complete cycle of planning, review, implementation, evaluation, and revision in Philippine higher education.

The Philippine quality-assurance environment emphasizes coherence among outcomes, learning activities, materials, and assessment through outcomes-based policies and the general education curriculum framework established by the Commission on Higher Education (CHED, 2012, 2013). These policies do not prescribe one materials-development procedure, but they shape institutional expectations for alignment and accountability. Cabanatuan City offers a relevant provincial setting because its public and private higher education institutions serve students from urban and nearby rural communities while operating within this national policy environment.

Accordingly, this study examined faculty-led and institutionally mediated English language materials development across three higher education institutions. It addressed the following questions:

- (1) How do English language course instructors, acting as materials developers, describe their roles and practices in developing, adapting, validating, implementing, evaluating, and revising language learning materials?
- (2) How do curricular expectations, learner needs, and institutional quality-assurance practices shape these materials-development processes?
- (3) What emergent institutional adaptation framework can be derived from these faculty-reported and institutionally mediated practices?

The study contributes a process-oriented account of materials development in provincial Philippine higher education, supported by faculty accounts, documents, and classroom observations rather than product or outcome evaluation.

LITERATURE REVIEW

Language Materials Development as a Pedagogical and Institutional Process

Language materials include textbooks, modules, worksheets, multimedia, digital tools, authentic texts, assessments, and teacher-developed tasks. Their development involves evaluating, adapting, producing, using, and revising resources for language teaching (Tomlinson, 2012). Effective materials are responsive to learners, pedagogically purposeful, and open to refinement (McDonough et al., 2013; Tomlinson, 2011, 2020). Because materials mediate curriculum and classroom action, they may either constrain or empower teachers and learners depending on how flexibly they are interpreted and used (Maley, 2011).

Teacher Agency and Teachers as Materials Developers

Teacher agency is the capacity to make professional decisions within the cultural, structural, and material conditions of work. From an ecological perspective, agency is achieved through the interaction of experience, present conditions, and future purposes rather than possessed as an individual trait (Priestley et al., 2015). In materials development, it is expressed when teachers interpret curriculum requirements, diagnose learner needs, select or adapt resources, design tasks, and revise instruction based on classroom evidence.

Recent studies position language teachers as materials developers rather than passive users. They may act as analysts, evaluators, adapters, designers, writers, and digital materials creators (Li, Gao, et al., 2023; Tajeddin & Asadnia, 2025; Ulla & Perales, 2021). These roles can support professional knowledge and identity, but their enactment remains conditioned by policy, institutional expectations, group norms, resources, and individual beliefs (Banegas et al., 2020; Li, Wu, et al., 2023; Wang, 2022). Thus, materials development is a negotiated practice in which faculty judgment operates within institutional structures.

Curricular Alignment, Quality Assurance, and Institutional Mediation

Higher education materials are shaped by curricular alignment and institutional quality assurance. Constructive alignment requires coherence among intended outcomes, teaching activities, materials, and assessment (Biggs, 2014), while curriculum development likewise depends on correspondence among goals, content, procedures, and evaluation (Richards, 2001). In the Philippines, CHED Memorandum Order No. 46, series of 2012, and CHED

Memorandum Order No. 20, series of 2013, establish the broader outcomes-based and general education environment within which institutions organize materials and review practices (CHED, 2012, 2013).

In this study, validation is a practical pedagogical and institutional process rather than a psychometric claim. It includes formal or informal checking by peers, committees, faculty teams, or the teacher for curricular alignment, clarity, accuracy, relevance, accessibility, and suitability. The degree and timing of such review may differ across institutions.

Contextualized, Authentic, Digital, and Profession-Oriented Materials

Contextualization connects language objectives with learners' local, academic, disciplinary, and professional circumstances. Authenticity concerns the relationship among text, task, learner, purpose, and context rather than the use of real-world texts alone (Gilmore, 2007). English for Specific Purposes similarly begins with learners' academic and occupational purposes (Hutchinson & Waters, 1987; Hyland, 2022). Accordingly, higher education materials may incorporate workplace communication, current issues, discipline-related texts, digital prompts, and locally familiar examples.

Contextualized or digital materials are not inherently effective. Locally produced and adapted resources may still present problems involving difficulty, access, task design, and cultural representation and therefore require teacher mediation and systematic review (Hanifa et al., 2024; Toledo-Sandoval, 2020). Digital handouts, slides, online tasks, videos, and authentic links must likewise remain aligned, clear, accessible, and responsive to classroom evidence (Tajeddin & Asadnia, 2025).

Feedback-Informed Revision and the Research Gap

Materials development continues after initial classroom use through evaluation, feedback, and revision. Feedback is educationally useful when teachers and learners can interpret and act on it (Carless & Boud, 2018), and it may help reduce gaps between current and intended performance (Hattie & Timperley, 2007). For materials, relevant evidence may come from learner responses, peer comments, observations, assessment information, review documents, and reflective practice.

Studies in Southeast Asian and Philippine contexts show that language teachers' materials work is context-sensitive and institutionally situated (Li, Wu, et al., 2023; Tarrayo & Anudin, 2023; Ulla & Perales, 2021). Less documented is how English language faculty across multiple Philippine higher education institutions negotiate curricular alignment, institutional review, classroom implementation, evaluation, and revision as an interconnected process. This study addresses that gap.

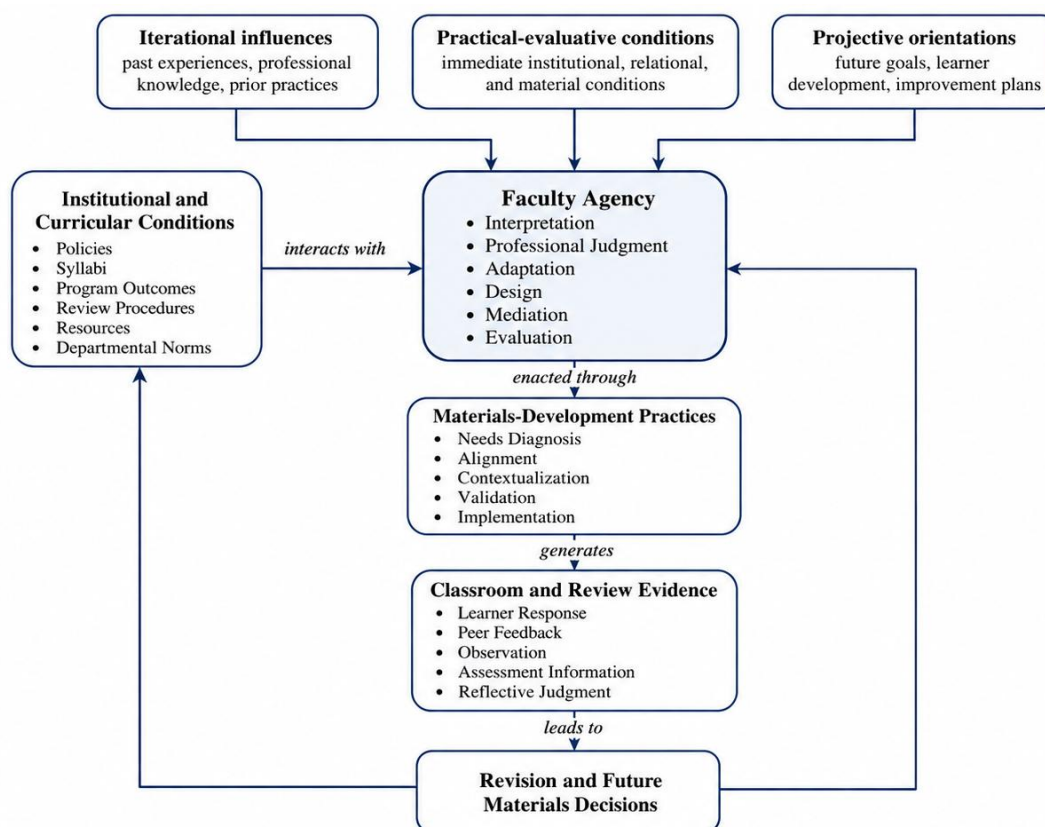
Conceptual Lens

The study uses an ecological view of teacher agency as its conceptual lens. Teacher agency, institutional mediation, and English language materials development are treated as interrelated analytical constructs rather than statistically tested variables. Faculty exercise

agency when selecting, adapting, designing, reviewing, implementing, and revising materials, but their choices are mediated by syllabi, CHED-related expectations, program outcomes, departmental procedures, resources, and classroom constraints. Figure 1 represents this recursive relationship among ecological influences, institutional conditions, faculty action, materials practices, classroom and review evidence, and subsequent revision.

Figure 1

Ecological and institutionally mediated process of English language materials development



Note. The process is recursive rather than strictly linear; classroom evidence and revision experiences inform later professional judgment and institutional practices.

METHOD

Research Design and Context

This study used a qualitative multiple-case study design with a descriptive and interpretive orientation. Case study research is appropriate when the inquiry focuses on a contemporary phenomenon within its real-life context and when multiple forms of evidence are used to understand the case (Yin, 2018). The unit of analysis was the institutionally mediated English-language materials development process within each participating higher education institution. Each case was bounded by the institutional context, participating faculty, English-language materials used during the data-collection period, and relevant review or revision documents.

Within-case analysis was conducted first to identify materials development practices within each institution; cross-case analysis was then used to identify convergences, divergences, and recurring patterns across the three cases. The cross-case component was interpretive rather than statistical. The study did not measure the statistical effectiveness of materials or compare institutions quantitatively.

The study was conducted in three higher education institutions in Cabanatuan City, Nueva Ecija. All three were recognized Philippine higher education institutions operating within the national policy and quality-assurance environment established by the Commission on Higher Education. The study did not independently audit or certify institutional compliance with specific CHED memorandum orders; rather, it examined how participants described and documented the influence of course outcomes, institutional policies, review procedures, and CHED-related expectations on materials-development practices. To protect confidentiality, the institutions are identified as Case A, Case B, and Case C. Case A was a public institution with comparatively formal standards and review procedures, whereas Cases B and C were private institutions in which peer review and classroom-based revision were more prominent. The three participating institutions were purposively selected because they were information-rich cases in which English language faculty were directly involved in developing, adapting, reviewing, implementing, or revising instructional materials. The cases provided variation in institutional type, participant distribution, and materials-review practices while remaining within the same city context. Three cases were considered sufficient because the aim was to identify patterns and contrasts within a bounded local context rather than to produce a statistically generalizable account.

Participants and Sampling

Nine participants were selected purposively because they had direct experience in higher education English language teaching and in at least one stage of materials development: creation, adaptation, implementation, review, evaluation, or revision. Faculty members who merely used externally prescribed materials without participating in any of these processes were excluded. Participant characteristics are reported at the case level rather than as individualized combinations of teaching area and institutional responsibility because such combinations could permit deductive identification within the small institutional cases.

Table 1

Participant distribution and aggregated characteristics

Case	Participant codes	Number of participants	General participant profile	Materials-development involvement
Case A	P1-P2	2	English language educators; some participants also held standards, review, committee, or coordination responsibilities	Development, adaptation, implementation, review, evaluation, and/or revision
Case B	P3-P7	5	English language educators with comparatively distributed materials-development and peer-review roles	Development, adaptation, implementation, peer review, evaluation, and/or revision

Case	Participant codes	Number of participants	General participant profile	Materials-development involvement
Case C	P8–P9	2	English language educators involved primarily in teacher-led and classroom-responsive materials work	Development, adaptation, implementation, evaluation, and/or revision
Total	P1–P9	9	–	–

Note. Participant characteristics are aggregated by case to reduce deductive-identification risk. All participants were higher education English language educators with direct involvement in at least one stage of materials development. Some participants also performed curriculum, academic standards, materials review, committee, or program-coordination responsibilities.

Department heads or program coordinators circulated a neutral invitation to eligible faculty, after which interested individuals contacted the researcher directly. The researcher had no supervisory or evaluative authority over them. Participation was voluntary, no incentive was provided, and one invited faculty member declined because of scheduling constraints. The final sample comprised nine English language educators: P1–P2 from Case A, P3–P7 from Case B, and P8–P9 from Case C. Some participants also performed curriculum, academic standards, review, committee, or coordination functions. Case B contributed more participants because it had a larger eligible English faculty group and more distributed materials-development roles. Recruitment concluded after the ninth interview, and the case-level focus group discussions produced no substantially new categories beyond the recurring patterns of faculty roles, alignment, contextualization, validation, and revision.

Data Collection

Data were generated through a semi-structured interview guide, focus group prompts, a non-participant observation protocol, and a document-analysis matrix. The instruments addressed faculty roles, curricular alignment, learner needs, contextualization, institutional review, feedback, revision, and constraints. Development of the interview guide followed Kallio et al. (2016), reporting was informed by COREQ (Tong et al., 2007), and the document matrix reflected Bowen's (2009) principles.

Three specialists reviewed the instruments for clarity, relevance, alignment, sequencing, and ethical sensitivity. Pilot testing with two nonparticipating English language faculty members led to clearer prompts on adaptation, institutional review, and classroom-based revision.

The researcher conducted nine face-to-face interviews lasting approximately 25–60 minutes. With written consent, the interviews were audio-recorded and transcribed verbatim, retaining relevant code-switching, clarifications, and meaningful pauses. After preliminary coding, one focus group discussion was conducted in each case to examine agreement, divergence, and the fit of emerging interpretations.

Six non-participant classroom observations – two per case – were conducted during lessons using teacher-developed or adapted materials. Structured notes documented

alignment, contextualization, technology use, teacher mediation, learner interaction, and implementation issues. Students were neither recorded nor individually evaluated.

Twenty-four de-identified institutional and instructional documents were analyzed, including syllabi, modules, worksheets, slides, digital handouts, review forms, revision records, and assessment materials. Documents were logged by case and type and used to corroborate, qualify, or contrast interview, focus group, and observation evidence rather than to establish instructional effectiveness.

Table 2

Distribution of data sources across cases

Case	Individual interviews	Focus group discussions	Classroom observations	Documents analyzed
Case A	2	1 FGD with 2 participants	2	8: syllabus, modules, slides, review form, revision notes, and assessment materials
Case B	5	1 FGD with 5 participants	2	10: syllabi, worksheets, slides, validation forms, version notes, and assessment tasks
Case C	2	1 FGD with 2 participants	2	6: syllabus, digital handouts, slides, revision notes, and assessment-related materials
Total	9	3 FGDs	6	24

Ethical Considerations

Ethical clearance for the study was obtained from the University Research Ethics Committee of the researcher's home institution prior to data collection. The review covered participant recruitment, informed consent, audio-recording procedures, anonymization, data storage, and withdrawal rights. Institutional permission was obtained from the participating HEIs before participant recruitment and classroom observation. Written informed consent was obtained from faculty participants before each data-collection activity.

Before each classroom observation, the instructor informed students that the researcher would observe instructional materials use and general lesson interaction. Students were not treated as research participants, and no student names, grades, images, recordings, or identifiable personal data were collected. They could avoid direct interaction with the researcher, and no individual behavior or performance was evaluated.

Before each focus group discussion, participants were reminded that group confidentiality cannot be absolutely guaranteed. They were asked not to disclose the identities, comments, institutional examples, or classroom examples shared by other participants. Reporting used case labels and participant codes to reduce identification risk. Because the study involved a small number of participants in a specific local context, the manuscript acknowledges that complete anonymity cannot be guaranteed.

Digital recordings, transcripts, field notes, and document-analysis files were password-protected and accessible only to the researcher. No transcription assistant was used. De-identified working files will be retained for five years after publication or final

project closure, whichever comes later. After retention, electronic files will be deleted, and physical notes will be shredded.

Data Analysis

Data were analyzed manually using Braun and Clarke's (2006) six-phase thematic-analysis process: familiarization with the data, generation of initial codes, development of candidate themes, review of themes, definition and naming of themes, and production of the analytic account. The analysis was primarily inductive but remained attentive to the study's sensitizing constructs of teacher agency, institutional mediation, and materials development. Principles of qualitative trustworthiness also guided the analysis and reporting (Nowell et al., 2017; Tracy, 2010). During familiarization, the researcher repeatedly read the interview transcripts, focus group records, observation notes, and document-analysis memos while recording initial observations. During initial coding, relevant segments were coded manually in a matrix containing the case, participant code, data source, excerpt, initial code, analytic category, provisional theme, and analytic memo. This process generated 126 initial codes.

During theme development and review, overlapping codes were compared within and across cases and consolidated into 18 analytic categories. These categories concerned faculty roles, materials types, curricular and institutional influences, learner needs, contextualization, authentic and profession-oriented materials, technology-supported materials, review practices, implementation, feedback, revision, and constraints. Candidate themes were checked against the coded extracts, complete data set, research questions, and evidence from the different cases and data sources.

During theme definition, naming, and reporting, the categories were refined into five final themes: faculty agency in materials development; curricular and institutional mediation; contextualized and authentic materials use; collaborative validation and quality review; and feedback-informed evaluation and revision. Theme definitions and boundaries were documented in analytic memos before the findings were organized into the final cross-case account.

The researcher conducted the coding; therefore, inter-coder agreement was not calculated. Credibility and transparency were supported through triangulation, negative-case examination, reflexive journaling, an audit trail, participant review, and three peer-debriefing sessions with two external academics. Their feedback helped distinguish validation from revision and teacher agency from institutional mediation. Divergent evidence, including variation in review formality, was retained in the analysis.

All participants reviewed their transcripts or relevant excerpts; seven confirmed them in writing and two orally. Six participants affirmed the preliminary thematic summary, while three requested no changes within the review period. A reflexive journal documented assumptions and analytic decisions. Filipino and Taglish excerpts selected for reporting were translated by the researcher and checked by a bilingual English language faculty member. Original wording was retained in the records, although some nuance may have been lost in translation.

FINDINGS

The analysis generated five interrelated themes: (1) faculty agency in materials development; (2) curricular and institutional mediation; (3) contextualized, authentic, digital, and profession-oriented materials use; (4) collaborative validation and quality review; and (5) feedback-informed evaluation and revision. The themes are presented first through cross-case patterns supported by participant accounts, classroom observations, and document evidence. Differences among Cases A, B, and C are then synthesized in the cross-case comparison table.

Faculty Agency in Materials Development

Across the three cases, English language faculty exercised agency by creating, selecting, adapting, implementing, reviewing, evaluating, and revising instructional materials for the courses they taught. Their agency was professionally exercised but not independent of syllabi, institutional expectations, available resources, peer relationships, and classroom conditions. Participants described teachers not only as users of prepared instructional resources but also as creators, adapters, implementers, evaluators, editors, peer reviewers, and revisers of materials. Participants reported using printed modules, textbooks, teacher-made handouts, PowerPoint presentations, audio-visual materials, videos, online resources, interactive content, digital handouts, worksheets, and assessment-related tasks.

Faculty agency was evident in how participants adjusted materials to align with course outcomes, learner levels, and professional communication needs. P1 from Case A explained:

Excerpt 1 (P1)

"I do not simply use ready-made materials. I check the syllabus, prepare the examples, and adjust the activity depending on the students' level."

Excerpt 2 (P6)

"We are not just users; we are also developers. We are the ones who know our students best, so we design accordingly."

Excerpt 3 (P8)

"When the available material does not fit the class, I redesign the task and make the instructions more direct for my students."

Together, these excerpts show that faculty agency involved interpreting curricular requirements, assessing the suitability of available materials, and redesigning tasks in response to learners rather than merely producing new instructional content. Document review supported these accounts. Teacher-developed worksheets contained locally familiar examples, workplace scenarios, and scaffolded tasks moving from guided analysis to student production. PowerPoint decks and digital handouts contained visuals, prompts, authentic texts, QR links, teacher-made examples, and occasional revision marks. Observations showed teachers explaining, modifying, simplifying, or supplementing materials during implementation when students required clarification. These roles were not equally distributed across the cases. Case B showed the widest range of shared writing,

reviewing, and editing responsibilities, whereas Cases A and C involved fewer participants and more concentrated role arrangements.

Curricular and Institutional Mediation

Materials-development decisions across all three cases were mediated by course syllabi, intended learning outcomes, institutional goals, departmental expectations, and review practices. Participants also referred to national higher education quality-assurance expectations as part of the broader policy environment within which materials were planned and checked. These were treated as faculty-reported and document-supported bases for materials revision, not as independently analyzed student outcome data.

Curricular and institutional mediation operated differently across cases. In Case A, formal standards and peer or committee review were more visible. P2 explained, "We do not release modules for general use without peer review. At least one colleague checks for alignment and clarity before finalizing." In Case B, P5 explained how creativity was bound by outcomes: "The syllabus is the first guide. Even if we want to be creative, the activities still need to match the outcomes and assessment." In Case C, institutional mediation appeared less formal but remained present through syllabi, departmental expectations, and teacher-led evaluation after classroom use. Thus, the cross-case difference concerned the form and degree of institutional mediation rather than its complete presence or absence.

Documents supported the centrality of alignment. Course syllabi outlined outcomes in academic writing, oral communication, information literacy, and professional communication. Review forms checked alignment with outcomes, clarity of directions, relevance of examples, language accuracy, level appropriateness, and learner-friendliness. Assessment-related materials showed the need for consistency among tasks, rubrics, and intended communicative outcomes.

Contextualized, Authentic, Digital, and Profession-Oriented Materials Use

Across the cases, faculty members reported and demonstrated the use of contextualized, authentic, digital, multimodal, and profession-oriented resources. P3 from Case B stated, "I use updated examples, real articles, test formats, and workplace dialogues so that students can connect the lessons to their careers." P6 from Case B added, "We sometimes use social media posts, news clippings, or trending issues as discussion prompts or stylistic analysis materials." These categories describe the types and intended relevance of the materials; they do not establish that the materials were inherently effective or that they improved student learning outcomes.

Observations and documentation showed that contextualization did not operate as a single practice. It included local examples, workplace dialogues, current issues, discipline-related prompts, professional communication tasks, authentic texts, and digital supports. During a Case B classroom observation, learners requested clarification of a workplace dialogue task, after which the teacher supplied an oral model before the activity continued. In a Case C observation, the teacher changed the sequence of a slide-based explanation by presenting a concrete example before the abstract definition. These examples show that

contextualization required teacher mediation and post-use adjustment rather than simply inserting local or authentic content.

Collaborative Validation and Quality Review

Materials checking and quality review occurred in all three cases, although the procedures differed in formality, timing, and participation. Case A showed more formal alignment and review procedures, Case B showed distributed peer collaboration, and Case C relied more heavily on teacher-led classroom-based revision. In this theme, validation refers to practical pedagogical and institutional checking rather than psychometric or experimental validation. P7 from Case B explained, "When we review materials, we do not look only at grammar. We also check if the task is relevant, learner-friendly, and suitable for the course." This account indicates that review criteria extended beyond linguistic correctness to include curricular and learner-related considerations.

Feedback-Informed Evaluation and Revision

Evaluation and revision were informed by faculty-reported learner responses, peer comments, classroom experience, direct observation, and document review. P4 from Case B noted, "Some instructions look clear to us, but after class, we realize students need an example first. That is when we revise the worksheet." P9 from Case C explained, "After using the slides, I changed the order because the students understood better when the sample came before the definition." Divergent evidence was also present. P8 from Case C stated, "Not all materials pass through a committee. Sometimes the checking is my own reflection after using the material in class." This account qualified any assumption that materials underwent uniform committee review and supported the cross-case interpretation that institutional mediation was present but unevenly formalized.

Revision triggers included unclear instructions, observed or reported learner difficulty, outdated examples, formatting problems, misalignment with assessment requirements, and digital-access constraints. Reported or observed revisions included adding model answers, numbering task steps, simplifying local examples, updating authentic texts, reformatting modules, clarifying rubric criteria, and providing offline screenshots or printed alternatives.

Table 3

Cross-case comparison of English language materials-development practices

Dimension	Case A	Case B	Case C	Cross-case interpretation
Main materials used	Printed modules, worksheets, slides, assessment tasks	Modules, handouts, slides, workplace tasks, social media/news prompts	Digital handouts, slides, teacher-designed tasks, worksheets	All cases used teacher-developed or adapted materials; Case B showed the widest range of authentic and profession-oriented resources.
Materials-development actors	English faculty and standards	Faculty contributors, peer reviewers,	Faculty creators, designers, evaluators, editors	Faculty agency was present across cases, but role

	committee members	planners, editors, content creators		distribution was broader in Case B.
Review/validation process	More formal peer or committee checking before use	Peer review and colleague checking, varying by course or material	Mostly teacher-led and classroom-based checking, with departmental expectations	Institutional mediation existed in all cases but differed in formality.
Feedback source	Peer comments, standards review, classroom experience	Faculty-reported learner response, peer comments, implementation experience, review forms	Learner questions, teacher reflection, observation of task difficulty	Feedback came from both institutional and classroom sources.
Revision practice	Alignment and clarity revisions before wider use	Revision of examples, instructions, sequencing, and digital content	Post-use revision of instructions, examples, and formatting	Revision was iterative in all cases but most formalized in Case A and most classroom-responsive in Case C.
Institutional mediation	More formalized through alignment and committee or peer-review procedures	Distributed through peer collaboration and course-level review	Less formalized, operating mainly through syllabi, departmental expectations, and teacher-led checking	Institutional mediation occurred in all cases but differed in structure, formality, and documentation. Across the three cases, materials development was predominantly faculty-led while remaining shaped by institutional and curricular conditions.
Constraints	Time required for review; need to meet standards	Workload, uneven documentation, varied review practice	Limited formal review, reliance on teacher judgment	Constraints shaped the extent and consistency of validation.

Note. The descriptors summarize qualitative cross-case patterns and do not represent numerical ratings. Learner responses refer to faculty reports and classroom interactions observed incidentally during materials use; students were not recruited as study participants.

Taken together, the cases showed a recurring but nonuniform process. Faculty members exercised professional judgment in developing and adapting materials, while syllabi, program outcomes, institutional expectations, peer relationships, classroom conditions, and review procedures shaped their decisions. The strongest cross-case convergence concerned the iterative relationship among alignment, contextualization,

implementation, evaluation, and revision. The principal divergence concerned how formally and collectively materials were reviewed before or after classroom use.

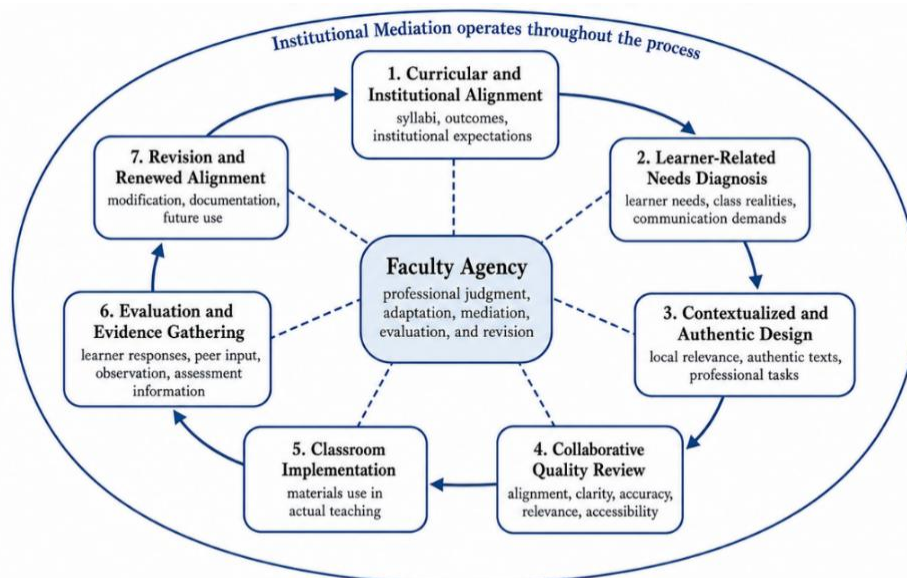
Emergent Institutional Adaptation Framework

The cross-case findings informed the development of the Institutionally Mediated Materials Adaptation Framework for Higher Education English Language Teaching. The framework is an exploratory qualitative synthesis of seven recurring stages documented across the three cases: curricular and institutional alignment, learner-related needs diagnosis, contextualized and authentic design, collaborative quality review, classroom implementation, evaluation and evidence gathering, and revision and renewed alignment. Faculty agency operates throughout these stages, while institutional mediation may occur through formal or informal curricular, collegial, administrative, and quality-review arrangements.

The framework is recursive rather than strictly linear. Curricular and institutional alignment provides an initial reference point; learner-related needs diagnosis informs the selection and difficulty of content and tasks; contextualized and authentic design connects materials with local, academic, and professional purposes; collaborative quality review examines alignment, clarity, accuracy, relevance, and accessibility; classroom implementation produces practical evidence about materials use; evaluation and evidence gathering draws on faculty-reported learner responses, peer input, observation, assessment-related information, document review, and reflective judgment; and revision and renewed alignment uses this evidence to modify materials and reconsider their correspondence with curricular and institutional expectations. Institutions or faculty teams may enter the process at different points depending on whether a material is newly developed, adapted from an existing resource, or revised after classroom use.

Figure 2

Institutionally mediated materials adaptation framework for higher education English language teaching



Note. The framework is exploratory and recursive; institutions may enter the process at different points depending on whether materials are newly developed, adapted, or revised after classroom use.

Table 4*Components, empirical basis, and possible operational uses of the institutionally mediated materials adaptation framework*

Framework component	Empirical basis in the present cases	Possible operational use	Potential users
Curricular and Institutional Alignment	Syllabi, intended learning outcomes, institutional goals, departmental expectations, and the broader national quality-assurance environment informed materials planning and review.	Examine the correspondence among course outcomes, instructional materials, learning activities, and assessment requirements before and after use.	Faculty members, course teams, program chairs, quality-assurance personnel
Learner-Related Needs Diagnosis	Faculty considered diagnostic information, learner difficulties, classroom realities, communication needs, access conditions, and reported learner preferences.	Review diagnostic tasks, learner work, class profiles, access conditions, and observed learning difficulties before selecting or revising materials.	Faculty members, course teams
Contextualized and Authentic Design	Materials included local examples, workplace communication, current issues, digital prompts, discipline-related texts, authentic resources, and profession-oriented tasks.	Connect language objectives with learners' local, academic, disciplinary, and anticipated professional contexts.	Faculty members, materials writers, instructional designers
Collaborative Quality Review	Cases showed peer consultation, review forms, committee checking, colleague feedback, and teacher-led checking of alignment, clarity, accuracy, relevance, and accessibility.	Apply a concise review protocol before or after implementation, with procedures proportionate to institutional capacity.	Faculty peers, course coordinators, program chairs, review committees
Classroom Implementation	Observations showed faculty using, explaining, simplifying, supplementing, and resequencing teacher-developed or adapted materials during instruction.	Document how materials function in actual teaching, including clarity, task difficulty, access, learner interaction, and teacher mediation.	Faculty members, course teams
Evaluation and Evidence Gathering	Evaluation drew on faculty-reported learner responses, peer comments, classroom observations, assessment-related information, document review, and reflective judgment.	Collect and compare evidence during and after use to identify strengths, difficulties, access problems, and areas requiring revision.	Faculty members, course teams, reviewers
Revision and Renewed Alignment	Faculty revised instructions, examples, sequence, formats, visuals, assessment links, digital content, and offline alternatives after implementation.	Maintain a brief revision record identifying the issue, evidence considered, modification made, and implications for future use, followed by a renewed alignment check.	Faculty members, course teams, program coordinators, materials committees

Note. The possible operational uses were inferred from the qualitative findings. They were not experimentally tested or validated as indicators of instructional effectiveness.

The framework's contribution lies in connecting teacher-led materials decisions with the institutional and curricular processes through which those decisions are guided, reviewed, implemented, and revised. It does not prescribe one uniform approval system for all higher education institutions. Rather, it identifies recurring functions that may be enacted through different formal or informal arrangements. Because the framework was derived from three local cases, further research is needed to examine its usability, transferability, and relevance in other institutional and disciplinary contexts.

The framework is most applicable to English-language courses in higher education, where faculty are expected to create, adapt, review, or revise instructional materials. It may be less applicable in settings where all materials are externally mandated, where faculty have no role in revision, or where institutional review procedures do not exist. The framework should not be interpreted as a validated model of instructional effectiveness. It requires further testing across additional institutions, disciplines, and student populations before stronger claims can be made.

DISCUSSION

The findings show that English language materials development was neither an exclusively individual activity nor a uniformly prescribed institutional process. It emerged through the interaction of faculty judgment, curricular requirements, institutional arrangements, learner-related considerations, classroom use, and post-use evaluation.

Faculty acted as creators, adapters, implementers, evaluators, and revisers, extending accounts of teachers as active materials developers (Li, Gao, et al., 2023; Ulla & Perales, 2021). Their decisions, however, were conditioned by syllabi, outcomes, review arrangements, resources, workload, and classroom evidence. This supports an ecological view of agency as achieved within professional and institutional conditions rather than exercised as unrestricted autonomy (Priestley et al., 2015; Wang, 2022).

Institutional mediation appeared in all cases but took different forms. Case A relied more on structured standards and review, Case B on distributed peer collaboration, and Case C on less formal teacher-led checking after classroom use. This variation is consistent with evidence that materials-design practices are shaped by policy, institutional expectations, collective norms, and individual beliefs (Li, Wu, et al., 2023). It also shows that mediation can occur through syllabi, review forms, committees, collegial consultation, departmental norms, and reflective revision; it need not involve a standardized approval system.

Faculty used contextualized, authentic, digital, and profession-oriented resources to connect language tasks with academic and anticipated workplace communication. This reflects relational views of authenticity and learning-centered ESP principles (Gilmore, 2007; Hutchinson & Waters, 1987; Hyland, 2022). Nevertheless, these features did not establish effectiveness. Adapted or locally produced materials may still require mediation and revision because of difficulty, accessibility, or task-design problems (Hanifa et al., 2024; Toledo-Sandoval, 2020).

Collaborative review subjected individual judgment to collegial or institutional scrutiny through criteria such as alignment, clarity, accuracy, relevance, accessibility, and learner-friendliness. The term validation must therefore remain bounded: it denotes pedagogical and institutional checking, not psychometric validation or evidence of instructional effectiveness. Review formality varied, but quality work remained collective or evidence-informed rather than solely authorial.

Revision was prompted by unclear instructions, task difficulty, outdated examples, formatting problems, assessment misalignment, and access constraints. This finding is consistent with accounts of feedback as useful when it can be interpreted and acted upon (Carless & Boud, 2018; Hattie & Timperley, 2007). Across cases, the commonality was not one standardized procedure but a recursive set of functions—alignment, needs consideration, design, review, implementation, evaluation, and revision—performed by different actors and documented to different degrees.

The proposed framework organizes these functions into seven recursive stages and positions faculty agency within formal or informal institutional mediation. It should be read as an exploratory procedural guide, not a causal, predictive, or validated model, because it has not yet been pilot-tested or evaluated for effects on teachers, institutions, or learners.

Practical Implications

The findings have implications for higher education departments, faculty members, and curriculum or quality-assurance personnel. These implications concern the organization of materials-development processes rather than evidence of improved learner outcomes.

- (1) English departments may create a shared materials-development workflow that includes planning, drafting, peer review, classroom use, feedback collection, and revision.
- (2) Quality-assurance committees may use review criteria that examine alignment, clarity, relevance, accessibility, authenticity, and learner-friendliness rather than format compliance alone.
- (3) Faculty-development programs may include training on contextualized materials, digital resources, feedback use, materials evaluation, and revision documentation.
- (4) Curriculum planners may connect syllabus review, assessment design, and materials revision so that materials remain aligned with course outcomes and learner needs.

The findings should be interpreted in light of several limitations. The study involved nine faculty participants from three higher education institutions in one Philippine city, with unequal representation across cases; consequently, the findings support analytical transferability rather than statistical generalization. The inquiry focused primarily on faculty perspectives, although classroom observations and document analysis were used for triangulation; students, administrators, and external materials reviewers were not included as direct participants. The study examined materials-development processes rather than learner outcomes, usability, or instructional effectiveness, and the amount of documentary evidence varied across cases. Some Filipino and Taglish excerpts were translated into English, which may have reduced linguistic nuance despite bilingual checking. Finally, the

proposed framework remains exploratory and requires further examination in other institutional and disciplinary contexts.

Future research should examine the framework across a broader range of public and private higher education institutions, regions, disciplines, and English language course types. Building on previous studies of Philippine flexible-learning materials development and institutionally situated teacher materials work (Tarrayo & Anudin, 2023; Ulla & Perales, 2021), subsequent inquiries may include students, administrators, curriculum leaders, and quality-assurance personnel to provide perspectives not represented in this faculty-centered study. The framework may also be examined through pilot implementation, structured expert review, and comparative case studies. Further research could analyze actual instructional materials systematically and investigate whether framework-guided development and revision are associated with accessibility, assessment alignment, learner engagement, usability, or clearly specified language-learning outcomes.

CONCLUSION

This qualitative multiple-case study showed that English language materials development in the three participating higher education institutions was predominantly faculty-led but institutionally mediated. Faculty members exercised agency by creating, adapting, implementing, reviewing, evaluating, and revising materials, while syllabi, learning outcomes, institutional expectations, learner-related considerations, peer or committee review, classroom experience, and feedback shaped their decisions. The cross-case findings informed the Institutionally Mediated Materials Adaptation Framework, which connects curricular and institutional alignment, learner-related needs diagnosis, contextualized and authentic design, collaborative quality review, classroom implementation, evaluation and evidence gathering, and revision and renewed alignment. The framework offers a process-oriented account of materials development in Philippine higher education but remains an exploratory qualitative synthesis rather than a tested model of instructional effectiveness.

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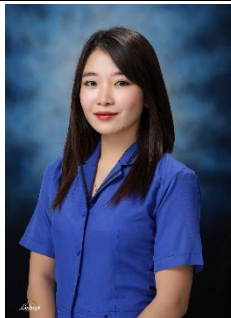
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The Effectiveness of Technology-Integrated Task-Based Language Teaching (TBLT) in Enhancing EFL Students' Speaking Skills

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ABSTRACT

This study examined the effectiveness of technology-integrated Task-Based Language Teaching (TBLT) in enhancing the speaking skills of English as a Foreign Language (EFL) students in Indonesia. English teachers continue to face challenges in improving students' speaking abilities, making the integration of technology into student-centered instructional approaches such as TBLT a promising alternative. TBLT engages learners in meaningful communicative tasks while encouraging them to use language primarily for communication. Employing a quantitative approach with a single-group pre-experimental design, this study involved 30 students. The research instruments included speaking pre-tests, post-tests, assessment rubrics, and task-based activities. The results of the paired-samples t-test showed a significant improvement in students' speaking skills, with mean scores increasing from 71.94 in the pre-test to 78.38 in the post-test ($t = -7.051$, $p < .001$). Furthermore, a one-way ANOVA revealed significant differences in speaking performance among students at the advanced, intermediate, and beginner proficiency levels in both the pre-test ($F = 135.216$, $p < .001$) and the post-test ($F = 76.743$, $p < .001$). These findings indicate that technology-integrated TBLT effectively enhances EFL students' speaking skills across different proficiency levels.

Keywords: EFL Students, Speaking Skill, Students' Speaking Levels, TBLT with Technology

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INTRODUCTION

Being an EFL teacher requires several competencies. Richards (2017) identifies three competencies that at least an English teacher must have: subject-matter knowledge, teaching skills, and teaching delivery. Meanwhile, Christophersen et al. (2015) and Tigert et al. (2021) state that English teachers need to consider also in providing interactive classroom management (Aziza et al., 2024) and the implementation of the English curriculum, which in turn leads to the selection of suitable teaching approaches or methods (Haukås, 2016). These competencies become more complex when students have different levels of ability, requiring English teachers to provide differentiated instruction (Heng et al., 2023; Langelan et al., 2024). Thus, English teachers must be highly competent to combine between the English subject-matter knowledge and managing their teaching practices to foster a supportive classroom climate, thereby improving students' engagement and learning outcomes (Anderson, 2004; Darling-Hammond, 2006).

In the context of Indonesia, it is clear that all English teachers have fulfilled the requirements for teaching their students; however, students still have difficulty mastering English skills, especially speaking. Speaking is a productive language skill that forces students to produce language in spoken form and to address meaningful communication (Luoma, 2003). Without having proper speaking skill, students will suffer to have comprehension with native or other English speakers. In reality, many Indonesian students cannot speak English well due to insufficient practice (Siska et al., 2026), limited vocabulary (Nazri, 2025), fear of making mistakes (Puspasari et al., 2025), and lack of oral interaction (Suryanto et al., 2025). These limitations may hinder the development of their fluency, confidence, and participation in oral communication for the future (Farhan et al., 2025). Therefore, despite all of these difficulties, speaking deserves particular attention because it enables students to express ideas, thoughts, and feelings orally (Bygate, 1987).

"Applying TBLT with technology creates an opportunity to boost EFL students' speaking skill."

Given the significance of speaking skills and the limited opportunities for EFL students to use English, teachers need to provide frequent meaningful opportunities for oral communication (Goh & Burns, 2012). Many experts propose different approaches to overcome those issues, one of which is TBLT, since it offers communicative tasks for students to use the target language and achieve specific outcomes (Ellis, 2003). Teng et al. (2025) emphasize that TBLT can enhance students' engagement and positively influence language-learning outcomes. Moreover, Ulya (2024) and Sui (2026) support, in their studies, that TBLT can reduce students' anxiety when speaking. Hence, TBLT can be a potential approach for teaching students' speaking skill.

Recently, TBLT implementation in speaking has focused more on integrating the task with digital technology (Mulyadi et al., 2021). Through this combination, Aprilia et al. (2026) have revealed benefits for students in their speaking performance, leading to meaningful oral communication. Moreover, Lestari et al. (2025) further examined the advantages of

TBLT with technology for students' speaking performance, specifically, enhancing their fluency and confidence. It shows that using TBLT with technology integration strengthens students' speaking skill. Richards (2015) has long argued that the benefits of using technology in language teaching contexts are significant and useful, including combining it with specific tasks.

Although plenty of previous studies have shown the benefits of using TBLT with technology for speaking (Nurfadhilah et al., 2023; Su et al., 2025; Widiastuti et al., 2026), limited research has examined the integration of TBLT and technology for developing Indonesian EFL students' speaking skills across different levels. It is commonly known that in Indonesia, especially among secondary school students, levels of speaking competence vary from advanced to beginner. Consequently, the implementation of TBLT must consider selecting task types and mediated technologies that match their speaking skill levels. Eventually, TBLT integrated with technology may potentially influence differently across the diverse range of students' speaking levels. Thus, there is a notable gap in research on the implementation of TBLT technology through differentiated tasks, particularly regarding student grouping by speaking skill level (advanced, intermediate, beginner).

Regarding this opportunity, the researchers are interested in examining the use of TBLT integrated the web-based technology, consisting of Google Classroom, Google Search, Loom website, toPhonetics website, and Google Forms, which were used to support instruction, provide learning materials, facilitate practice, and conduct learning's feedback. In addition, the researchers propose one research question: to what extent does TBLT, integrated with technology, improve EFL students' speaking skills across different speaking skill levels (advanced, intermediate, beginner)? Thus, this research aims to determine whether TBLT with technology can significantly enhance Indonesian EFL students' speaking skills across three levels. So, it may contribute to the notion of TBLT integrated with technological knowledge, in line with the heterogeneity of speaking skills among Indonesian EFL learners.

LITERATURE REVIEW

Task-Based Language Teaching

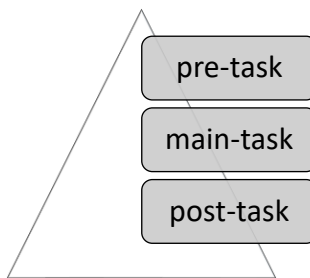
According to Nunan (2004), TBLT is an approach that engages students in language learning by providing tasks and is intended to achieve specific learning objectives. Based on Ellis (2024), a task is defined as a set of guidelines for checking whether an activity involves receptive and productive language use. Historically, TBLT gained prominence in the early 1980s through the Bangalore Project led by N. S. Prabhu (Pankeaw & Satayaban, 2025). Afterwards, the development of this approach rose, for instance, Willis (1996), who added a structured pedagogic sequence consisting of three essential phases, which are pre-task, task cycle, and language focus. Since then, TBLT has become one of the approaches that can be used in the foreign language teaching area by putting tasks as a central vehicle (Richards & Rodgers, 2014). Branden (2006) supported this by stating that a task in TBLT constitutes an

essential element within a language-learning approach, where students work meaningfully and inherently adopt a student-centered orientation.

Furthermore, Ellis (2003) contributed to TBLT task sequencing frameworks, which are organized into three stages: pre-task, main-task, and post-task. In the pre-task stage, teachers need to introduce the task and offer support for students' process, and students are given the task, then make preparations together with their teammates, including planning time, vocabulary, and linguistic needs for the main task performance. Next, in the main-task stage, students are performing the task. Last, in the post-task stage, both teachers and students review the task to consolidate learning that emerged during the main task, focusing on their speaking performance, teammates' contributions, and outcomes. See the frameworks below.

Figure 1

TBLT Framework Adapted based on Ellis (2003)



Technology Integrated in TBLT Approach

With the advancement of time, the use of TBLT gets new updates that integrate the approach with technology (Bipasha, 2024; Li et al., 2025). Technology plays a crucial role as a medium that is used to support the implementation of TBLT for teaching foreign languages, including English. Technology is a complex phenomenon for humans, used to enhance the efficiency of scientific development (Rapp, 1981). It comes from Greek “techne,” which refers to art or skill created by humans, and “logos,” which means study (Voulvoulis & Burgman, 2019). The development of technology integration into TBLT began more visibly in the early 2000s (Thomas & Reinders, 2010), particularly through the use of Computer-Assisted Language Learning (CALL) and Computer-Mediated Communication (CMC). Later, this integration became more formally recognized as technology-mediated TBLT, mentioned by Chapelle (2003). In addition, the studies about TBLT integrated with technology have become massive until right now.

Some studies, for example, Handayani et al. (2026), found that digital tools integrated with TBLT can effectively impact students' engagement, creativity, and understanding. Next, Sari and Abrar (2024) emphasize that the use of technology with TBLT can enhance students' experience and motivation along the learning process. Rosyidah and Faladiba (2025) also highlight the enhancement of students' confidence after the interactive English learning by using the TBLT with technology. Thus, TBLT integrated with technology becomes a powerful option for facilitating students' performance in language learning.

TBLT Integrated with Technology for Improving Speaking Skill

Lately, the applications of TBLT with technology have been an alternative to foster students' speaking competence, especially in the Indonesian context (Bhandari et al., 2025). A study by Aprilia et al. (2026) revealed that the benefits of task progression, combined with suitable digital mediation, positively enhance students' performance. In addition, Widiastuti et al. (2026) indicated that using of tasks positively impacts students' skill and understanding in oral communication, while the integration of TBLT uses with technology offers a flexible learning environment in the speaking classroom. In addition, a study from Nurfadhilah et al. (2023) showed the students' perception of the speaking classroom in gaining their confidence along the learning process.

Furthermore, the use of TBLT integrated with technology in Indonesian-speaking classes, creates opportunities to use a range of new tools, particularly for examining its effects on students' speaking skill. A study by Fauzyah (2023) explored the use of the Generation Global website as a platform to facilitate speaking tasks for students. Next, Lestari et al. (2025) also applied speaking tasks mediated by the mingle games tool to provide students with speaking practice. It shows that technology is integrated into TBLT to develop students' speaking skills, with potential for further advancement in computer hardware, software, websites, applications, and internet connectivity. Therefore, it can contribute more to knowledge and practice in teaching speaking with TBLT-integrated technology, specifically for Indonesian EFL learners.

METHOD

Research Design and Context

This research employed a quantitative approach with a pre-experiment design. The pre-experiment design is a type of quantitative research design in which the researcher investigates the effect of a treatment (independent variable) on a group, but without strong experimental control (Creswell & Poth, 2018). This design was suitable to examine students' enhancements in speaking skill level (advanced, intermediate, beginner), by involving a small number of participants after the implementation of technology-integrated TBLT. Meanwhile, this research was conducted at a public senior high school in Jakarta from March 1st to May 6th 2026. The selection of this location and time was based on the researchers' pre-observation and considering the suitable time for students to practice speaking under TBLT with integrated technology activities.

Participants

This section describes the characteristics of the study participants and explains the selection criteria used to determine the research sample. It covers the research participants, sampling technique, class selection, selection criteria, participant characteristics, and ethical considerations applied during the study's implementation.

Table 1
Participant Characteristics and Selection Criteria

Aspect	Description
Research participants	Thirty Grade XI students from one public senior high school in Indonesia
Sampling technique	Purposive sampling
Class selection	One intact class was selected based on the researchers' preliminary classroom observations and the English teacher's recommendations.
Selection criteria	(1) Availability of adequate classroom infrastructure to support technology-integrated learning (e.g., WiFi, LCD projector, and speakers); (2) Students' access to digital learning devices (e.g., smartphones, tablets, and laptops); (3) Heterogeneous speaking proficiency levels (advanced, intermediate, and beginner) within the selected class.
Participant characteristics	The participants represented mixed speaking proficiency levels, comprising advanced, intermediate, and beginner learners.
Ethical considerations	All participants were involved voluntarily and were treated in accordance with established research ethics principles and considerations throughout the study.
Participants' informed consent	The researchers explained the aim, procedures, potential risks, and benefits to students before starting the experiment. Then, all participants voluntarily agreed to participate in the study. However, the participation had the right to withdraw at any stage without consequences.

Data Collection

To obtain actual data on thirty students' speaking skills before and after the treatments, the researchers administered speaking pre-test and post-tests to them, with approximately 5-10 minutes allocated per session, using speaking rubrics as well. However, before conducting this data collection, the researchers did validity and reliability tests on the instruments (speaking pre-test and post-test) involving ten students from a different sample (not the main sample). First, the researchers conducted a validity item test using Aiken's V formula, following the Kania et al. (2024) format, to assess the appropriateness of the questions and task instructions. A five-point Likert scale, with rating categories from 1 = very bad to 5 = very good, and four raters (lecturers and English teachers) were involved in this validity assessment. Based on the calculation, all items were valid with an average of 0.865.

Table 2
Validity of Speaking Test Items Based on Aiken's V

The Topic of Task	Question Number	Rater				$\sum s$	n(c-1)	V	Category
		R1	R2	R3	R4				
Beverage Procedure	1	5	5	4	5	15	16	0.938	Valid
	2	5	4	4	4	13	16	0.813	Valid
Food Procedure	3	5	5	5	4	15	16	0.938	Valid
	4	4	5	4	4	13	16	0.813	Valid

Continued...

E-Money	5	4	4	4	4	12	16	0.813	Valid
Procedure	6	5	4	5	4	14	16	0.875	Valid
Sum								0.865	Valid

Second, the reliability of the speaking pre-test and post-test instrument was examined using the Intraclass Correlation Coefficient (ICC) adapted from Koo and Li (2016), with 2 raters (the researcher and the English teacher). The results showed that the instruments were indicated as excellent and reliable for both pre-test (Single measure: 0.899, Average measure 0.947) and post-test (Single measure: 0.764, Average measure 0.866).

Table 3
Test of Reliability ICC (Pre-Test and Post-Test)

Instruments	N of Rater	Test	Intraclass Correlation	Sig
Pre-Test	1	Single Measure	0.899	0.000
	2	Average Measure	0.947	0.000
Post-Test	1	Single Measure	0.764	0.000
	2	Average Measure	0.866	0.000

Meanwhile, to gather data on thirty students' speaking skill development, the researchers distributed the speaking task instruments adapted by Fujita and Shintani (2025) during the technology-integrated TBLT treatments over four weeks. The process of collecting this data followed the TBLT stages proposed by Ellis (2003). In the pre-task stage, students prepared by listing words, identifying the topic, and planning their time using specific web-based technologies, including Google Classroom, the toPhonetics web, and Google Search. Next, Loom facilitated students in performing the task orally by role-playing with teammates in the main task, which was also examined using a speaking scoring rubric adopted by Hughes (2003). Lastly, in the post-task stage, students provided feedback on the speaking treatment of that day and engaged in peer reflection on their teammate's contribution and performance (See Appendix A).

Data Analysis

This study focused on two variables: TBLT integrated with technology (X) and EFL students' speaking skills (Y). The hypothesis proposed in this study was whether there was a significant effect on the speaking skills of EFL students who were treated using TBLT with technology in class across different levels (advanced, intermediate, beginner). After the data were collected, the researchers analyzed the data using SPSS software version 25 (IBM, 2017) to address the study's research question. The analysis included the paired t-test and one-way ANOVA to compare the pre-test and post-test scores within each group, and to determine whether the treatment effect differed significantly across the three speaking skill levels (See Gravetter & Wallnau, 2008; Pallant, 2010). However, before the paired sample t-test and one-way ANOVA were analyzed, the researchers conducted assumption testing that consisted of a Normality test and Homogeneity of variances.

Table 4
Variable and Hypothesis

Symbol	Interpretation
Independent (X)	TBLT integrated with technology.
Dependent (Y)	EFL Students' Speaking Skill.
$H_0: \mu_{pre} = \mu_{post}$	There is no significant effect on the EFL students' speaking skill who treated using TBLT with technology in the class across different levels (advanced, intermediate, beginner).
$H_1: \mu_{pre} > \mu_{post}$	There is significant effect on the EFL students' speaking skill who treated using TBLT with technology in the class across different levels (advanced, intermediate, beginner).

The normality tests were assessed using the Shapiro-Wilk test by considering the sample size, which is relatively small, and the use of the Shapiro-Wilk test can provide a more reliable estimate of distribution fit under such conditions (Shapiro & Wilk, 1965; Marhawati et al., 2022). Furthermore, the Homogeneity of variance was then tested using Levene's test to determine that score variability across groups remained comparable prior to group-based comparison (Brown & Forsythe, 1974) and was also needed in comparison analyses, as it indicates whether the variability of scores across groups is relatively similar (O'Neill & Mathews, 2006).

FINDINGS

This findings section presents the quantitative results to answer the research question regarding the effect of TBLT integrated with technology on students' speaking performance across different levels (advanced, intermediate, beginner).

TBLT Integrated with Technology Experiment

Descriptive Statistics

In this section, the researchers presented the results of 30 students' speaking skill scores (main sample) before and after the treatment given for 4 weeks. These scores were rated by 2 raters (researcher and English teacher) using Hughes' (2003) speaking rubric.

Table 5
Students' Pre-Test and Post-Test Scores

No	Students	Scores	
		Pre-Test	Post-Test
1	S1	70.00	80.00
2	S2	53.33	58.33
3	S3	75.00	91.67
4	S4	80.00	83.33
5	S5	83.33	85.00
6	S6	50.00	58.33
7	S7	86.67	95.00
8	S8	71.67	78.33
9	S9	50.00	71.67

Continued...

10	S10	88.33	93.33
11	S11	65.00	68.33
12	S12	58.33	60.00
13	S13	66.67	76.67
14	S14	71.67	73.33
15	S15	86.67	95.00
16	S16	51.67	53.33
17	S17	80.00	81.67
18	S18	70.00	83.33
19	S19	71.67	81.67
20	S20	73.33	76.67
21	S21	66.67	66.67
22	S22	60.00	71.67
23	S23	76.67	83.33
24	S24	75.00	85.00
25	S25	86.67	90.00
26	S26	70.00	76.67
27	S27	81.67	88.33
28	S28	86.67	90.00
29	S29	71.67	73.33
30	S30	80.00	81.67

From the descriptive statistics calculation, the pre-test speaking scores had a mean of 71.95, a minimum of 50.00, a maximum of 88.33, and a standard deviation of 11.39. Meanwhile, the post-test speaking score has a mean of 78.38, a minimum of 53.33, a maximum of 95.00, and a standard deviation of 11.26. This showed there was improvement occurred pre-test average scores compared to post-test average scores.

Table 6

Descriptive statistic of Pre-Test and Post-Test Scores

	N	Min	Max	Sum	Mean	Std. Deviation	Variance
Pretest	30	50.00	88.33	2158.36	71.9453	11.38945	129.720
Posttest	30	53.33	95.00	2351.66	78.3887	11.25743	126.730
Valid N	30						

Assumption Testing

Before conducting the paired-sample t-test and one-way ANOVA, the researchers performed assumption testing using the above speaking pre-test and post-test data. Firstly, the normality test was conducted using Shapiro-Wilk with a sample size of $n = 30$. The hypothesis for this test was H_0 : The data are normally distributed, and H_1 : The data are not normally distributed. Based on the Shapiro-Wilk normality test, the pre-test result showed a test statistic (W) of 0.936 with a p-value of 0.071. Meanwhile, in the post-test, the test statistic (W) was 0.953 with a p-value of 0.204.

Table 7*Tests of Normality*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test	.132	30	.191	.936	30	.071
Post-Test	.115	30	.200*	.953	30	.204

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Equally important, researchers pointed out the need to test homogeneity of variance to ensure that the variances are equal across groups before performing the independent-samples t-test or one-way ANOVA. If the p-value > 0.05, the variances can be considered homogeneous, and if the p-value < 0.05, they are not homogeneous. The SPSS output showed a significant p-value of 0.551, while the post-test scores showed a p-value of 0.555. Both values were greater than 0.05, indicating that the data were homogeneous.

Table 8*Test of Homogeneity of Variances (Lavene)*

		Levene Statistic	df1	df2	Sig.
Pre-Test Score	Based on Mean	.610	2	27	.551
	Based on Median	.363	2	27	.699
	Based on Median and with adjusted df	.363	2	23.294	.700
	Based on trimmed mean	.554	2	27	.581
Post-Test Score	Based on Mean	.603	2	27	.555
	Based on Median	.194	2	27	.825
	Based on Median and with adjusted df	.194	2	21.009	.825
	Based on trimmed mean	.595	2	27	.559

Paired Sample t-Test

The purpose of using a paired-sample t-test is to examine whether there is a difference in scores between the pre-test and the post-test. From the SPSS calculations, the results showed that the mean difference between the pre-test and post-test was -6.44333, with t-observed of -7.051 and a significance level of $p < 0.001$. Since the p-value was less than 0.05, the difference between the pre-test and post-test scores was statistically significant. Therefore, it can be concluded that there was a significant improvement in students' scores from the pre-test to the post-test.

Table 9
Paired Sample t-Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Speaking Pre-Test - Post-Test	-6.44333	5.00522	.91382	-8.31231	-4.57435	- 7.0 51	29	.000

One-Way ANOVA

Lastly, a one-way ANOVA was conducted to examine students' speaking scores across different levels (advanced, intermediate, beginner). The results of the one-way ANOVA for the speaking pre-test showed a statistically significant difference among the three proficiency levels (advanced, intermediate, and beginner), $F(2,27) = 135.216$, $p < 0.001$. The descriptive statistics indicated that the advanced group obtained the highest mean score, followed by the intermediate and beginner groups. This suggests that students had different initial speaking abilities before the treatment. The descriptive statistics and ANOVA test of the pre-test scores are presented in Table 10.

Table 10
One-Way ANOVA Speaking Pre-Test

Speaking Pre-Test	Descriptives		
	N	Mean	Std. Deviation
Advanced	10	84.0010	3.35232
Intermediate	14	71.0729	3.37179
Beginner	6	53.8883	4.30237
Total	30	71.9453	11.38945

Speaking Pre-Test	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3420.379	2	1710.190	135.216	.000
Within Groups	341.491	27	12.648		
Total	3761.871	29			

A one-way ANOVA was also conducted to examine differences in students' speaking post-test scores across proficiency levels after the implementation of the intervention. Similarly to pre-test, the post test results also revealed a significant difference among the groups, $F(2,27) = 76.743$, $p < 0.001$. Although all groups showed higher mean scores in the post-test, differences among proficiency levels remained significant. However, the decrease in the F-value from pre-test to post-test indicates that the gap between groups tended to reduce after the treatment. The descriptive statistics and ANOVA test of the post-test scores are presented in Table 11.

Table 11
One-Way ANOVA Speaking Post-Test

Speaking Pre-Test	Descriptives		
	N	Mean	Std. Deviation
Advanced	16	86.7706	5.10841
Intermediate	10	73.3340	3.84900
Beginner	4	57.4975	2.88771
Total	30	78.3887	11.25743

Speaking Pre-Test	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3125.376	2	1562.688	76.743	.000
Within Groups	549.788	27	20.363		
Total	3675.164	29			

DISCUSSION

The findings of this research show that TBLT, when integrated with technology, positively affects 30 EFL students' speaking skills. The results indicate an increase in mean scores from the pre-test (71.95) to the post-test (78.38). Moreover, the paired-sample t-test confirms a significant difference ($t = -7.051$, $p < 0.001$) by using $d = \text{Pre-Test} - \text{Post-Test}$. Moreover, the two-tailed Sig. (0.000) is less than 0.05, where the null hypothesis is rejected. Thus, it indicates a statistically significant improvement in students' speaking skills after the treatment, as measured by the research variable.

The improvement is further explained by the nature of TBLT, which emphasizes meaning-focused communication through task completion, enabling students to use language in authentic contexts. In addition, technology integration further enhances the learning process by providing an easy way to speak. With TBLT integrated with technology, students can reflect, evaluate, and reinforce their performance. These results align with Ellis's (2003) research, which emphasizes TBLT as a framework for meaningful communication and characterizes it as a meaning-focused orientation. Further, TBLT, when integrated with technology, was in line with the previous study by Bhandari et al. (2025), which highlighted that the use of TBLT integrated with technology fostered students' engagement and student-centered learning environments. Therefore, the study is expected to contribute to the gap in the heterogeneity of speaking skills among Indonesian EFL learners (Nurfadhilah et al., 2023; Aprilia et al., 2026) regarding the effectiveness of technology-enhanced TBLT in developing students' speaking skills.

The ANOVA results also indicate a significant difference in students' speaking scores among the groups (advanced, intermediate, beginner), $F(2,27)=135.216$, $p<0,001$. Furthermore, the post-test results showed a significant difference among the groups, $F(2,27)= 76.743$, $p < 0.001$. While all groups improved, higher-level learners tended to achieve better outcomes, suggesting that initial competence still influences learning gains despite

instructional treatment. Therefore, it indicates that the students' speaking skills differed significantly before the treatment and shows the enhancement in some students. Students at advanced skill are 10, at intermediate skill are 14, and at beginner skill are 6. It increases at the post-test, to 16 students at advanced skill, 10 at intermediate skill, and 4 still at beginner skill.

However, besides the students' improvement in this study, there remains a variation across groups (advanced, intermediate, beginner). Several pedagogical factors can explain this condition. Firstly, students' speaking performance at the beginner level may be influenced by a lack of their linguistic resources, such as grammar, vocabulary, and pronunciation, which may slow down oral production (Islam & Stapa, 2021; Nazri, 2025). Secondly, students' speaking enhancement at the intermediate level showed a gradual increase because they already had sufficient basic linguistic resources to participate in communicative tasks but still needed more exposure, feedback, and task repetition to strengthen their fluency and accuracy (Bozorgian & Kanani, 2017). Lastly, students in the advanced group showed consistent development, as they had stronger linguistic resources and were better able to refine their speaking performance (Sanaei et al., 2015). Thus, many factors can determine the extent of students' speaking competence, depending on their speaking skill level (advanced, intermediate, beginner).

CONCLUSION

The findings indicate that technology-integrated TBLT significantly improves EFL students' speaking skills. Students demonstrated higher speaking achievement after the intervention, suggesting that technology-supported task-based activities enhance oral production by facilitating the use of grammar, pronunciation, and vocabulary while reducing speaking anxiety. These activities also promote greater student engagement, interaction, and meaningful communication in the classroom. Based on the statistical analysis, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, confirming that technology-integrated TBLT has a significant positive effect on students' speaking performance across advanced, intermediate, and beginner proficiency levels. Although all groups showed improvement, students at the advanced and intermediate levels achieved greater gains than beginners, indicating that learners with different proficiency levels respond differently to the intervention. This study contributes to the literature by examining technology-supported BLT as a differentiated instructional approach for varying proficiency levels. Future research should investigate strategies to better support beginner learners and incorporate a control group to provide stronger evidence of the effectiveness of technology-integrated TBLT.

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Appendix A

Students' Activity Across the Speaking Treatment.

Week	Topics	Students' Levels	Differentiated Instructions	Stages & Activity	Media
1	Procedure Text: Making Snacks	Advanced	Cookies	1. Pre-task: Word listing Worksheet	Google Search, toPhonetics Web
		Intermediate	Chips	2. Main-task: Speaking Roleplay	Loom and Google Classroom
		Beginner	Wafer	3. Post-task: Peer Reflections & Feedback	Google Form
2	Procedure Text: Making Beverage	Advanced	Beras Kencur	1. Pre-task: Word listing Worksheet	Google Search, toPhonetics Web
		Intermediate	Coffee Latte	2. Main-task: Speaking Roleplay	Loom and Google Classroom
		Beginner	Thai Tea	3. Post-task: Peer Reflections & Feedback	Google Form
3	Procedure Text: Shopping Method	Advanced	Buying Service	1. Pre-task: Word listing Worksheet	Google Search, toPhonetics Web
		Intermediate	E-Commerce	2. Main-task: Speaking Roleplay	Loom and Google Classroom
		Beginner	Direct Shopping	3. Post-task: Peer Reflections & Feedback	Google Form
4	Procedure Text: Tutorial	Advanced	Software Installation in PC	1. Pre-task: Word listing Worksheet	Google Search, toPhonetics Web
		Intermediate	Pay bills through e-wallet	2. Main-task: Speaking Roleplay	Loom and Google Classroom
		Beginner	Social Media Registration	3. Post-task: Peer Reflections & Feedback	Google Form



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Research Article

Positive Politeness Strategies in Health-Related Podcast Discourse: A Pragmatic Analysis of Billie Eilish's Discussion on Tourette Syndrome

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ABSTRACT

While previous studies have explored politeness strategies in digital communication and podcast interactions, relatively little attention has been paid to how positive politeness functions in health-related podcast discourse, particularly when discussing sensitive personal experiences. Addressing this gap, this study investigates the realization and communicative functions of positive politeness strategies in Billie Eilish's podcast interview discussing Tourette syndrome. Guided by Brown and Levinson's (1987) politeness theory, the study adopts a qualitative descriptive approach. The data were collected from a publicly available podcast interview and analyzed through the identification and contextual interpretation of utterances reflecting positive politeness strategies. The analysis identified six dominant strategies: noticing and attending to the hearer, seeking agreement, using in-group identity markers, giving reasons, expressing optimism, and minimizing potential discomfort. These strategies were employed to foster empathy, establish interpersonal solidarity, encourage openness, reduce potential face threats, and maintain conversational comfort when addressing sensitive health-related experiences. The findings demonstrate that positive politeness serves as an important interpersonal resource in facilitating supportive and empathetic communication within digital health discourse. By illustrating how politeness strategies contribute to meaningful interaction in podcast-based health communication, this study extends pragmatic research on digital discourse and offers empirical insights into the role of positive politeness in constructing rapport and promoting audience engagement in discussions of personal health experiences.

Keywords: *positive politeness, pragmatics, podcast discourse, health communication, Billie Eilish*

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INTRODUCTION

Digital communication has changed the way people communicate and share information. Today, many public figures use digital platforms to discuss various topics, including personal experiences, social issues, and health conditions. One popular form of digital communication is interview discourse, which allows speakers to communicate in a more natural and conversational way. Unlike formal speeches or scripted television programs, interviews encourage spontaneous interaction between the interviewer and the interviewee. This interaction enables speakers to express their thoughts, emotions, and experiences openly while building a closer relationship with both the interviewer and the audience. Therefore, interview discourse provides a meaningful context for examining how language is used to maintain interpersonal relationships during communication.

In interview discourse, successful communication is influenced not only by the information being shared but also by the way speakers interact with one another. When discussing personal or sensitive topics, speakers need to choose appropriate language to avoid misunderstanding, reduce discomfort, and create a supportive atmosphere. This is closely related to the concept of politeness in pragmatics. Brown and Levinson (1987) explain that politeness refers to the linguistic strategies speakers use to maintain harmonious relationships and minimize threats to the hearer's face. Similarly, (Haugh, 2020) argues that politeness plays an important role in creating mutual understanding and maintaining positive social interaction. Consequently, politeness becomes an essential aspect of communication, particularly in discussions involving personal experiences and health-related issues.

"Positive politeness strategies foster empathy, solidarity, and supportive communication in health-related podcast discourse"

The concept of politeness is closely connected to (Goffman, 1967) notion of *face*, which refers to an individual's public self-image that people expect others to respect during interaction. Based on this concept, Brown and Levinson (1987) proposed four politeness strategies: bald-on-record, positive politeness, negative politeness, and off-record. Among these strategies, positive politeness is particularly relevant because it aims to reduce social distance, express solidarity, and strengthen interpersonal relationships between speakers. Positive politeness can be realized through various strategies, such as noticing the hearer's needs, seeking agreement, using in-group identity markers, giving reasons, expressing optimism, and emphasizing shared experiences. These strategies help speakers create a friendly and comfortable atmosphere, especially when discussing sensitive topics.

Recent studies have shown that positive politeness remains highly relevant in digital communication. (Dyner, (2021) states that positive politeness contributes to maintaining interpersonal relationships and encouraging audience engagement in online communication. Likewise, Tagg (2023) explains that relational language strategies are important for building rapport between communicators and their audiences. (Sifianou,

(2019) also argues that positive politeness frequently appears in informal communication because it promotes empathy, emotional support, and solidarity among participants. In addition, politeness strategies improve communication by reducing misunderstanding and encouraging cooperation (Taguchi, 2019). These studies indicate that positive politeness continues to play an important role in contemporary digital interaction.

Although many previous studies have investigated politeness in digital communication, several research gaps still exist. Most previous studies focused on classroom interaction, social media communication, online comments, or general online discourse. Comparatively, limited attention has been given to interview discourse discussing personal health experiences. Moreover, only a few studies have examined how positive politeness strategies help speakers create empathy, reduce social distance, and maintain conversational comfort when discussing sensitive health conditions in public digital media. This gap highlights the need for further research on positive politeness in health-related interview discourse.

One example of such communication can be found in Billie Eilish's interview discussing her experiences with Tourette Syndrome. Tourette syndrome is a neurological disorder characterized by involuntary motor and vocal tics that are often misunderstood by the public. During the interview, Billie Eilish openly shares her personal experiences and responds to the interviewer's questions in a relaxed and supportive manner. The interaction provides authentic data for examining how positive politeness strategies are employed when discussing a sensitive health-related topic. Unlike previous studies that mainly focused on educational settings or social media interactions, this study investigates positive politeness in health-related interview discourse. Therefore, it offers a different perspective on how interpersonal communication is constructed in contemporary digital media.

Based on the research gap identified above, this study addresses the following question:

- (1) What positive politeness strategies are employed by Ellen DeGeneres and Billie Eilish in their interview discussing Tourette Syndrome based on Brown and Levinson's framework?
- (2) How are the identified positive politeness strategies realized and used in the interaction between Ellen DeGeneres and Billie Eilish?
- (3) What communicative functions do the positive politeness strategies serve in facilitating empathy, rapport, solidarity, mutual understanding, and conversational comfort when discussing Tourette Syndrome?

LITERATURE REVIEW

Positive Politeness Theory

Positive is one of the central concepts in pragmatics because it explains how language is used to maintain interpersonal relationships and achieve communicative goals. The concept of politeness is closely associated with (Goffman, 1967) notion of face, which refers to an individual's public self-image that he or she seeks to maintain during social interaction. Face

can be threatened during communication when speakers express disagreement, criticism, requests, or other potentially sensitive acts and maintain harmonious interaction.

Building on Goffman's concept of face, Brown & Levinson, (1987) developed one of the most influential theories of politeness. They proposed four major politeness strategies: bald-on-record, positive politeness, negative politeness, and off-record strategies. Among these categories, positive politeness focuses on satisfying the hearer's positive face, namely the desire to be appreciated, accepted, and understood by others. Positive politeness seeks to minimize social distance and emphasize solidarity between interlocutors.

According to Brown and Levinson (1987), positive politeness can be realized through various linguistic strategies, including noticing and attending to the hearer, exaggerating interest or approval, seeking agreement, avoiding disagreement, using in-group identity markers, giving reasons, expressing optimism, and including both speaker and hearer in the activity. These strategies help create a friendly and cooperative atmosphere that facilitates successful communication. Positive politeness is particularly important in discussions involving personal experiences or sensitive topics because it encourages openness a mutual understanding.

Although Brown and Levinson's framework remain widely used, contemporary scholars argue that politeness should not be viewed solely as a fixed set of linguistic strategies. (Haugh, 2020) emphasizes that politeness is a socially constructed practice that emerges through interaction and is shaped by participants' interpretations. Similarly, (Kádár & Haugh, 2023) argue that politeness should be understood within broader social and cultural contexts because communicative expectations may vary across situations and communities. These perspectives suggest that politeness is dynamic and context-dependent rather than universally applied in the same way.

Despite these developments, Brown and Levinson's theory remains highly relevant for discourse analysis because it provides a systematic framework for identifying and interpreting politeness strategies in authentic communication. Therefore, the present study employs Brown and Levinson's (1987) positive politeness framework as the primary analytical tool for examining interpersonal communication in podcast discourse.

Positive Politeness in Digital Communication

The emergence of digital communication has significantly transformed the ways individuals interact and establish relationships. Online platforms, social media, video-sharing websites, and podcast have created new communication environments where speakers and audiences interact despite physical separation. In such context, politeness remains an important communicative resource because it helps maintain engagement, reduce misunderstandings, and foster positive relationships among participants.

Research has shown that positive politeness continues to play a significant role in digital discourse. (Dyner, 2021) found that politeness strategies contribute to maintaining social harmony and managing interpersonal relationships in online communication. Similarly, (Tagg, 2023) argues that digital communication relies heavily on relational language

strategies that help users create rapport and negotiate social identities. These findings indicate that politeness remains relevant despite changes in communication technologies.

Positive politeness is particularly prominent in informal digital communication because it encourages empathy, emotional connection, and audience engagement. (Sifianou, 2019) notes that positive politeness frequently appears in interactions where speakers seek to establish closeness and solidarity. Likewise, Taguchi (2019) explains that positive politeness contributes to communication effectiveness by promoting mutual understanding and reducing the possibility of misinterpretation. Through expressions of agreement, encouragement, and support, speakers are able to create a more comfortable communication environment.

Recent studies have also demonstrated the importance of positive politeness in media-based communication. (Georgakopoulou, 2022) argues that digital narratives often rely on interpersonal language strategies to establish authenticity and audience connection. In contemporary media discourse, communicators frequently employ positive politeness to present personal experiences in ways that are relatable and engaging. Such findings suggest that positive politeness serves not only interpersonal purposes but also broader communicative functions related to audience participation and public engagement.

Although existing studies provide valuable insights into politeness in digital communication, much of the research has focused on social media interactions, online discussions, and general internet communication. Comparatively less attention has been given to spoken digital discourse, particularly podcast interactions involving sensitive personal experiences. Consequently, further research is needed to understand how positive politeness operates in podcast communication and how it contributes to the construction of supportive interpersonal relationships.

Podcast Discourse and Health Communication

Podcasting has emerged as a prominent form of digital media that combines elements of conversation, storytelling, public communication. According to (Spinelli & Dann, 2019), podcasts create a unique communicative environment in which speakers engage in relatively informal and spontaneous interaction while simultaneously addressing a broader audience. This combination of intimacy and publicity distinguishes podcast discourse from many other forms of digital communication.

The conversational nature of podcasts encourages speakers to share personal experiences, opinions, and emotions. (Bonini, 2020) argues that podcasts often foster a sense of authenticity because listeners perceive conversations as natural and unscripted. Similarly, (Llinares & Espinar, 2023) emphasize that podcast communication allows audiences to develop stronger emotional connections with speakers due to its interactive and narrative-driven characteristics. As a result, interpersonal language strategies become essential for maintaining audience engagement and creating meaningful communication.

Health-related podcast discourse represents a particularly important area for communication research. Discussions concerning health conditions frequently involve

personal narratives, emotional experiences, and potentially sensitive information. Effective communication in such contexts requires empathy, trust, and mutual understanding. (Street, 2022) highlights that supportive communication can improve public understanding of health issues and encourage positive attitudes toward individuals experiencing medical conditions. Likewise, (Davis, 2021) emphasizes that empathy and trust are crucial components of successful health communication because they influence how audiences interpret and respond to information.

Several studies have investigated communication strategies in digital media and podcast interactions. However, most previous research has focused on entertainment content, educational podcasts, or general conversational discourse. Limited attention has been given to the role of positive politeness strategies in health-related podcast communication, particularly discussions involving personal medical experiences. Furthermore, little research has examined how positive politeness contributes to reducing stigma, encouraging openness, and maintaining conversational comfort when sensitive health issues are discussed publicly.

METHOD

Research Design

This study employed a pragmatic discourse analysis to examine the use of positive politeness strategies in Billie Eilish's interview about Tourette syndrome. This approach was chosen because the study focuses on how language is used in real communication to build good relationships between speakers. Pragmatic discourse analysis is appropriate because it helps explain not only what the speakers say but also why they use particular expressions in specific situations.

The study used Brown and Levinson's (1987) Positive Politeness Theory as the main analytical framework. This theory explains how speakers use language to make others feel respected, appreciated, and comfortable during communication. It was selected because it provides clear categories for identifying positive politeness strategies and helps explain how these strategies function in conversations about sensitive topics. Therefore, this approach is appropriate for answering the research questions regarding (1) the types of positive politeness strategies used in the interview and (2) the communicative functions of those strategies.

Data Source

The data for this study were taken from a publicly available YouTube interview featuring Billie Eilish and Ellen DeGeneres discussing Tourette syndrome. The interview was chosen because it contains a natural conversation in which Billie openly shares her personal experiences with a sensitive health condition. This type of interaction provides rich data for analyzing positive politeness strategies in authentic communication.

The interview was selected using purposive sampling. The researcher selected this interview because it met the objectives of the study. First, the interview focuses on Billie

Eilish's personal experiences with Tourette syndrome. Second, it presents a natural interaction between an interviewer and an interviewee instead of a scripted performance. Third, the conversation contains many supportive expressions that are relevant to Brown and Levinson's (1987) positive politeness theory. Finally, the interview has been viewed by a large public audience, making it relevant to the study of digital health communication.

The entire interview was analyzed. The unit of analysis in this study was utterances, which are defined as complete spoken expressions produced by one speaker before the other speaker begins speaking. Each utterance was examined to identify the positive politeness strategies used during the interaction.

Table 1

Data source

Video title	Description	Link	Duration	Utterances	Published date
Billie Eilish Gets Candid About Tourette Syndrome	YouTube Interview	https://youtu.be/k4vRFodAqWo?si=UY9oWnt3I--RIpP	3 minutes 52 seconds	67	September 27, 2019

Data Collection

The data were collected from a publicly available YouTube interview featuring Billie Eilish and Ellen DeGeneres discussing Tourette syndrome. The interview was selected because it focuses on Billie Eilish's personal experiences with Tourette syndrome and provides a naturally occurring conversation in which a sensitive health-related topic is discussed openly. This context offers rich data for examining the use of positive politeness strategies in authentic communication.

The data collection process consisted of four steps. First, the researcher selected the interview based on its relevance to the objectives of the study. Second, the researcher watched the entire interview several times to gain a clear understanding of the conversation, the context, and the interaction between the two speakers. Third, the interview was transcribed verbatim into written form. The transcript was then compared repeatedly with the original video to ensure that the transcription accurately reflected the speakers' utterances.

Finally, the transcript was divided into utterances based on speaker turns. In this study, an utterance is defined as a complete spoken expression produced by one speaker before the conversational turn shifts to the other speaker. This process resulted in a corpus of 67 utterances, which served as the primary data for the study. The completed transcript was then prepared for the coding process conducted during the data analysis stage.

Data Analysis

The data were analyzed using qualitative content analysis within a pragmatic discourse analysis approach. This approach was chosen because it allows the researcher to identify positive politeness strategies and explain how they function in the conversation. The analysis focused on understanding how the speakers used language to express empathy, build rapport, and maintain a comfortable interaction while discussing Tourette syndrome. The analysis followed the interactive model proposed by (Miles et al., 2014) which consists of data condensation, data display, and conclusion drawing.

In the first stage, data condensation, the researcher read the transcript several times to become familiar with the data. The researcher then identified utterances containing positive politeness strategies based on Brown and Levinson's (1987) theory. Each utterance was carefully coded according to the type of strategy it represented.

In the second stage, data display, the coded data were organized into tables according to the identified positive politeness strategies. The researcher then grouped utterances that showed similar characteristics and selected representative excerpts for each strategy. This process made it easier to compare the data and identify patterns in the interaction.

In the final stage, conclusion drawing and verification, the researcher interpreted each identified strategy by considering the context of the conversation. The analysis focused on explaining how each strategy helped the speakers express empathy, show agreement, build solidarity, provide explanations, encourage positive communication, and maintain harmonious interaction. The findings revealed six positive politeness strategies: Notice and Attend to the Hearer, Seek Agreement, Use In-group Identity Markers, Give (or Ask for) Reasons, Be Optimistic, and Avoid Disagreement.

To ensure the trustworthiness of the findings, the researcher repeatedly compared the transcript with the original video during the coding process. The coding results were also reviewed using Brown and Levinson's (1987) Positive Politeness Theory to ensure that each utterance was classified consistently and interpreted accurately.

FINDINGS

This section presents the findings on the use of positive politeness strategies in Billie Eilish's interview discussing Tourette Syndrome. The analysis revealed that positive politeness strategies were consistently employed throughout the interaction to establish rapport, express empathy, maintain conversational comfort, and facilitate mutual understanding between the interviewer and the interviewee. The findings also demonstrate that positive politeness played an important role in supporting discussion of a sensitive health-related topic.

Six positive politeness strategies were identified in the interview. These strategies include Notice and Attend to the Hearer, Seek Agreement, Use In-group Identity Markers,

Give Reasons, Be Optimistic, and Minimize Potential Discomfort. Each strategy performed a different communicative function that contributed to creating a supportive and empathetic interaction.

Table 2

Positive Politeness Strategies Identified in the Interview

No	Positive Politeness Strategy	Function in Interaction
1	Notice and attend to the hearer	Expressing empathy and concern
2	Seek agreement	Building shared understanding
3	Use in-group identity markers	Creating closeness and solidarity
4	Give reasons	Clarifying information and reducing misunderstanding
5	Be optimistic	Creating positive interaction
6	Minimize potential discomfort	Maintaining conversational comfort

Notice and Attend to the Hearer

One of the most prominent positive politeness strategies identified in the interview was Notice and Attend to the Hearer. This strategy appeared when Ellen DeGeneres demonstrated personal concern, appreciation, and emotional support toward Billie Eilish. Rather than focusing only on factual information about Tourette syndrome, Ellen acknowledged Billie's experiences and encouraged her to speak openly about her condition.

Table 3

Examples of Notice and Attend to the Hearer

Excerpt	Strategy	Function
"But I think that's amazing that you spoke about it because you kind of take away the scariness of it."	Notice and Attend to Hearer	Expressing appreciation and empathy
"I think it's a good thing... look at where you are, and look at what you have accomplished."	Notice and Attend to the Hearer	Encouraging and appreciating the hearer
"Because it's not. It's just part of who you are."	Notice and Attend to the Hearer	Reassuring the hearer

The first excerpt illustrates Ellen's appreciation of Billie's willingness to discuss Tourette syndrome publicly. Instead of emphasizing the medical condition itself, Ellen focused on Billie's courage in sharing her experience. This expression reduced the potential sensitivity of the topic while acknowledging Billie's positive contribution to public awareness.

The second excerpt further demonstrates this strategy through Ellen's encouragement and recognition of Billie's achievements despite living with Tourette syndrome. By highlighting

Billie's accomplishments, Ellen reinforced Billie's positive self-image and expressed admiration rather than sympathy. This interaction reflects Brown and Levinson's notion of attending to the hearer's interests and maintaining the hearer's positive face.

The final excerpt shows Ellen reassuring Billie by emphasizing that Tourette syndrome is simply one aspect of her identity rather than something that defines her. Such reassurance contributes to reducing emotional discomfort and strengthens interpersonal solidarity between the speakers. It also encourages audiences to view Tourette syndrome from a more accepting perspective. The analysis indicates that Notice and Attend to the Hearer functions as an important interpersonal strategy for expressing empathy, appreciating personal experiences, and creating a supportive conversational environment. In discussions involving sensitive health-related issues, this strategy helps strengthen rapport between speakers while encouraging openness and mutual respect.

Seek Agreement

Another positive politeness strategy identified in the interview was seek agreement. This strategy was employed when the speakers expressed agreement or confirmed each other's statements to maintain conversational harmony and demonstrate mutual understanding. Throughout the interview, Ellen frequently used confirmation and supportive responses that encouraged Billie to continue sharing her experiences.

Table 4
Examples of Seek Agreement

Excerpt	Strategy	Function
"Right."	Seek Agreement	Confirming the speaker's statement
"Yeah."	Seek Agreement	Expressing agreement and active listening
"Well, no. I think it's a good thing..."	Seek Agreement	Reinforcing shared understanding

The first excerpt occurs when Billie explains her experiences with Tourette syndrome and Ellen responds with "Right." This short response functions as a signal of agreement, indicating that Ellen understands Billie's explanation and encourages her to continue speaking. Rather than interrupting or questioning Billie's experience, Ellen acknowledges her statement and maintains the flow of the conversation.

The second excerpt is reflected through Ellen's repeated use of "Yeah" during Billie's explanations. Although brief, this expression serves as an important conversational device that demonstrates active listening and confirms the speaker's message. Such responses reduce interactional distance and create a cooperative conversational atmosphere.

The third excerpt appears when Ellen says, "Well, no. I think it's a good thing..." before explaining that many people may relate to Billie's experiences. Rather than simply agreeing,

Ellen develops Billie's previous statement by emphasizing its positive impact on others. This response strengthens mutual understanding and reinforces the supportive nature of the interaction. The findings indicate that Seek Agreement functions to maintain conversational continuity, encourage openness, and reinforce shared understanding between the interviewer and the interviewee. By consistently acknowledging Billie's experiences, Ellen creates an interaction in which the discussion remains collaborative and supportive despite addressing a sensitive health-related topic.

Use In-Group Identity Markers

The analysis also identified the use of In-Group Identity Markers, although this strategy appeared less frequently than the previous strategies. Brown and Levinson (1987) explain that this strategy is realized through informal language, shared expressions, or linguistic markers that emphasize familiarity and solidarity between speakers.

Table 5

Examples of Use In-Group Identity Markers

Excerpt	Strategy	Function
"You know..."	Use In-Group Identity Markers	Creating shared understanding
"Like..."	Use In-Group Identity Markers	Establishing an informal conversational style
"Yeah."	Use In-Group Identity Markers	Reinforcing interpersonal closeness

The first excerpt is represented by Ellen's repeated use of "You know...", which invites Billie to share common understanding during the conversation. This expression reduces formality and encourages a more relaxed interaction between the interviewer and the interviewee.

The second excerpt involves the frequent use of "Like..." by both speakers. Rather than functioning merely as a filler, the expression contributes to a conversational style that resembles everyday interaction. This informal language reduces social distance and makes the discussion feel more natural and personal.

The third excerpt is reflected through repeated responses such as "Yeah." Besides expressing agreement, these responses also function as informal conversational markers that strengthen rapport between the speakers. Their repeated use throughout the interview creates a friendly atmosphere and supports the development of interpersonal solidarity. Overall, Use In-Group Identity Markers contributes to creating a relaxed conversational environment by emphasizing familiarity, reducing social distance, and strengthening solidarity between the interviewer and the interviewee.

Give Reasons

Another positive politeness strategy identified in the interview was Give (or Ask for) Reasons. According to Brown and Levinson (1987), this strategy is employed when speakers provide explanations or justifications to help the hearer understand a particular action,

opinion, or situation. In the interview, Billie frequently explained the reasons behind her decision to speak publicly about Tourette syndrome and described how the condition affects her daily life.

Table 6

Examples of Give (or Ask for) Reasons

Excerpt	Strategy	Function
"I just never said anything because I didn't want that to define who I was"	Give (or Ask for) Reasons	Explaining a personal decision
"I have ways of kind of making them go away"	Give (or Ask for) Reasons	Explaining personal coping strategies
"Normally, if it's like a pretaped thing, they cut out the questions. Right. And that's when I let them out."	Give (or Ask for) Reasons	Clarifying why her tics are not always visible

The first excerpt illustrates how Billie explains her reason for not publicly discussing Tourette syndrome in the past. Rather than simply stating that she kept her condition private, she explains that she did not want the condition to become the defining aspect of her identity. This explanation helps the interviewer and the audience understand her perspective while reducing the possibility of misunderstanding.

The second excerpt demonstrates Billie's explanation of how she manages her tics during public appearances. By providing additional information about her coping strategies, she enables listeners to better understand that her condition can be managed in different situations.

The third excerpt further illustrates this strategy when Billie explains that pretaped interviews usually allow editors to remove moments when her tics appear. This explanation provides contextual information that helps listeners understand why many people may not notice her condition during public interviews. Ellen's brief response, "Right," also indicates that the explanation has been understood and accepted. This strategy contributes to clearer communication by providing reasons and contextual information that help the audience understand Billie's experiences with Tourette syndrome.

Being Optimistic

The strategy of Be Optimistic was also identified in the interview. Brown and Levinson (1987) explain that this strategy is used when speakers express confidence or positive expectations that encourage cooperation and reduce interpersonal distance. In the interview, optimism is reflected not through unrealistic claims but through encouraging statements that frame Tourette syndrome in a positive and hopeful way.

Table 7*Examples of Be Optimistic*

Excerpt	Strategy	Function
"I think it's a good thing that you..."	Be Optimistic	Encouraging a positive perspective
"Look at where you are, and look at what you have accomplished"	Be Optimistic	Highlighting success despite challenges
"I think a lot of people watching now... will be like, 'Well, I have it, too.' And that's great."	Be Optimistic	Expressing positive expectations for the audience

The first excerpt shows Ellen expressing confidence that Billie's openness about Tourette syndrome has a positive impact. Instead of treating the condition as something embarrassing, Ellen frames Billie's willingness to discuss it as a valuable contribution to public understanding.

The second excerpt reinforces this optimistic perspective by emphasizing Billie's achievements. Ellen highlights that Tourette syndrome has not prevented Billie from becoming successful, thereby encouraging both Billie and the audience to view the condition positively.

The final excerpt demonstrates optimism directed toward the audience. Ellen suggests that viewers with Tourette syndrome may feel encouraged after hearing Billie's story and may realize that they are not alone. This optimistic expectation strengthens the supportive atmosphere of the interview and promotes a more positive public understanding of the condition. The findings indicate that "being optimistic" functions to encourage confidence, inspire hope, and create a positive communicative environment when discussing a sensitive health-related topic.

Avoid Disagreement

The final positive politeness strategy identified in the interview was **Avoid Disagreement**. (Brown & Levinson, 1987) explain that speakers often maintain interpersonal harmony by minimizing disagreement and emphasizing shared viewpoints. Throughout the interview, Ellen consistently responded to Billie's explanations with supportive comments rather than criticism or contradiction.

Table 8*Examples of Avoid Disagreement*

Excerpt	Strategy	Function
"Right."	Avoid Disagreement	Accepting the speaker's explanation
"Yeah."	Avoid Disagreement	Supporting the speaker's perspective

...continued

"Because it's not. It's just part of who you are."	Avoid Disagreement	Reframing the issue to maintain agreement
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The repeated responses "Right" and "Yeah" function as signals of acceptance rather than disagreement. These responses acknowledge Billie's experiences without questioning or challenging her statements, allowing the conversation to proceed smoothly.

The final excerpt demonstrates this strategy more explicitly. Ellen reassures Billie that Tourette syndrome is simply one aspect of her identity rather than something that defines her. Instead of focusing on possible negative perceptions, Ellen reframes the discussion in a way that maintains agreement and supports Billie's positive self-image. Avoid Disagreement contributes to maintaining interpersonal harmony throughout the interview. By minimizing potential conflict and consistently supporting Billie's perspective, Ellen creates a conversational environment that encourages openness, empathy, and mutual understanding.

DISCUSSION

The findings show that positive politeness strategies played an important role in creating a supportive and empathetic interaction between Billie Eilish and Ellen DeGeneres. Six positive politeness strategies were identified in the interview: Notice and Attend to the Hearer, Seek Agreement, Use In-group Identity Markers, Give (or Ask for) Reasons, Be Optimistic, and Avoid Disagreement. These strategies helped the speakers discuss Tourette syndrome in a respectful, comfortable, and encouraging way. The findings indicate that positive politeness is not only used to maintain interpersonal relationships but also to support communication when discussing sensitive health-related issues.

The findings support Brown and Levinson's (1987) theory that positive politeness aims to satisfy the hearer's positive face by expressing appreciation, solidarity, and concern. Throughout the interview, Ellen consistently acknowledged Billie's experiences, responded supportively to her explanations, and encouraged her to speak openly about Tourette syndrome. Instead of treating the condition as something unusual or embarrassing, Ellen emphasized Billie's achievements, reassured her, and maintained a positive atmosphere. These interactional practices reduced social distance between the speakers and allowed the conversation to develop naturally despite addressing a sensitive topic.

Among the identified strategies, and Levinson's (1987) theory that positive politeness aims to satisfy the hearer's positive face by expressing appreciation, solidarity, and concern. Throughout the interview, Ellen consistently acknowledged Billie's experiences, responded supportively to her explanations, and encouraged her to speak openly about Tourette syndrome. Instead of treating the condition as something unusual or embarrassing, Ellen emphasized Billie's achievements, reassured her, and maintained a positive atmosphere. These interactional practices reduced social distance between the speakers and allowed the conversation to develop naturally despite addressing a sensitive topic.

Among the identified strategies, Notice and Attend to the Hearer was particularly important because it reflected Ellen's concern for Billie's feelings and experiences rather than

focusing only on factual information about Tourette syndrome. This finding is consistent with Brown and Levinson's (1987) view that attending to the hearer's interests strengthens interpersonal relationships and protects the hearer's positive face. It also supports Sifianou (2019), who argues that positive politeness encourages empathy and emotional connection, especially in informal communication. By appreciating Billie's openness and reassuring her throughout the interview, Ellen created an interaction that encouraged trust and mutual respect.

The findings also highlight the importance of Seek Agreement and Avoid Disagreement in maintaining conversational harmony. Ellen frequently responded with expressions such as *right* and *yeah* to acknowledge Billie's explanations without challenging her perspective. These responses signaled active listening and demonstrated that the interviewer accepted Billie's experiences. This finding is in line with (Haugh, 2020), who explains that politeness is constructed through interaction and mutual understanding between participants. Rather than functioning as simple conversational fillers, these expressions helped create a collaborative discussion in which Billie felt comfortable sharing her personal experiences.

Another important finding is the use of Give (or Ask for) Reasons, which enabled Billie to explain why she had previously chosen not to speak publicly about Tourette syndrome and how she managed her condition during interviews. Providing explanations helped the audience better understand her experiences and reduced possible misunderstandings. This finding supports (Taguchi, 2019), who argues that positive politeness contributes to effective communication by promoting clarity and mutual understanding. In this interview, explanations not only clarified information but also encouraged audiences to view Tourette syndrome from Billie's perspective.

The strategies of use in-group identity markers and be optimistic also contributed to creating an informal and supportive communication environment. Informal expressions such as *you know*, *like*, and *yeah* reduced social distance and made the conversation feel more natural. At the same time, optimistic statements about Billie's achievements and the positive influence of sharing her story encouraged audiences to see Tourette syndrome in a more hopeful way. These findings support previous studies by Dynel, (2021) and Tagg, (2023), which emphasize that positive politeness remains an important resource for building rapport, maintaining audience engagement, and strengthening interpersonal relationships in digital communication.

The findings also contribute to research on digital interview and podcast-like discourse. Previous studies have mainly examined positive politeness in classroom interaction, social media communication, or online discussions. Comparatively fewer studies have investigated how positive politeness operates in public interviews discussing sensitive health-related experiences. This study extends previous research by demonstrating that positive politeness strategies help reduce stigma, encourage openness, and create supportive communication when personal health issues are discussed in digital media.

Therefore, the study broadens the application of Brown and Levinson's (1987) theory to health-related interview discourse.

These findings also have practical implications for communication in digital media. Interviewers, podcast hosts, journalists, educators, and public figures may use positive politeness strategies to encourage respectful and empathetic discussions of sensitive topics. Expressions of appreciation, agreement, reassurance, and supportive explanations can help speakers feel more comfortable sharing personal experiences while improving audience understanding and engagement.

Although this study provides valuable insights into the use of positive politeness in a health-related interview, it has several limitations. The analysis was limited to a single interview involving one interviewer and one interviewee. Consequently, the findings cannot be generalized to all forms of digital communication. Future studies may examine positive politeness strategies in different podcasts, interviews, or health communication contexts involving a larger corpus and a wider range of speakers to obtain a more comprehensive understanding of interpersonal communication in digital media.

CONCLUSION

This study examined the use of positive politeness strategies in Billie Eilish's interview discussing Tourette syndrome by applying Brown and Levinson's (1987) Positive Politeness Theory. The analysis identified six positive politeness strategies: Notice and Attend to the Hearer, Seek Agreement, Use In-group Identity Markers, Give (or Ask for) Reasons, Be Optimistic, and Avoid Disagreement. These strategies were used to express empathy, build rapport, encourage openness, and maintain a supportive interaction while discussing a sensitive health-related topic. The findings demonstrate that positive politeness plays an important role in digital interview discourse by helping speakers reduce social distance and create a respectful and comfortable communication environment. The study also confirms that Brown and Levinson's framework remain relevant for analyzing interpersonal communication in contemporary digital media, particularly discussions involving personal health experiences. This study contributes to pragmatics by extending previous research on positive politeness to health-related interview discourse. It also provides practical insights for interviewers, podcast hosts, media professionals, educators, and health communicators who seek to create empathetic and supportive communication when discussing sensitive issues. This study is limited to a single YouTube interview and therefore cannot represent all forms of digital communication. Future research is recommended to investigate larger datasets from different interview or podcast contexts and explore additional politeness strategies to provide a broader understanding of interpersonal communication in digital media.

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Research Article

Pronunciation Errors in English Dental Fricatives and Postalveolar Affricates Among Indonesian EFL Learners

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ABSTRACT

Accurate pronunciation is essential for intelligible oral communication, yet English consonants absent from the Indonesian phonological system remain challenging for English as a Foreign Language (EFL) learners. This study investigated pronunciation errors involving the English dental fricatives (/θ/ and /ð/) and postalveolar affricates (/tʃ/ and /dʒ/) among 21 Indonesian vocational high school students and examined the factors contributing to these errors. A descriptive mixed-methods design within the Error Analysis framework was employed. Quantitative data were collected through a 40-word pronunciation test, while qualitative data were obtained from written interviews. The findings identified 557 pronunciation errors, with /θ/ producing the highest error rate (33.39%), followed by /ð/ (23.34%), /dʒ/ (21.54%), and /tʃ/ (20.83%). The interview results indicated that interlingual transfer from Indonesian and Javanese was the primary factor underlying students' pronunciation difficulties, while low learning motivation and limited pronunciation practice also contributed to the errors. These findings highlight the need for explicit and systematic pronunciation instruction for English consonants that have no equivalents in learners' first-language phonological systems.

Keywords: Pronunciation Errors, Error Analysis, EFL Learners, Interlingual Transfer, Vocational High School Students

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INTRODUCTION

Learning a foreign language, particularly English, requires more than mastering grammar rules or memorizing vocabulary. Pronunciation is equally important because it directly affects the intelligibility of spoken communication. Accordingly, pronunciation has become a central concern in the teaching and learning of English as a Foreign Language (EFL) (Srakaew, 2021). Nevertheless, many learners with adequate grammatical knowledge and vocabulary still struggle to communicate effectively because of inaccurate pronunciation, which often leads to misunderstanding in oral interaction (Kobilova, 2022). Therefore, pronunciation deserves the same instructional attention as grammar and vocabulary, as accurate sound production enables clearer communication between speakers and listeners (Awadh et al., 2024). Furthermore, pronunciation is a fundamental component of speaking proficiency because it enables speakers to convey meaning clearly and be understood by their interlocutors (Almusharraf, 2024). Effective oral communication, in turn, requires the integration of pronunciation, grammar, vocabulary, fluency, and comprehension (Ali et al., 2023).

Despite its importance, pronunciation remains one of the most underemphasized aspects of English language teaching in Indonesia. Most teachers prioritize grammar, vocabulary, reading, and writing, while the phonological system of English is rarely explained systematically before students are asked to produce English sounds. As a result, students often experience persistent difficulties in distinguishing and producing English sounds accurately (Fadillah, 2020). Research has shown that many Indonesian secondary school students continue to make pronunciation errors due to limited classroom practice and low confidence when speaking English (Ajiza et al., 2024). Students who have received explicit instruction in phonetics and phonology, however, report significantly better awareness of English sounds and improved ability to produce them accurately (Ali et al., 2023).

"How learners pronounce English is deeply rooted in the phonological patterns of their first language."

A key factor underlying these difficulties is the phonological distance between English and Indonesian. Because several English consonants have no equivalent in the Indonesian phonological system, learners often substitute unfamiliar English phonemes with the closest sounds from their first language (L1), a process known as interlingual transfer or L1 interference (Diani & Azwandi, 2021). Fatimah, (2020) identifies three primary causes of pronunciation difficulties among Indonesian EFL learners: mother tongue interference, differences between L1 and L2 sound systems, and limited familiarity with phonetic transcription. Given Indonesia's linguistic diversity, these L1 phonological habits are likely to transfer to English pronunciation. The English sounds most frequently mispronounced include the voiceless and voiced dental fricatives /θ/ and /ð/, as well as the voiceless and voiced postalveolar affricates /tʃ/ and /dʒ/, all of which are absent from or differ

substantially in Indonesian. Consequently, learners commonly substitute /θ/ with /t/ or /s/, /ð/ with /d/, /tʃ/ with /c/, and /dʒ/ with /j/ or /y/, substitutions that may distort meaning and reduce intelligibility (Lam & Thi, 2022).

To examine these errors in a principled way, this study adopts the Error Analysis (EA) framework proposed by Ellis 1997, as cited in Ramadani et al. (2022), which involves identifying, describing, explaining, and evaluating learner language errors based on linguistic principles (Ramadani et al., 2022). This framework has been widely applied in Indonesian EFL pronunciation research and has proven effective as a diagnostic tool for identifying systematic error patterns attributable to L1 interference (Awololon et al., 2025).

While several studies have investigated pronunciation difficulties among Indonesian EFL learners (Khoirunnisa & Misnadin, 2022), most of them focus on vowel errors (Fadillah, 2020) or consonant difficulties in general (Ristati et al., 2024) rather than examining /θ/, /ð/, /tʃ/, and /dʒ/ as an integrated group (Ramadani et al., 2022). Moreover, studies in vocational high school contexts remain limited, particularly those that investigate both pronunciation error patterns and the factors contributing to them. This study was conducted at SMK Pancasila 1 Kutoarjo, where preliminary observations during the Teaching and Learning Practice (PLP) program showed that students in Class X TOKR D frequently mispronounced these target sounds (e.g., *think* as *tink*, *the* as *de*, *chair* as *cair*, and *job* as *yob*). Without appropriate instructional support, such errors may become fossilized and hinder students' communicative competence in academic and professional contexts (Al-khresheh, 2024).

This study was conducted at SMK Pancasila 1 Kutoarjo to analyze pronunciation error patterns involving the English consonants /θ/, /ð/, /tʃ/, and /dʒ/ among tenth-grade students and to examine the factors contributing to these errors. To achieve these objectives, the study addressed the following research questions:

- (1) What types and patterns of pronunciation errors do Indonesian vocational high school EFL students produce when pronouncing the English consonants /θ/, /ð/, /tʃ/, and /dʒ/?
- (2) What factors contribute to Indonesian vocational high school EFL students' pronunciation errors in producing the English consonants /θ/, /ð/, /tʃ/, and /dʒ/?

The findings of this study are expected to contribute to the understanding of English pronunciation difficulties among Indonesian vocational EFL learners and to provide pedagogical insights for more effective pronunciation instruction.

LITERATURE REVIEW

Pronunciation has long been recognized as one of the most fundamental aspects of learning English as a foreign language (EFL), yet it remains the aspect most often neglected in classroom teaching practices. Pronunciation is not only related to the technical accuracy of sounds, but it is also directly linked to a speaker's ability to

convey meaning clearly to their interlocutor, making its role in oral communication indispensable (Susanto & Nanda, 2024). Weak pronunciation skills have been shown to impede overall oral communication, even when aspects of grammar and vocabulary are well mastered by learners (Kobilova, 2022). Therefore, the study of pronunciation in the EFL context, particularly in Indonesia, remains a relevant and urgent topic for continued development.

Pronunciation in the Context of EFL in Indonesia

In Indonesia, English is learned as a foreign language and is primarily used in formal settings such as classrooms and academic examinations, providing students with limited opportunities to use English in daily communication (Srakaew, 2021). Consequently, limited exposure to authentic English speech hinders students' ability to develop accurate pronunciation. This challenge is compounded by classroom practices that emphasize grammar, vocabulary, reading, and writing, while pronunciation receives relatively little instructional attention. As a result, many students who can read English texts still struggle to communicate orally with accurate pronunciation.

This issue is particularly important in vocational high schools (SMKs), where English serves not only as an academic subject but also as a practical skill required in the workplace. Since SMK graduates are expected to communicate effectively in professional settings, pronunciation accuracy becomes an essential competency (Reza & Sutanti, 2025). However, SMK students remain highly susceptible to pronunciation errors due to limited pronunciation-focused instruction and low motivation to learn English (Kurnia & Jabu, 2023). Many students also perceive English as having little relevance to their daily lives, reducing their willingness to practice speaking and increasing their fear of making mistakes, which further limits opportunities to improve pronunciation (Diana et al., 2024).

Differences in Phonological Systems and L1 Interference

One of the primary causes of pronunciation difficulties among Indonesian EFL learners is the difference between the phonological systems of English and Indonesian. Indonesian has a relatively simple and consistent phoneme inventory, whereas English contains a wider range of phonemes and more complex articulation patterns (Fitria, 2024). Consequently, learners often replace unfamiliar English sounds with the closest phonemes available in their first language (L1), a phenomenon known as interlingual transfer or L1 interference (Ramadani et al., 2022). Fatimah (2020) identifies three main causes of pronunciation difficulties in Indonesian EFL learning, namely native language interference, differences in sound systems between L1 and L2, and unfamiliarity with phonetic transcription. Although these findings provide a useful framework, Fatimah (2020) identifies three main causes of pronunciation difficulties among Indonesian EFL learners: mother tongue interference, differences between L1 and L2 sound systems, and limited familiarity with phonetic transcription. However, the study was based on a literature review

and data from a single region, limiting its applicability to other contexts, including vocational high school students in Central Java. Similarly, Kurnia & Jabu (2023) reported that pronunciation errors among Indonesian high school students were influenced by mother tongue interference, phonological interference, cross-language transfer, and avoidance strategies. Nevertheless, because their study focused on regular high schools in Makassar, its findings may not fully represent vocational high school students in Central Java, who are also influenced by Javanese.

Evidence from other Asian EFL contexts supports the importance of L1 interference. Lam & Thi (2022) found that L1 phonological transfer was a major source of consonant pronunciation errors among Vietnamese EFL learners, particularly for sounds absent from the learners' native language. Likewise, Awololon et al. (2025) reported that both interlingual and intralingual factors contributed to systematic pronunciation errors among junior high school students in Bali. Although these studies differ in linguistic and educational contexts, they consistently demonstrate that L1 interference is a major factor in English pronunciation difficulties. However, limited evidence is available regarding how these interference patterns affect Indonesian vocational high school students, particularly those whose pronunciation is influenced by Javanese. This gap highlights the need for the present study.

The Most Problematic Consonant Sounds

Among the English consonants that challenge Indonesian EFL learners, the dental fricatives /θ/ and /ð/ and the postalveolar affricates /tʃ/ and /dʒ/ are consistently reported as the most problematic. Fadillah (2020) identifies fricatives and affricates as the consonant categories that most frequently cause pronunciation errors among Indonesian EFL learners. The voiceless dental fricative /θ/ is commonly replaced with /t/, /d/, or /s/ because it has no direct equivalent in Indonesian (Ramadani et al., 2022). Likewise, the voiced dental fricative /ð/ is typically substituted with /d/, resulting in frequent pronunciation errors among Indonesian learners (Huda & Dewanti, 2022). The postalveolar affricates /tʃ/ and /dʒ/ are also difficult to produce because their articulation differs from that of Indonesian consonants, leading learners to simplify them into more familiar sounds (Maulina & Wennyta, 2021).

Although previous studies have documented pronunciation errors involving these consonants, they have generally examined only part of the target sounds or focused on learners from different educational contexts. Dyani et al. (2025) investigated the pronunciation of /θ/ and /ð/ among university students but did not include the postalveolar affricates /tʃ/ and /dʒ/. Similarly, Maulina & Wennyta (2021) focused on /tʃ/ and /dʒ/ without examining the dental fricatives. Consequently, evidence on the pronunciation of all four consonants among Indonesian vocational high school students remains limited. This gap highlights the need for the present study, which examines the four target consonants simultaneously in the vocational high school context.

Error Analysis as a Framework

To systematically examine pronunciation error patterns, this study uses the Error Analysis (EA) framework developed by Ellis 1997, in (Ramadani et al., 2022). Error Analysis provides a systematic procedure for identifying, classifying, and interpreting learners' language errors based on actual language production rather than predicting errors solely from differences between the first and second language (Ramadani et al., 2022). Its diagnostic nature makes it particularly suitable for identifying recurring pronunciation error patterns among EFL learners. Although Error Analysis cannot account for pronunciation forms that learners deliberately avoid producing, this limitation was addressed by combining pronunciation test data with written interviews to explore the underlying factors contributing to the observed errors.

The usefulness of Error Analysis has been demonstrated in previous Indonesian studies. Maulina & Wennyta (2021) applied the framework to identify pronunciation errors among university students, while Awololon et al. (2025) employed it to examine pronunciation errors among junior high school students in Bali. Although both studies confirmed the effectiveness of Error Analysis as a diagnostic framework, neither specifically examined the four English consonants /θ/, /ð/, /tʃ/, and /dʒ/ as a single focus. Therefore, this study applies Error Analysis to these four targets sounds simultaneously and examines their pronunciation across different word positions to provide a more comprehensive description of Indonesian vocational high school students' pronunciation errors.

Research Gap and Contribution of This Study

Based on a review and critical evaluation of existing studies, there are at least three gaps that need to be addressed. First, most research on English consonant pronunciation errors among Indonesian EFL learners has focused only on one or two sounds, without examining the four sounds /θ/, /ð/, /tʃ/, and /dʒ/ in an integrated manner within a single study (Dyani et al., 2025). Second, the majority of existing studies have been conducted in the context of university students or regular high school students, while the vocational high school context, which has specific professional communication demands, is still underrepresented in the literature (Kurnia & Jabu, 2023). Third, the influence of the Javanese regional language as the first language used by students simultaneously with Indonesian in daily life has not received adequate attention, even though the existence of these two mother tongues has the potential to exacerbate the patterns of phonological interference that occur.

This study aims to address all three of these gaps simultaneously by conducting an integrated error analysis of the pronunciation of four consonant sounds /θ/, /ð/, /tʃ/, and /dʒ/ among 10th-grade students in TOKR D at SMK Pancasila 1 Kutoarjo, a context that, geographically, linguistically, and institutionally, has never previously been the focus of similar research. By employing the Error Analysis framework supplemented with written interview data, this study not only intends to map the existing error patterns but also to explore the underlying

factors in greater depth. The findings of this study are expected to provide specific and practical contributions to the development of pronunciation teaching strategies at the vocational high school level, particularly for sounds that have no equivalents in the phonological systems of either the Indonesian or Javanese languages.

METHOD

Research Design and Context

This study employed a descriptive mixed-methods research design to obtain a comprehensive understanding of students' pronunciation performance. Mixed-methods research involves systematically collecting and analyzing both quantitative and qualitative data to address a research problem, and then integrating the two forms of data and their results within a specific research design (Creswell & Clark, 2017). This approach is further supported by the view that mixed-methods research serves as an integrative methodology that combines the strengths of quantitative and qualitative traditions to produce a more comprehensive understanding of complex research problems (Tashakkori et al., 2020). In this study, quantitative data from a pronunciation test were used to identify error patterns involving the English consonants /θ/, /ð/, /tʃ/, and /dʒ/, while qualitative data from written interviews were used to explore the factors contributing to those errors.

The study was conducted at SMK Pancasila 1 Kutoarjo, a vocational secondary school in Central Java, Indonesia. As a vocational institution, the school prepares students for the workforce, making oral English communication skills particularly important. The researcher became familiar with the school through the Teaching and Learning Practice (PLP) program, during which preliminary classroom observations indicated that students experienced persistent difficulties in producing the target English consonants. These observations provided the rationale for conducting the present study.

Participants

The participants in this study were twenty-one Indonesian vocational high school students, which consisted of students from Class X TOKR D majoring in Light Vehicle Engineering. Participants were selected using purposive sampling, which allows researchers to deliberately select individuals who are most relevant to the study objectives (Dahal et al., 2024). Class X TOKR D was chosen based on preliminary observations during the Teaching and Learning Practice (PLP) program, which indicated that students experienced difficulties in pronouncing the English consonants /θ/, /ð/, /tʃ/, and /dʒ/. All twenty-one students present during the data collection period participated in the study.

They had received basic English instruction and represented vocational high school EFL learners whose primary languages were Indonesian and Javanese. These linguistic backgrounds were considered relevant because first-language phonological transfer was expected to influence students' pronunciation of English consonants.

Tabel 1*The relevant characteristics of the participants*

Characteristic	Description
Grade Level	Tenth Grade
Class	X TOKR D
Number of Participants	21 Students (all male)
First Language	Indonesian and Javanese
English Proficiency Level	Beginner to Elementary

All participants were male tenth-grade students from Class X TOKR D and were categorized as beginner-level EFL learners based on their classroom English performance and the school's instructional context.

To protect participants' privacy and maintain confidentiality, each student was assigned a participant code (S1–S21), which was used consistently throughout the data collection, analysis, and reporting processes. Prior to data collection, participants were informed about the purpose of the study, and their participation was entirely voluntary. All data collected were used solely for research purposes, and participants' identities were kept confidential throughout the study.

Data Collection

Two instruments were used to collect the data. The first was a pronunciation test consisting of a word-reading task with 40 words, representing the four target sounds /θ/, /ð/, /tʃ/, and /dʒ/ (10 words for each sound) across initial, medial, and final word positions. The word list was developed by the researcher based on English vocabulary commonly encountered by tenth-grade vocational high school students. Words were selected according to three criteria: (1) the presence of the target consonants, (2) their distribution across word positions, and (3) their familiarity to the participants. To reduce the influence of lexical difficulty, most words consisted of one to three syllables, ensuring that pronunciation errors reflected difficulties with the target sounds rather than unfamiliar vocabulary.

The second instrument was a written interview containing of one broad open-ended question that encouraged students to explain the factors they believed affected their English pronunciation, including the influence of their first language, learning motivation, pronunciation practice, and other perceived difficulties. Follow-up prompts were provided when necessary to obtain richer responses. The interview data addressed the second research question.

Data were collected in three sessions. The first two sessions were devoted to the pronunciation test, which was administered individually under consistent classroom conditions. Students read the word list aloud without assistance, and all responses were recorded using a digital voice recorder to enable repeated listening during analysis (Ramadani et al., 2022). The third session consisted of the written

interview. To encourage natural pronunciation, students were given a brief familiarization period with the word list before the recording began.

Data Analysis

The data were analyzed using both quantitative and qualitative procedures. The quantitative data obtained from the pronunciation test were analyzed following the five steps of Error Analysis proposed by Ellis (1997), as cited in Ramadani et al. (2022): (1) collecting a sample of learner language, (2) identifying the errors, (3) describing the errors, (4) explaining the errors, and (5) evaluating the errors. In this study, one word mispronounced on its target sound was counted as one error, regardless of the number of deviating sounds within that word.

The researcher began by transcribing all audio recordings and systematically classifying errors according to target sound and word position. No additional software was used in the analysis process; instead, all coding and classification were conducted manually through repeated listening to the recordings. The frequency and percentage of each error category were then calculated using the formula proposed by Levin and Fox, as cited in Ramadani et al. (2022):

$$P = F / N \times 100\%$$

Where P refers to the percentage of errors in a given category, F is the frequency of errors in that category, and N is the total number of all errors recorded.

To ensure the trustworthiness of the analysis, the transcription and error classification were verified through repeated listening sessions. The qualitative data obtained from the written interviews were analyzed using thematic analysis. Students' responses were read repeatedly, coded, categorized, and interpreted to identify recurring themes related to the causes of pronunciation errors, particularly interlingual transfer and learning motivation.

To enhance the trustworthiness of the findings, the quantitative pronunciation test results were triangulated with the qualitative interview responses to examine the consistency between the observed pronunciation errors and the factors reported by the participants. This triangulation strengthened the credibility of the findings by providing a more comprehensive understanding of students' pronunciation difficulties.

FINDINGS

Pronunciation Errors on /θ/, /ð/, /tʃ/, and /dʒ/

Target Sound Error Distribution

To address the first research question, the quantitative data obtained from the pronunciation test were analyzed using Error Analysis procedures. A total of 557 pronunciation errors were identified across the four target consonant sounds. Each error was counted and converted into a percentage of the total number of errors using

the formula $P = F/N \times 100\%$ (Ramadani et al., (2022)). The overall distribution of errors is presented in Table 1.

Table 1.

Percentage of Pronunciation Errors per Target Sound

No.	Target Sound	Total Errors (F)	Total Errors (N)	Percentage (P)
1	/θ/ (Voiceless Dental Fricative)	186	557	33.39%
2	/ð/ (Voiced Dental Fricative)	130	557	23.34%
3	/tʃ/ (Voiceless Postalveolar Affricate)	116	557	20.83%
4	/dʒ/ (Voiced Postalveolar Affricate)	120	557	21.54%
Total	557	557	557	100%

Note: F = total errors per sound; N = total errors across all sounds; $P = F/N \times 100\%$

The /θ/ sound resulted in the highest number of errors with 186 occurrences (33.39%), followed by /ð/ with 130 errors (23.34%), /dʒ/ with 120 errors (21.54%), and /tʃ/ with 116 errors (20.83%). This pattern indicates that the dental fricative sounds (/θ/ and /ð/) are generally more difficult to master compared to the postalveolar affricate sounds (/tʃ/ and /dʒ/).

Word Error Distribution

To identify the words that are most frequently mispronounced, an error analysis per word was conducted. Considering that each target sound was tested through 10 words, Table 2 presents the words with the highest error frequency for each target sound as a representation of the most prominent error patterns.

Table 2.

Words with the Highest Mispronunciation Frequency per Target Sound

No.	Target Sound	Word	Position	Students' Errors (F)	N	P (%)
1	/θ/	think	Initial	21	557	3.77%
2	/θ/	thank	Initial	20	557	3.59%
3	/θ/	three	Initial	20	557	3.59%
4	/θ/	teeth	Final	20	557	3.59%
5	/ð/	breathe	Final	19	557	3.41%
6	/ð/	though	Initial	17	557	3.05%
7	/ð/	there	Initial	16	557	2.87%
8	/tʃ/	chair	Initial	17	557	3.05%
9	/tʃ/	chapter	Initial	16	557	2.87%
10	/dʒ/	page	Final	20	557	3.59%
11	/dʒ/	bridge	Final	17	557	3.05%
12	/dʒ/	agent	Medial	16	557	2.87%

Note: F = number of students who mispronounced the word; N = total errors across all sounds (557); $P = F/N \times 100\%$. Words listed in descending order of error frequency per target sound.

For the /θ/ sound, the word 'think' recorded the highest error frequency with 21 students (3.77%), followed by 'thank,' 'three,' and 'teeth,' each mispronounced by 20 students (3.59%). The errors predominantly involved the stopping of the voiceless

dental fricative /θ/, whereby the target sound was realized as the voiceless alveolar stop /t/. For example, 'think' was pronounced as 'tink' and 'thank' as 'tank'.

For the /ð/ sound, the word 'breathe' recorded the highest number of errors with 19 students (3.41%), followed by 'though' (3.05%) and "there" (2.87%). The errors primarily involved the stopping of the voiced dental fricative /ð/, which was consistently realized as the voiced alveolar stop /d/. For example, 'the' was pronounced as 'de' and 'there' as 'dere'.

For the /tʃ/ sound, the word 'chair' had the highest number of errors with 17 students (3.05%), followed by 'chapter' with 16 students (2.87%). Students generally replaced /tʃ/ with the /c/ sound in Indonesian, resulting in 'chair' being pronounced as 'cair' and 'chapter' being pronounced as 'capter'. Errors in the /tʃ/ sound in this study tended to be concentrated at the beginning of words.

For the /dʒ/ sound, the word 'page' had the highest frequency of errors with 20 students (3.59%), followed by 'bridge' (3.05%) and 'agent' (2.87%). Errors in the /dʒ/ sound involved substitution with the /j/ or /y/ sounds in Indonesian, for example, 'job' being pronounced as 'yob' and 'page' being pronounced as 'pey'.

The quantitative findings presented above indicate that students experienced systematic difficulties in producing all four target consonants, particularly the dental fricatives /θ/ and /ð/. To address the second research question, the qualitative data obtained from the written interviews were analyzed thematically. The analysis revealed two major factors contributing to students' pronunciation errors: low learning motivation and interlingual transfer.

Factors Causing Pronunciation Errors (RQ 2)

Motivation and Learning Engagement Factors

Analysis of the written interview responses revealed two closely related factors contributing to students' pronunciation errors: low learning motivation and limited learning engagement. Several participants perceived English as difficult and lacked confidence in their pronunciation abilities, as reflected in the following excerpts: "I think English is difficult to learn because I often have trouble pronouncing English words correctly" (S5, interview results) and "I find English difficult because I cannot speak it well. I am more accustomed to using Indonesian and Javanese" (S18, interview results). These responses suggest that students' negative perceptions of English reduced their confidence and willingness to practice pronunciation, which may have contributed to the recurring pronunciation errors identified in the pronunciation test.

The interview responses also showed limited learning engagement outside the classroom. As illustrated by S7, "I rarely practice English vocabulary or pronunciation at home because I only use English during school lessons," and S12, "I rarely practice speaking English outside the classroom because I find the pronunciation difficult," students had few opportunities to practice English independently. These findings suggest that limited pronunciation practice restricted

students' exposure to English sounds and may have contributed to the persistent pronunciation errors observed in the pronunciation test.

Interlingual Transfer Factor

Most participants reported relying on Indonesian and Javanese pronunciation patterns when speak English because these sound systems were more familiar to them, indicating the influence of interlingual transfer on their pronunciation. This influence was further supported by both the pronunciation test and the written interview responses, which consistently showed that students tended to substitute unfamiliar English consonants with more familiar sounds from their first-language phonological systems.

Written interview data revealed that many students admitted not considering English an important subject in their daily lives, resulting in less attention during the learning process. When asked to speak or pronounce words in English, some students tended to immediately say they were unable without trying first. This attitude has been observed since the Field School Introduction (PLP) activities, where many students spontaneously expressed statements such as reflected in the systematic phonological processes identified in the students' speech. The target sounds /θ/ and /ð/ underwent stopping, as the dental fricatives were consistently replaced by the alveolar stops /t/ and /d/, respectively. This process reduced articulatory complexity by replacing fricatives, which require continuous airflow through a narrow constriction, with stops that are more familiar in the learners' first-language phonological systems. In addition, the affricates /tʃ/ and /dʒ/ were replaced with /c/, /j/, or /y/, indicating consonant substitution based on phonetic similarity and the influence of Indonesian and Javanese sound categories.

Furthermore, the pronunciation test demonstrated that the dental fricatives /θ/ and /ð/ were the most problematic sounds for the participants, accounting for 33.39% and 23.34% of the total pronunciation errors, respectively. Most students consistently replaced /θ/ with /t/ (e.g., think → tink) and /ð/ with /d/ (e.g., the → de), indicating a systematic stopping process. These substitutions suggest that learners relied on familiar alveolar stops available in Indonesian and Javanese when attempting to produce unfamiliar English dental fricatives.

The interview data also support this interpretation. Several participants reported that they tended to pronounce English words using Indonesian or Javanese pronunciation patterns because these sound systems were more familiar to them (e.g., S18). This finding indicates that the observed substitutions were influenced by interlingual transfer rather than random pronunciation mistakes. In other words, the quantitative findings and interview responses consistently indicate that students experienced systematic difficulties in producing the English dental fricatives and postalveolar affricates. The higher error rates for /θ/ and /ð/ suggest that dental fricatives posed greater articulatory challenges than postalveolar affricates because these sounds are absent from the Indonesian phonological inventory.

DISCUSSION

Interpretation of RQ 1 Findings: Pronunciation Error Patterns

The high error rates in producing the sounds /θ/ (33.39%) and /ð/ (23.34%) compared to /tʃ/ and /dʒ/ can be understood through the articulatory characteristics of each sound. The dental fricative sounds /θ/ and /ð/ require specific tongue placement and airflow control that are not present in either Indonesian or Javanese. As a result, students do not possess an articulatory reference from their first language to guide the production of these sounds. In contrast, although /tʃ/ and /dʒ/ do not have exact equivalents in English, they share certain phonetic similarities with consonants that are familiar to Indonesian learners. This may explain why the error rates for these affricates were lower than those for the dental fricatives. Fadillah (2020) similarly reported that dental fricatives constitute one of the most problematic consonant categories for Indonesian EFL learners.

A comparable pattern was identified by Dyani et al. (2025), who found that /θ/ and /ð/ generated the highest error rates among university-level EFL students. Furthermore, Haryani et al. (2020) argued that affricates tend to be easier to acquire than fricatives because they share partial similarities with the Indonesian consonant system.

The substitution patterns observed in this study indicate that students did not make errors randomly. The voiceless dental fricative /θ/ frequently underwent stopping and was realized as the alveolar stop /t/, while the voiced dental fricative /ð/ underwent a similar process and was realized as /d/. In addition, the affricates /tʃ/ and /dʒ/ were commonly replaced by /c/, /j/, or /y/, reflecting learners' tendency to rely on familiar phonological categories from their first language. This finding is consistent with Lam & Thi (2022), who described such substitutions as sound feature changes that occur when learners modify the phonetic characteristics or manner of articulation of a target consonant because the sound is absent from their native-language inventory.

Similar substitution patterns were also reported by Awololon et al. (2025) among seventh-grade EFL learners in Bali. Their findings suggest that the influence of first-language phonology on English pronunciation is not limited to a particular region but may occur across different Indonesian learning contexts. One finding that differs slightly from previous research concerns the distribution of /tʃ/ errors. In the present study, most /tʃ/ errors occurred in word-initial position. In contrast, Haryani et al. (2020) reported a more even distribution of errors across word positions. This discrepancy may be related to differences in the composition of the word lists used in each study. Therefore, caution should be exercised when generalizing the present finding to broader EFL contexts.

Interpretation of RQ 2 Findings: Factors Causing Errors

The identification of low motivation and interlingual transfer as the two main contributing factors is consistent with a substantial body of EFL pronunciation research. However, an important finding of the present study is the way these factors appear to interact within the vocational high school context. Low motivation reduces students' willingness to practice pronunciation beyond classroom activities, limiting opportunities to receive corrective feedback and improve their production of unfamiliar English sounds. As a consequence, pronunciation habits influenced by the first language may persist and gradually become more stable over time.

At the same time, persistent first-language interference may further reduce students' confidence in speaking English. When students repeatedly experience difficulty producing English sounds that differ from those of their native language, they may become reluctant to participate in oral activities. This situation creates a mutually reinforcing cycle in which limited motivation reduces practice opportunities, while continuing pronunciation difficulties further weaken students' motivation and confidence.

The role of low motivation identified in this study is consistent with the findings of Maulina & Wennyta (2021), who reported that low motivation and limited exposure to English contribute significantly to recurring pronunciation errors. A similar pattern was observed by Fatimah (2020), who found that only a small proportion of students regularly practiced pronunciation outside the classroom. This limited engagement with pronunciation practice was considered one of the factors contributing to persistent pronunciation difficulties.

The relationship between motivation and pronunciation development is further supported by Kurnia & Jabu (2023), who found that low self-confidence and fear of making mistakes often discourage students from participating in oral practice activities. As pronunciation improvement requires frequent and meaningful practice, students who avoid speaking opportunities are less likely to develop accurate pronunciation skills.

Interlingual transfer emerged as the most dominant factor contributing to pronunciation errors in the present study. The findings indicate that students frequently relied on Indonesian and Javanese phonological patterns when attempting to pronounce unfamiliar English consonants. This tendency was particularly evident in the stopping of the dental fricatives /θ/ and /ð/, whereby these sounds were realized as the alveolar stops /t/ and /d/. Similar phonological processes were also observed in the replacement of the affricates /tʃ/ and /dʒ/ with more familiar sounds from the learners' first-language phonological systems.

The predominance of interlingual transfer as a contributing factor has also been confirmed by various previous studies. Dyani et al. (2025) identified L1 phonological interference as the main source of errors in /θ/ and /ð/ in Indonesian EFL learning. Similarly Fatimah (2020) argued that differences between the sound

systems of learners' first and second languages constitute one of the major causes of pronunciation difficulties.

Further support is provided by Kurnia & Jabu (2023), who explained that learners often interpret unfamiliar English sounds through the phonological framework of their native language, resulting in systematic sound substitutions. Ali et al. (2023) additionally found that learners who have not received explicit instruction in phonetics and phonology frequently struggle to recognize articulatory differences between English sounds and those of their first language. This finding highlights the importance of explicit pronunciation instruction as a means of reducing the impact of interlingual transfer and improving learners' pronunciation accuracy.

Theoretical and Practical Implications

Theoretically, the findings of this study reinforce the relevance of the Error Analysis framework as an effective diagnostic tool for identifying systematic patterns of pronunciation errors in EFL learning. According to Ellis (1997), learner errors provide valuable insights into the language learning process because they reflect the strategies learners use when dealing with unfamiliar linguistic features. The recurring substitution patterns identified in this study further support the usefulness of Error Analysis for examining pronunciation difficulties in EFL contexts (Ramadani et al., 2022).

The findings also provide additional empirical evidence regarding the role of first-language interference in shaping learners' pronunciation performance. Previous studies have shown that Indonesian EFL learners frequently rely on the phonological system of their first language when producing unfamiliar English sounds (Diani & Azwandi, 2021). Similarly Fatimah (2020) argued that differences between the sound systems of the first and second languages constitute one of the major causes of pronunciation difficulties among Indonesian learners.

Furthermore, the present study contributes to the growing body of research on phonological interference by providing evidence from an Indonesian-Javanese bilingual context. The findings suggest that the coexistence of two first-language systems may influence learners' production of English sounds, particularly those that have no direct equivalents in either language. This observation extends previous findings on sound substitution patterns reported by Lam & Thi (2022) who emphasized that learners often modify unfamiliar sounds by replacing them with phonologically similar sounds from their native language.

This finding suggests that pronunciation difficulties in bilingual EFL settings may involve more complex phonological interactions than those reported in monolingual contexts, thereby extending the scope of Error Analysis in pronunciation research.

In addition, the interaction between linguistic factors (interlingual transfer) and affective factors (low motivation) highlights the multidimensional nature of pronunciation learning. This finding supports Ali et al. (2023), who emphasized that successful pronunciation development requires not only awareness of phonetic and phonological differences but also sufficient engagement and practice opportunities. Therefore, the present study contributes to a broader understanding of how linguistic and affective factors jointly influence pronunciation development in EFL learning, particularly within vocational secondary school contexts.

Research Limitations

This study has several limitations. First, it involved only 21 students from a single class at one vocational high school, limiting the generalizability of the findings. Second, the pronunciation test employed a word-reading task, which represents a controlled context and may not fully reflect students' pronunciation in spontaneous speech. Third, the use of written rather than oral interviews limited the depth of information regarding the factors contributing to pronunciation errors. Finally, the influence of Javanese as the participants' first language could not be examined separately from that of Indonesian.

Recommendation

Based on the findings and limitations of this study, several recommendations are proposed. Future research should involve larger and more diverse samples from vocational high schools in different regions to improve the representativeness of the findings. Researchers are also encouraged to collect pronunciation data from more natural speaking contexts, such as spontaneous conversations or free-speaking tasks, to obtain a more comprehensive understanding of learners' pronunciation errors. In addition, longitudinal studies examining pronunciation development before and after instructional interventions are recommended to evaluate the effectiveness of pronunciation teaching strategies. Future studies may also compare learners with different first-language backgrounds, such as Indonesian and Javanese, to better understand the influence of first-language phonology on English pronunciation.

CONCLUSION

This study examined pronunciation errors in English consonant sounds /θ/, /ð/, /tʃ/, and /dʒ/ made by Class X TOKR D students at SMK Pancasila 1 Kutoarjo. The findings revealed that /θ/ produced the highest error rate, followed by /ð/, /dʒ/, and /tʃ/, with the most common pattern being the stopping of dental fricatives, where /θ/ and /ð/ were realized as /t/ and /d/, respectively, indicating a strong influence of learners' first-language phonological systems. Two main factors contributing to these errors were identified, namely interlingual transfer and low learning motivation, with interlingual transfer emerging as the dominant factor, as students consistently relied on Indonesian and Javanese phonological patterns when encountering unfamiliar English sounds. Limited motivation and insufficient pronunciation practice further reinforced these difficulties. These findings underline

the importance of explicit pronunciation instruction, particularly for sounds that have no equivalents in learners' first-language systems, and confirm the usefulness of Error Analysis as a framework for identifying systematic difficulties in bilingual Indonesian-Javanese EFL contexts. Future research is recommended to involve larger participant groups and investigate the effectiveness of targeted pronunciation-teaching interventions in improving learners' overall pronunciation accuracy.

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Research Article

Exploring Motivational Dynamics in EFL Classroom Contexts: A Focus on Attractor States

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ABSTRACT

In Second Language (L2) research, motivation has often been conceptualised as a stable learner characteristic, largely independent of contextual influences. Drawing on the perspective of the Complex Dynamics System Theory (CDST), this study conceptualises motivation as a complex and dynamic phenomenon involving multiple cognitive and affective components of L2 learning. While previous CDST-informed studies have acknowledged the dynamic nature of L2 motivation, limited research has examined how stable and changing motivational patterns emerge and evolve within authentic EFL classroom settings, particularly in diverse higher education contexts. It explores the in-class motivational experiences of EFL learners across three Indonesian universities. Eight focal students participated in a series of interviews following classroom observations. This design ensures ecological validity by examining their motivation without removing them from classroom contexts. The findings reveal both stability and variability in attractor states, including engagement, interest, neutral attention, boredom, and anxiety, while motivational narratives and contextual factors contribute to dynamic fluctuations across classroom experiences. Students' self-concepts emerged as a core mechanism underlying these motivational dynamics, extending CDST-informed understandings of L2 motivation and suggesting that supporting learners' self-concepts may help sustain motivation in EFL classrooms.

Keywords: *Motivational Dynamics, Attractor States, CDST, EFL Classrooms*

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INTRODUCTION

As foreign language learning gains increasing importance worldwide, learner motivation has emerged as a central issue in second language (L2) acquisition research. L2 motivation research has developed from its original social psychological stand point, to include more educational relevance and a greater emphasize on the individual-context interactions seen from the complex and dynamic perspectives (Ushioda, 2019a). As underlined by Muir (2020), integrating theories from multiple disciplines within L2 motivation research has significantly shaped both theoretical perspectives and methodological approaches in second language acquisition. Although existing theories have advanced understanding of L2 motivation, no single framework can fully capture its dynamic and complex nature. Consequently, L2 motivation research has increasingly embraced a complexity perspective to better understand motivational dynamics (Hiver & Papi, 2019). This limitation is particularly evident in classroom settings, where learner motivation continuously interacts with and is shaped by contextual influences (Mercer, 2011). This has led to an increasing number of studies conceptualizing motivation as a complex and evolving phenomenon and adopting methodological approaches capable of capturing motivational dynamics (Hiver & Papi, 2019; MacIntyre et al., 2017).

Previous studies mostly relied on psychometric surveys that treated L2 motivation as learners' stable, measurable attribute (e.g., Dörnyei et al., 2006; Dörnyei & Csizér, 1998; Gardner & Lambert, 1959; Guilloteaux & Dörnyei, 2008; McEown et al., 2014; Papi, 2010). While this line of research has identified key psychological and social factors influencing L2 learning, most recent perspectives view motivation as a dynamic phenomenon that fluctuates over time and across contexts (Waninge et al., 2014). They highlight the need for a comprehensive theory that can account for the complex and evolving interaction between individual differences and personality traits (Dörnyei, 2019). For instance, learners' motivational dispositions may remain relatively stable over longer periods, but they still undergo significant change, as demonstrated by studies showing fluctuations in learners' motivation over a semester (Campbell & Storch, 2011). These shifts highlights the particular challenge of investigating motivation at the classroom level, as if is shaped by immediate learning experiences.

"L2 motivation is not fixed – it constantly shifts in response to learners and their classroom experiences."

This challenge appears because motivation is an unobservable, dynamic, and multifaceted construct. Traditional quantitative approaches to motivation research often struggle to capture its complexity and dynamic nature. Moreover, they provide limited insight into learners' unique motivational experiences and how motivation evolves through ongoing interactions with learning contexts (Ushioda, 2019). Despite these challenges, L2 teachers can often distinguish between highly motivated students and unmotivated students. For L2 learners themselves, motivation is an internal quality that they can recognise and experience throughout their language learning journey. Moreover, learner motivation countinuously fluctuates and varies over time, even under the same instructional

conditions (Nitta, 2013). To date, little research has examined how attractor states emerge and operate within the motivational dynamics of Indonesian EFL classrooms. This fact leads to another challenge regarding the conceptualisation of motivation. Although motivation is frequently viewed as an affective learner attribute, it cannot be easily distinguished from cognition and emotion, as these processes typically operate together (Dörnyei, 2017; Waninge, 2014).

Investigating the combination of motivation, cognition, and affect might provide a comprehensive insight of how student motivation ebbs and flows in specific learning situations. Waninge (2014) emphasises that the three factors are inherently interconnected and should be examined as attractor states, a concept derived from CDST. The concept of attractor states are crucial in understanding the emergence of motivational system's outcomes and represent stable tendencies that student motivation tends to approach over time (Hiver & Al-Hoorie, 2020). Furthermore, these attractor states serve as indicators to examine the emergence of learners' motivational dynamics and to identify some stable patterns which can be maintained, disrupted, or transformed through learners' ongoing experiences. Examining the relationship between learners' broader motivational dispositions and their real classroom experiences can provide insight into how motivational dynamics develop over time. Building on this perspective, the present study identifies in-class motivational attractor states and examines how they reflect the developmental trajectories of individual learners' motivational systems. Accordingly, the study addresses the following research questions:

- (1) How does students' general motivation shape in-class motivational dynamics?
- (2) What attractor states emerge in students' in-class motivation over four weeks of EFL instruction?

LITERATURE REVIEW

Complexity of Motivation

In real classroom situations, L2 learners experience motivational changes due to the complex interactions of multiple components. These components involve their attitude toward the language, teachers, and tasks or activities (Waninge et al., 2014). Mainstream L2 motivation research has consistently treated motivation as a relatively stable individual difference, even though this belief has been increasingly challenged by complexity perspectives (Dörnyei & Ryan, 2015; Gardner, 2011). However, Dörnyei (2020) claims that motivation can be viewed both as a trait and a state. This is because learners, as underlined by Wasserman and Wasserman (2020), may exhibit trait-based motivation while also experiencing state-like motivation, which is situational and goal-directed. This dichotomy could exhibit co-adaptive features whereby they interact (Bot, 2014).

Learners' state-like motivation, known as characteristic motivational adaptation, interact and shapes their trait-like motivation in specific learning contexts (Dörnyei & Ryan, 2015). In classroom situations, this state-like motivation fluctuates over time and may eventually develop into relatively stable motivational patterns, highlighting the relationship

between state and trait motivation (Nitta, 2013). These fluctuations raise questions not only about how motivation changes but also about the components that constitute it. Gardner (2011) conceptualised motivation in terms of motivational intensity (effort), desire to learn the language (cognition), and attitudes toward learning the language (affect). Dörnyei (2009c) argues that cognition, motivation, and emotion are distinct yet dynamically interconnected subsystems. They differ in their experiential qualities: motivation is characterised by the sense of wanting or goal-directed behaviour, emotion by subjective affective experiences, such as happiness or sadness, and cognition by process of thoughts and knowledge representation (Buck, 2019). The dynamic interplay of motivation, cognition, and affect constitutes learners' experience in a classroom setting (Waninge, 2014). Such interactions may give rise to relatively stable and predictable patterns known as attractor states (Dörnyei, 2020). Sampson (2016) argued that investigating the emergence of attractor states offers a more holistic perspective on understanding motivation. Consequently, Dörnyei (2017) suggests that one of the most productive ways of studying L2 motivation is to identify the attractor states that emerge from the interaction of cognition, affect, and motivation.

The studies reviewed above collectively demonstrate that motivation emerges from the interaction of multiple components. However, understanding motivation as a complex system also raises questions about how relatively stable motivational patterns emerge despite continuous fluctuations in learners' experiences. The concept of attractor states provides a useful lens for addressing this issue because it explains how recurring motivational patterns can develop from the dynamic interplay of cognitive, affective, and motivational processes in classroom contexts. Taken together, those studies suggest that L2 motivation cannot be simply defined as either a trait or a state. It emerges from the continuous interactions between learners' relatively stable dispositions and their context-dependent experiences. These interactions result in patterns of both stability and variability over time, highlighting the complex and dynamic development of L2 motivation. While previous research has explored the dynamic nature of L2 motivation, little attention has been paid to how attractor states emerge in real classroom settings. Examining motivation as attractor states may therefore provide a more nuanced understanding of how in-class motivation fluctuates, self-organises, and develops over time.

Attractor states of student motivational dynamics

In EFL classrooms, varying levels of interest and engagement, as well as emotions such as anxiety and boredom indicated attractor states of student motivation (Ainley, 2012; Dörnyei & Ushioda, 2011; Waninge, 2014). Although interest and engagement are sometimes used interchangeably, they are conceptually distinct. Interest involves emotional responses like enjoyment and curiosity, as well as cognitive engagement with tasks (Dörnyei and Ushioda, 2011). In contrast, engagement refers to the effort students invest in learning activities (Fredricks et al., 2004), comprising affective, cognitive, and behavioural dimensions. Behavioural engagement is the observable expression of motivation (Dörnyei & Ushioda, 2021). Cognitive engagement reflects mental effort and persistence, while affective engagement involves emotional investment (Finn & Zimmer, 2012). Notably, students may

show interest without engaging behaviourally, highlighting the complexity of these interrelated states. The distinction between interest and engagement underscores the complexity of classroom motivation. From a CDST perspective, attractor states are therefore better understood as recurring patterns emerging from the interaction of multiple motivational, cognitive, affective, and contextual influences rather than as manifestations of any single motivational factor.

Other attractor states, including anxiety, boredom, and neutral attention, also influence motivational dynamics. While anxiety may impede learning, confusion can promote cognitive growth (D'Mello & Graesser, 2014). Boredom, more persistent than neutral attention, is marked by low interest and disengagement and is one of the most frequently reported states in classroom settings (Baker et al., 2010; Waninge, 2014). Neutral attention, characterised by emotional neutrality and cognitive balance, often appears early in the learning process and may evolve as students interact with the learning environment (Ainley, 2007). According to D'Mello and Graesser's (2014) model, emotional transitions typically follow a sequence: engagement, frustration, boredom, with each state influencing the next in a reciprocal process. This framework underscores the importance of examining how classroom motivation evolves through students' emotional experiences.

Dörnyei (2020) suggests that the CDST is a suitable framework for studying the complex and multifaceted nature of L2 motivation. As a complex system, L2 motivation undeniably changes over time, though periods of stability may be reached (Larsen-Freeman, 2014). Through dynamic and adaptive changes, L2 motivation undergoes gradual or sometimes sudden stability (Hiver & Al-Hoorie, 2016). In addition to attractor states, some other CDST-based notions, including initial conditions, feedback, self-organisation and attractor states, are proposed to explain the processes by which motivation changes and reaches a stage of stability (Hiver & Papi, 2019).

Attractor states, which reflect temporary stability and predictability within a dynamic system, are essential for understanding the unfolding of motivational patterns in L2 classrooms (Hiver, 2014b). Defined as the states into which a system tends to settle (Larsen-Freeman & Cameron, 2008), attractor states help explain how student motivation changes over time while displaying moments of stability (Waninge, 2014). Common examples include interest, flow of engagement, and the ideal L2 self, which is a relatively stable motivational state despite fluctuations (Dörnyei, 2017). These states are shaped by temporal and contextual factors (Dörnyei et al., 2014), and their impact varies across individuals depending on their width (range of possible states) and depth (stability) (Hiver, 2014a).

The CDST framework distinguishes types of attractor states into three categories: fixed-point, where learners consistently exhibit a stable behaviour such as reluctance to speak (Haken, 2006); limit-cycle, where motivation oscillates predictably, such as switching between L1 and L2 use (Hiver, 2014a); and strange attractor states, which reflect complex, non-repeating motivational patterns, such as fluctuating efforts to achieve the ideal L2 self (Hiver & Al-Hoorie, 2020). Together, these concepts highlight that motivational development is characterised by both stability and variability, as learners' motivational

systems may settle into recurring patterns while remaining subject to contextual influences and change over time.

METHOD

Research Design and Context

This study adopted a qualitative multiple-case study design to investigate the motivational dynamics of the EFL students in classroom contexts (Yin, 2018). A multiple-case design enabled the exploration of motivational dynamics across diverse instructional settings while identifying both common and context-specific patterns. The cases investigated in this study comprised three EFL classes from universities in different regions of Indonesia. To investigate these cases a multimethod data collection strategy, including questionnaires, classroom observations, and semi-structured interviews.

A questionnaire was distributed to collect data about students' general motivation and select focal participants representing different levels of motivation. Repeated classroom observations and interviews conducted over four consecutive weeks allowed the study to capture patterns of stability and variability of students' in-class motivation. Employing such data collection strategy is particularly suitable for CDST research, which emphasizes the context-dependent, temporal, and emergent nature of complex phenomena (Ushioda, 2019b). Conducting interviews right after classroom observation was established to enhance ecological validity (Henry, 2014a). Ensuring ecological validity means considering the actual learning experiences and situations students encounter in real classroom settings (Dörnyei et al., 2015).

Participants

This study examined individual students' motivational dynamics in various EFL classroom settings within Indonesian tertiary education. L2 learning contexts differ due to sociocultural practices, institutional influences, and the forms of social interactions (Lantolf & Beckett, 2009). To reflect this diversity, data were collected from three universities located in different regions of Indonesia, including Java, Sulawesi, and Nusa Tenggara. The English courses studied, such as English proficiency test preparation and compulsory grammar classes, were selected to address gaps in the literature by exploring potential differences in student motivation across course types. These classes varied by location, academic major, and year of study, with course selection aligned with each context.

Table 1

The descriptions of research participants

Descriptions	Class A	Class B	Class C
Number of participants	15	18	18
Year	Year 1	Year 3	Year 2
Majors	Mathematics Education	Accountancy	English Language Teaching (ELT)
Subjects	General English	English Proficiency Program	Advanced English Grammar
Number of lessons within one semester	16 lessons	36 lessons (30 minutes each)	16 lessons

Time of the class (schedule)	Not fixed	Every Thursday	Every Tuesday
Teaching modes	• Face-to-face • Google Meet • WhatsApp Group Chat	• Facebook Group Page Chat • Google Meet • WhatsApp Group Chat	• Google Meet • WhatsApp Group Chat

Class A consisted of first-year mathematics education students who received English instruction exclusively online during pandemic via Google Meet, WhatsApp, and Facebook. Next, Class B consisted of third-year accountancy students enrolled in a non-credit English-proficiency preparation course required for graduation, who attended tutorials via Google Meet. Meanwhile, Class C comprised second-year English majors studying advanced grammar, with instruction delivered through WhatsApp group discussions. Variations in course type, instructional mode, and student-teacher familiarity illustrate the complexity of EFL learning environments in Indonesian higher education, where English is a compulsory subject across all disciplines under national education policy.

Data Collection

Data collection began after obtaining approval from the participants' institutions. To protect confidentiality, all participants were assigned pseudonyms. All participants were provided with information about the study's purpose, procedures, and ethical considerations. Participation was voluntary, and informed consent was obtained prior to data collection. Participants were informed of their right to withdraw from the study at any stage without penalty. Multiple research instruments were employed, beginning with pre-class interviews, followed by motivation questionnaires administered with students' consent. Focal students were then selected for interviews (see Table 3). Each class was observed across four lessons, with post-class interviews conducted after each session. The following section outlines the research instruments and procedures in greater detail.

Motivational Questionnaires

Online motivational questionnaires adapted from Ryan (2009) were distributed to measure general motivation. This questionnaire covered closed-ended five-point Likert scale items covering the ideal L2 self, instrumentality, international contact, and intended learning effort, as well as a few open-ended questions. Students' general motivation score was calculated by averaging their responses. Within each class, their scores were then ranked by motivation score and classified into the High Motivation Group (HMG) or the Low Motivation Group (LMG) based on whether their score fell above or below the class mean. The mean scores were 4.17 for Class A, 4.47 for Class B, and 4.65 for Class C. Two students with the lowest scores in the LMG and one student with the highest score in the HMG were selected as focal students for subsequent interviews. The classification of students into the High Motivation Group (HMG) and Low Motivation Group (LMG) was intended to capture variation in motivational dispositions and to facilitate comparisons between learners with differing levels of general motivation. Selecting focal students from both groups enabled the study to examine how broader motivational orientations shaped in-class motivational

dynamics and the emergence of motivational attractor states across different learning contexts.

Classroom Observations

During observations, the researcher noted classroom interactions, events, and focal students' behaviours to inform post-class interviews, although these notes were not included in the formal data analysis. Only one lesson was conducted face-to-face, while the others were delivered online through various teaching platforms.

Semi-Structured Interviews

Semi-structured interviews were conducted in two phases. Pre-class interviews explored focal students' prior English learning experiences and aspirations. Following each classroom observation, post-class interviews examined students' recent learning experiences and specific classroom events. These interviews were conducted within a few days of each observation to ensure accurate recall. All interviews were conducted individually via Zoom or WhatsApp in English or Bahasa Indonesia, according to participants' preferences.

Data Analysis

The data analysis aimed to identify general motivation levels, explore in-class motivation patterns, and determine factors influencing in-class motivation. General motivation data helped classify students into HMG and LMG and examined how general motivation affected focal students' classroom motivation. Both quantitative and qualitative methods were used. Quantitative analysis involved all students' responses to motivational questionnaires and post-class surveys. Reliability tests showed good internal consistency (Cronbach's alpha > 0.80).

Table 2

The reliability test results for the questionnaire

Variables Measured	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Intended Learning Effort	0.84	0.84
Ideal L2 Self	0.856	0.866
Instrumentality	0.826	0.822
International Contacts	0.836	0.836

Qualitative analysis focused on pre- and post-class interviews with teachers and focal students. Interviews were transcribed verbatim, and non-English responses were translated. Transcripts were coded and categorised using NVivo 20, following a thematic analysis process. Initial codes based on L2 motivation concepts, such as ideal L2 self and instrumental motivation, were refined into themes. For in-class motivation, themes like anxiety, engagement, and interest were examined. Concepts from CDST, such as attractor states and emergence, helped explain motivational dynamics and interactions over time.

FINDINGS

Students' General Motivation

Analysis of the motivational questionnaires revealed both similarities and differences across the three classes. Overall, the students reported positive perceptions of their ideal L2 self, instrumentality, and international contact, although intended learning effort received comparatively lower ratings. Speaking English was identified as a common source of anxiety across all classes. Based on the questionnaire results, students were classified into HMG and LMG, from which focal participants for the qualitative phase were selected.

Table 3

The profiles of focal participants

Participants	Class	Motivation Group	Year in Study	Age	Formal EFL Learning (in Years)	Prior Educational Background
YN	Class A	HMG	First	17	8	Urban schooling
LL	Class A	LMG	First	17	6	Rural schooling
ST	Class B	LMG	Third	19	13	Rural and urban schooling
NT	Class B	HMG	Third	19	15	Urban schooling
OG	Class B	LMG	Third	19	18	Urban schooling
JN	Class C	HMG	Second	18	10	Urban schooling
AG	Class C	LMG	Second	18	7	Rural schooling
IR	Class C	LMG	Second	19	7	Rural schooling

Note: All the names are pseudonyms

From each class, two students with the lowest scores and one student with the highest score were invited to participate in the interview sessions. However, one LMG student from Class A withdrew from the study. Consequently, eight students in total, comprising five LMG students and three HMG students, participated in the interviews.

The results of pre-class interviews in Class A indicate clear contrasts in English learning backgrounds and motivational dispositions. LL had significantly less formal English education than YN. LL's schools, located in remote areas, lacked qualified English teachers and adequate resources. She described her learning experience as "not too formal," marked by limited exposure to structured English instruction. In junior high school, she focused on basic grammar and translation, with more structured writing tasks introduced in senior high school. LL expressed frustration with the lack of quality instruction and facilities. She also reported feeling out of place when she began university, perceiving her classmates as far more proficient due to their better educational backgrounds. LL added, "I felt that my classmates must already be 'wow'... they came from schools that had internet access... our teachers weren't that experienced... learning English at university is too difficult."

In contrast, YN reported a positive and enriching English learning experience from an early age. She was exposed to English at young age and took the initiative to improve her skills, including enrolling in private English courses. She stated "...when I talk, I feel like a cool person. I joined an English course... if you used Bahasa, you would get a punishment,"

highlighting her *ought-to* and *ideal L2 self*. She also showed efforts in initiating English conversations, joining a debate competition, and persisting in self-study. Describing herself as ambitious, she stated, “I am an ambitious person... when I didn’t answer a question correctly, I am so mad at myself” reflects her intrinsic motivation and internalised goals, further aligning with concepts of the ideal L2 self.

For those in Class B, ST, OG, and NT reflected on their English learning trajectory from early education to the present, offering insights into their motivation and engagement. ST described a positive early experience with English, particularly during her elementary years in an urban setting where she took computer courses. These early exposures familiarised her with English vocabulary, giving her a sense of advantage when she later moved to a rural school for junior high. She recalled feeling confident and enthusiastic when completing English tasks in her new environment. This sense of competence likely enhanced her motivation to learn the English language. However, at university, she found the current English course more challenging than previous experiences and attributed this to the long gap in formal English study. She stated, “I only learned from movies and songs... but with this one, I just can’t,” noting her engagement with English media informally, but remain struggling with academic English tasks.

As for OG, she began learning English in kindergarten and continued through tutoring and formal classes up to university. She reported wanting to speak English well like a friend of hers but admitted to putting minimal effort due to competing priorities, especially extracurricular activities. She also described a decline in her engagement with over time. Likewise, NT’s exposure to English began early, but her journey was marked by persistent challenges. She found English speaking difficult and recalled her elementary school experience with dictation exercises as particularly frustrating: “We hear something, we’re sure it’s the answer, but it turns out wrong... It’s kind of difficult.” This sense of difficulty persisted into her current course contributing to her lack of willingness to make efforts.

Although focal students in Class C shared the aspiration of becoming English teachers, interviews revealed diverse English learning experiences and motivational orientations among them. In this case, JN reported that her English learning journey in primary school initially began with minimum interest and engagement. Reflecting on her experience, she admitted that her English proficiency remained low despite a decade of study. She also reported her minimal practice and decreased motivation during her current online learning, and added that her curiosity in the class subject was often overshadowed by laziness. She acknowledged that her learning was a curriculum requirement and pointed out her limited English knowledge. She added, “Especially now with online classes, and, um, I’m the type of person who tries to be curious, but sometimes laziness comes into play. That’s why up to now, I haven’t really mastered it.”

AG reported actively participated in learning activities and completing all her assignments. She also acknowledged that work commitments and other responsibilities often interfered with her studies. Overall, she referred to classroom expectations, the teacher’s structured teaching approach and assessment requirement when discussing her learning experience. Similarly, Iren consistently tried to complete assignments and studied

independently in her free time. She reported feeling bored and facing technical difficulties during the online classes. She emphasised a preference for self-directed learning over external rewards, stating, “I just like to study by myself in my class and in my home.” She also recalled avoiding English classes in junior high school due to her dislike for the subject, which led to long-term difficulties. During the interview, IR described herself as “bad in English” and “foolish.”

Attractor States of Students’ In-class Motivation

Students’ in-class motivational dynamics were examined through the post-class interview conducted over the four-week instructional period. Analysis of the interview data identified six recurring motivational states, including engagement, interest, neutral attention, boredom, anxiety, and confusion. These states are utilised to describe motivational patterns observed across the focal students.

Table 4

Attractor states of student motivation during the lessons

Student	Class	Group	Attractor states*					
			E	I	NA	B	C	A
YN	A	HMG	1,2,3	1,2		3	2	4
OG	B		1,2,3,4	1	2			
JN	C		1,2,3,4				3	3
LL	A	LMG	3	1,3	1		1	2
ST	B		1,4	2,4			3,4	2,4
NT	B			4	3			2,3
AG	C		2,4	1			1,4	1,3
IR	C		1,3		2,4	2		3

Note. *1= Lesson 1 2= Lesson 2 3= Lesson 3 4= Lesson 4

E= Engagement

I=Interest

NA=Neutral Attention

B=Boredom

C=Confusion

Anxiety=A

This table organises students according to their general motivation levels, represented by HMG and LMG. The table shows that HMG students experienced engagement more consistently than LMG students. In contrast, LMG students displayed a wider range of motivational states, including, engagement, interest, anxiety and confusion. Some exceptions were also observed, as highly motivated learners occasionally experienced negative states, while less motivated students sometimes demonstrated interest and active participation. As shown in Figure 1, YN, OG, JN, and NT experienced a narrower range of motivational states across the four lessons.

Figure 1

Stability stage within motivational dynamics

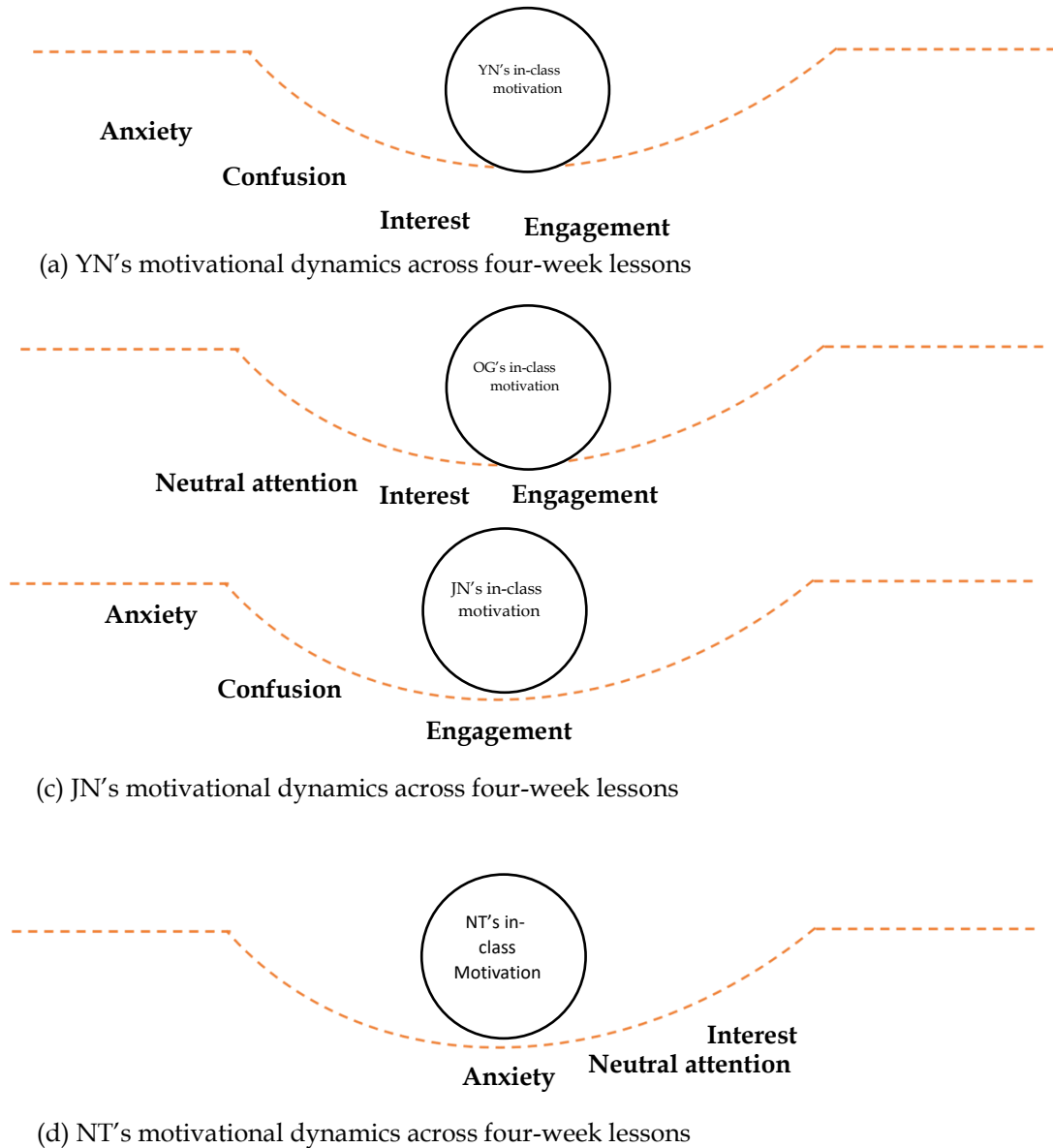


Figure 1 above shows a limited range of motivational states compared with other participants. Engagement was the most frequently observed state for OG and JN across the lessons. YN experienced engagement, interest, confusion, and anxiety, whereas NT's motivational states mainly involved interest and anxiety. In contrast, LL, ST, AG, and IR exhibited a more variable states, with more frequent shifts between lessons, as illustrated in Figure 2 below. For example, IR's sudden increased engagement in Lesson C1 followed encouragement from a mentor, acting as an external trigger.

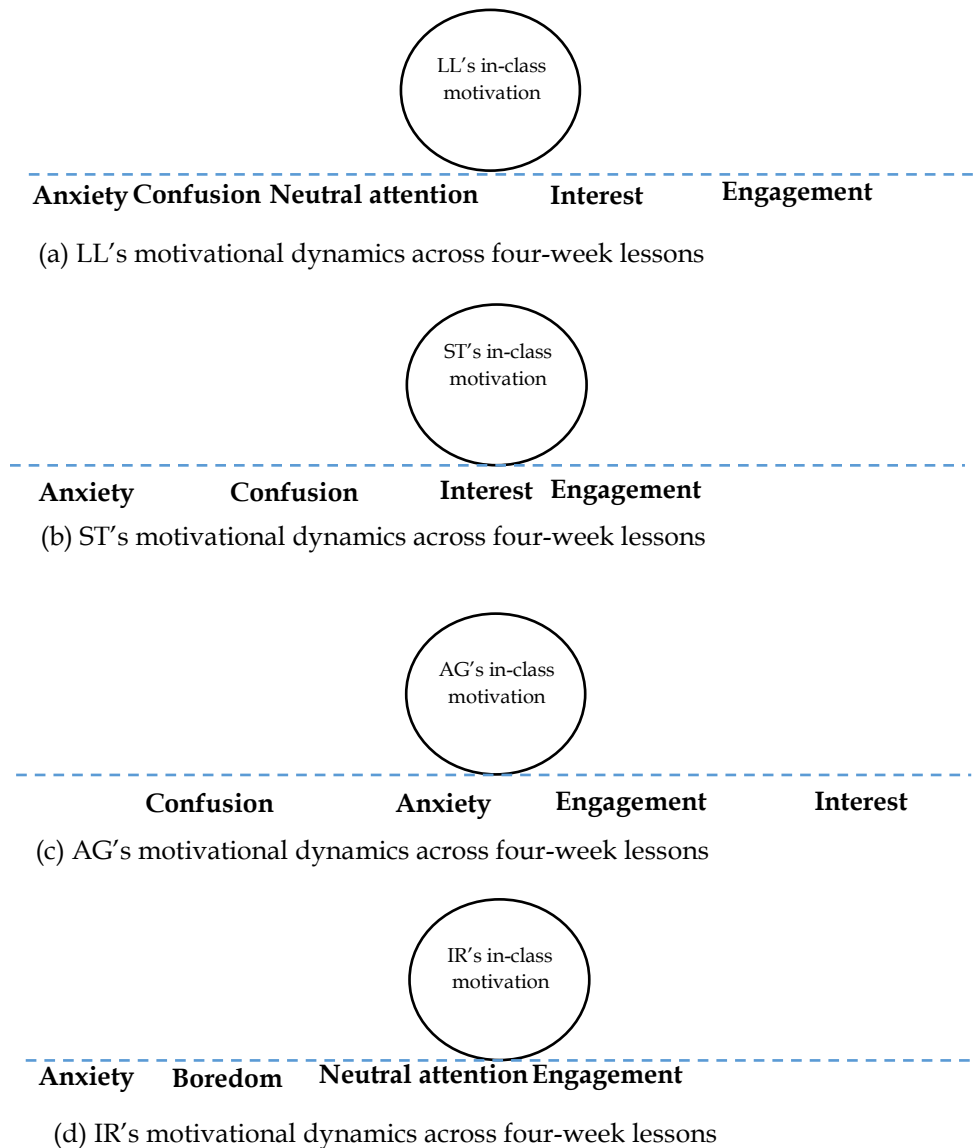
Figure 2*Variability stage within motivational dynamics*

Figure 2 above presents motivational states of LL, ST, AG, and IR across the four-week period. Their in-class motivation showed more frequent changes across diverse states compared with those students shown in Figure 1. Neutral attention, anxiety, and confusion were frequently observed, although interest and engagement were also occasionally reported. For example, LL experienced anxiety and confusion during Lessons A1 and A2, followed by interest and engagement in Lesson A3. ST showed some engagement in Lessons B1 and B2, while AG and IR also showed engagement at least once during the four weeks. Overall, although these students displayed different motivational trajectories, some common patterns were observed and will be discussed further in the following section.

DISCUSSION

General Motivation as an Initial Condition

The findings indicate that students' general motivation functioned as an important initial condition shaping students' in-class motivational dynamics. Although both HMG and LMG students experienced positive and negative motivational states, students with higher levels of general motivation tended to display more consistent engagement. Meanwhile, students with lower motivation demonstrated a broader range of motivational states. These findings highlight that learners' motivational dispositions play a crucial role in influencing subsequent in-class motivational dynamics during the EFL lessons.

From CDST perspectives, initial conditions influence the subsequent development of complex systems, including motivational systems (Bot et al., 2007; Verspoor, 2014). The present findings suggest that learners' general motivation tended to shape, but did not determine, their in-class motivation. However, the presence of both positive and negative motivational states across HMG and LMG students suggests that general motivation alone cannot fully account for learners' in-class motivational trajectories. Rather, motivation emerged through the dynamic interaction of learner-internal and contextual factors. The findings support Verspoor's (2014) argument that it is impossible to accurately predict motivational changes in real-life settings because of the complex and adaptive nature of students' motivational systems. The findings also broadly support Chan et al. (2014), who demonstrated that learners with different motivational profiles may have different motivational trajectories. However, the current study further confirms that general motivation does not function as a single predictor of in-class motivation. Instead, it emerged through the interaction of learners' experiences and contextual influences, resulting in different motivational patterns over time.

Formation of Attractor States

The findings revealed two broad patterns in students' in-class motivational dynamics, i.e., stability and variability. As shown in Figures 1 and 2, some students repeatedly return to a limited number of motivational states, whereas others experienced more frequent shifts across different states. From a CDST perspective, these recurring patterns can be interpreted as attractor states that emerged through learners' ongoing interactions with classroom experiences (Waninge, 2014). In the stability stage, in-class motivation tended to settle into specific attractor states, forming attractor basins within the motivational landscape, as evident among the cases of OG, JN, YN, and NT. Frequent recurrence of certain attractor states indicates a deeper basin and greater stability (Hiver, 2014a). For instance, OG and JN consistently engaged actively throughout the four-week lessons, suggesting deeper and more stable attractor basins. Their motivation appears to function as a fixed-point attractor, settling predictably into active engagement despite occasional shifts to confusion or anxiety. In contrast, NT's motivation fluctuates periodically between interest and anxiety, reflecting a limit-cycle attractor, which is a repeated cycle between states. These findings indicate that the attractor states of in-class motivation generally settle in specific patterns, depending on learners' experiences in each lesson.

In contrast, the pattern shown in Figure 2 indicates a higher degree of variability in learners' motivational systems, as evident in LL, ST, AG, and IR. Their motivation moved across a broader range of motivational states and showed less evidence of repeatedly returning to a specific state. From a CDST perspective, this variability reflects a motivational landscape that remains more sensitive contextual influences and shifts frequently, without settling into specific patterns.

These findings support the CDST views that motivation systems self-organise over time through repeated interactions of learner-internal and contextual factors. Additionally, stability does not necessarily mean positive behaviors, nor was variability inherently associated with negative learning attitude. The dynamics of in-class motivation simply indicates learners' developmental stages in response to the shifts in their internal psychological factors or the external environmental stimuli. In line with Waninge et al. (2014), these findings highlight the dynamic and non-linear nature of L2 motivation and demonstrate how attractor states emerge through continuous classroom experiences.

Motivational Narratives

These findings revealed some recurring motivational transitions, particularly between interest and engagement, confusion and engagement or anxiety, as well as neutral attention and boredom. Interest often co-occurred with active engagement, although the two states remained conceptually distinct but related motivational states. While interest reflected curiosity and positive emotional involvement, engagement was associated with observable effort in learning tasks (Appleton et al., 2006; Finn & Zimmer, 2012; Waninge, 2014). The findings demonstrate that learners with higher general motivation were more likely to transform interest into sustained engagement through the use of learning strategies and goal-directed behavior. In contrast, those with lower general motivation often relied heavily on external factors like teachers and peers and positive classroom experiences to maintain behavioral engagement. These patterns suggest that transitions between motivational states emerged from interactions among cognitive, emotional, and contextual factors. (Reschly & Christenson, 2012).

The findings of this study also highlight how students with high motivation overcame confusion and transitioned to active engagement by applying learning strategies or seeking help. In contrast, students with low motivation often struggled to resolve confusion, which could escalate into anxiety due to a positive feedback loop amplifying the negative emotions (Larsen-Freeman, 2014). The findings support the model of affective states by D'Mello and Graesser (2014) that the ability to move from confusion to engagement depends largely on motivation and cognitive engagement. Similarly, neutral attention emerged as a transitional state that could shift positively toward engagement or negatively toward boredom depending on the level of motivation and cognitive engagement. These patterns suggest that motivational dynamics are shaped by ongoing interactions of cognition, emotion, and contextual influences, reflecting the self-organizing nature of motivational systems viewed from CDST perspectives (Hiver, 2014a; Larsen-Freeman, 2014).

Aligned with the findings of previous studies (Şimşek & Dörnyei, 2017; Waninge, 2014), the present study highlights the important role of students' narratives in shaping motivational dynamics. Consistent with Wong and Vallacher (2018), learners' interpretations of their experiences are closely linked to motivation. Students drew on self-beliefs such as self-esteem, self-efficacy, and future L2 self-images when making sense of classroom experiences (Mercer, 2011). Building on the previous research, the present study demonstrates how motivational narratives not only reflect learners' motivational experiences but also influence the emergence and dynamics of in-class motivational states. In doing so, the findings extend Dörnyei and Ryan's (2015) proposition by showing how motivational narratives function as a core mechanism through which learners make sense of the complex interplay between their motivational adaptations and learning experiences within in EFL classrooms.

Theoretical Contributions

The present study contributes to CDST-oriented research on L2 motivation by highlighting how learners' in-class motivation emerges from the interaction among general motivation, narratives and classroom experiences. Rather than functioning as a determinant of learners' behaviors, general motivation can be viewed as an initial condition that shaped learners' motivational responses to classroom events. However, motivational development remained dynamics and difficult to predict due to the influences of both learner-internal and contextual factors.

Figure 3

A landscape of motivational dynamics

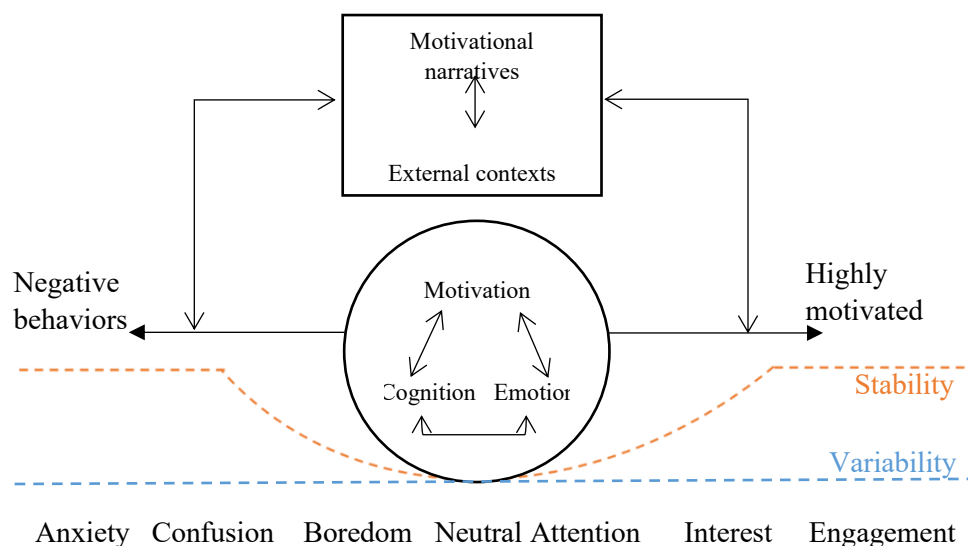


Figure 3 illustrates the dynamic process in which in-class motivation emerged through continuous interaction of motivation, cognition, and emotion. The findings revealed that students with similar motivational dispositions could experience different motivational trajectories, while learners with different motivational dispositions could demonstrate

similar motivational patterns. These findings suggest that in-class motivation cannot be solely explained by learners' general motivation but should be seen as a dynamic interplay of multiple motivational components and unfolding classroom experiences.

Building on CDST research (Hiver, 2014a; Waninge, 2014), the present study extends the current understanding of L2 motivational dynamics by identifying the complementary roles of general motivation and motivational narratives in the emergence of attractor states in EFL classrooms. The findings suggest that students' motivational narratives, grounded in learners' self-beliefs, shape how they interpret and make sense of their classroom experiences. These interpretations, in turn, influence the development of motivational stability and variability over time. Overall, this study provides a more comprehensive account of motivational dynamics in EFL classrooms and contributes to the growing body of research that conceptualises L2 motivation as a complex and dynamic system.

Pedagogical implications

The findings suggest that teachers can foster positive learning behaviours and active participations by creating classroom environments that support both emotional and cognitive engagement. Providing constructive feedback, motivating tasks, and opportunities for meaningful participation may stimulate learners' interest, maintain their engagement, reduce levels of boredom or anxiety, and help them overcome confusion. The findings also reveal that learners with lower levels of general motivation were more sensitive to classroom influences. Thus, clear instructions, teacher scaffolding, and positive learning atmosphere are required to maintain stronger in-class motivation. From a CDST perspective, although motivation is inherently dynamic, EFL teachers can play an important role facilitating classroom conditions that support more positive motivational trajectories over time.

CONCLUSION

This study examined the attractor states and traced motivational dynamics of focal students over four weeks of EFL instruction. The findings identified six attractor states: engagement, interest, neutral attention, boredom, anxiety, and confusion. Students' motivation shifted dynamically among these states, forming unique trajectories shaped by the interaction of motivation, cognition, and emotion. While students with high motivation demonstrated more stable motivational patterns, those with lower motivation exhibited greater variability in response to classroom contexts. Three key transition patterns emerged: interest to engagement, confusion to either engagement or anxiety, and neutral attention to either engagement or boredom. These transitions were strongly influenced by students' cognitive engagement and learning strategies. The findings further suggest that motivational narratives play an important role in shaping how learners understand and respond to classroom contexts over time. The study contributes to L2 motivation research by demonstrating the value of CDST perspectives and the concept of attractor states for understanding the stability and variability of motivation in Indonesian EFL classrooms. The study is limited by its focus on Indonesian EFL learners, a small sample size, and reliance on self-reported data. Future research could adopt more comprehensive and finer-grained methods to capture motivational dynamics in greater detail.

ACKNOWLEDGMENT

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Research Article

Conversational AI in Informal EFL Speaking Practice: Learners' Experiences and Pedagogical Implications

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ABSTRACT

This study investigates learners' experiences and the pedagogical implications of using ChatGPT Voice for informal English as a Foreign Language (EFL) speaking practice. Although conversational AI has attracted growing attention in language learning less is known about learners' experiences and the pedagogical implications of using ChatGPT Voice for informal EFL speaking practice. Employing a concurrent embedded mixed-methods design, data were collected from 302 undergraduate EFL learners from universities in Indonesia using a 26-item Likert-scale questionnaire and two open-ended questions. The findings indicate that learners generally perceived ChatGPT Voice as supporting confidence, motivation, fluency, pronunciation, and self-regulated learning by providing a supportive environment for informal speaking practice. However, technical limitations and self-management challenges may constrain optimal engagement. The study contributes to the growing literature on AI-assisted language learning by providing evidence of learners' experiences with ChatGPT Voice in informal speaking practice and highlighting its pedagogical implications for supporting learner autonomy.

Keywords: *ChatGPT Voice, Conversational AI, Informal EFL speaking, Learner experiences, Pedagogical implications, Self-regulated learning*

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INTRODUCTION

Conversational technologies have become an increasingly significant part of language education, particularly within EFL context where opportunities for actual spoken interaction outside the classroom are limited. Speaking competence is widely recognized as one of the most challenging skills for EFL learners to develop, due to its reliance on real-time processing, interactional feedback, and fluent production (Kafabih et al., 2026; Nazri, 2025). Traditional classroom practices often provide insufficient time for each learner to engage in meaningful spoken communication, leading to unequal practice opportunities and persistent learner anxiety (Kafabih et al., 2025; Meyer, 2000). At the same time, learners frequently cite a lack of accessible practice partners and contexts as a barrier to improving their oral proficiency (Hijra et al., 2024). These challenges underscore the need for technologies that can extend speaking practice opportunities beyond conventional classroom boundaries.

Research in the last decade has investigated the educational value of interactive conversational systems as tools for language learning. Dialogue systems and chat interfaces designed for language practice have been shown to provide learners with low-anxiety environments in which they can experiment with vocabulary and grammatical structures, receive corrective feedback, and build confidence (Ding & Yusof, 2025; Kamelabad et al., 2026; Wiboolyasarini et al., 2025). Such tools are theorized to engage learners in output-driven activity that promotes noticing and uptake of language forms, in line with Swain's output hypothesis (Swain, 2005). Empirical studies examining technology-mediated speaking practice suggest that learners can achieve measurable gains in fluency and accuracy when provided with structured opportunities to interact repeatedly (Bhar, 2026). Moreover, interactive conversational environments appear to support affective factors such as motivation and willingness to communicate, which are crucial for sustained engagement in oral communication tasks (Huang & Li, 2026; Qiu et al., 2025). Overall, previous studies suggest that conversational AI can support both linguistic development and learners' affective engagement. However, most of these studies have examined AI use within structured instructional settings, leaving its role in informal, self-directed speaking practice less well understood.

"This study investigates learners' experiences using conversational tools in informal EFL speaking practice and the pedagogical implications of their use."

Despite this growing body of research, much of the literature has focused on integrating conversational tools within formal classroom instruction or controlled experimental settings. For example, several studies have examined the use of chat systems for task-based speaking practice in blended learning courses, showing positive effects on linguistic output when integrated into teacher-designed sequences (Matiienko-Silnytska et al., 2025; Meng & Feng, 2019). However, less is known about how learners use conversational technologies in informal speaking practice, outside of structured lessons and without direct teacher facilitation. Informal practice contexts are particularly important because they reflect the autonomous engagement that many adults pursue when seeking to

improve their language skills independently (Benson, 2011). In these contexts, learners must self-regulate their study, set goals, monitor progress, and maintain motivation without continuous external support. Research targeting autonomous and informal use is therefore critical to understanding how technology supports not just performance but self-directed learning processes in speaking.

Although previous studies have demonstrated that Conversational AI can improve speaking performance, confidence, and willingness to communicate (Ding & Yusof, 2025; Huang & Li, 2026; Wiboolyasarini et al., 2025), much of this evidence has been generated within teacher-mediated classroom instruction or controlled experimental settings. Consequently, limited attention has been given to learners' experiences and the pedagogical implications of AI-mediated informal speaking practice. While prior studies have primarily focused on measurable performance outcomes such as accuracy or fluency, they provide little insight into how learners perceive their engagement (Mercer & Dörnyei, 2020), manage learning autonomously (Benson, 2011), and adapt strategies in self-directed learning (Oxford, 2016; Zimmerman, 2002). Investigating these aspects is critical for understanding not only how AI tools influence oral skill development but also how they support learner autonomy, motivation, and self-regulation in informal learning environments (Dizon et al., 2025; Kafabih et al., 2026; Mohebbi, 2025).

Despite the growing interest in conversational AI for language learning, there is still limited evidence explaining how learners experience these technologies when they are used independently outside formal instruction and what pedagogical insights can be drawn from such experiences. Addressing this issue is important because informal learning represents an increasingly common way for university students to develop their speaking skills beyond the classroom, yet it remains underexplored in the current literature. This study specifically examines ChatGPT Voice as a conversational AI tool for informal EFL speaking practice. Its focus is twofold: to explore learners' experiences using this technology and to identify the pedagogical implications arising from its integration into informal practice. By understanding learners' perspectives, including their engagement, motivation, and self-regulatory behaviors, this research provides insights into how conversational AI can complement traditional instruction and facilitate autonomous, self-directed language learning (Wiboolyasarini et al., 2025).

The significance of this study lies in its contribution to both theoretical and practical knowledge. The study advances understanding of learner experiences in informal speaking practice, demonstrating how AI tools can foster self-directed learning and metacognitive engagement. Practically, the findings offer guidance for educators seeking to integrate conversational AI into university EFL programs, providing learners with flexible opportunities to practice oral communication and reflective strategies. These insights can inform curriculum design and instructional strategies aimed at enhancing learners' confidence, fluency, and engagement in authentic, learner-centered contexts.

Finally, by focusing on university EFL learners' informal interactions with ChatGPT Voice, this study addresses an important gap in applied linguistics research related to the

use of conversational AI in self-directed speaking practice. The investigation considers both cognitive and affective dimensions of language learning to examine how AI-mediated practice supports autonomous engagement, oral skill development, and learner motivation. The findings may inform future research and offer practical insight into how conversational AI can be incorporated into higher education to support learner-centered speaking practice and autonomous language learning. To address these objectives, the present study was guided by the following research questions:

- (1) What are EFL learners' experiences of using ChatGPT Voice for informal English-speaking practice?
- (2) What pedagogical implications emerge from EFL learners' use of ChatGPT Voice for informal English-speaking practice?

LITERATURE REVIEW

Informal Speaking Practice in EFL Contexts

Speaking proficiency is widely recognized as one of the most challenging skills for learners of EFL. Developing oral competence requires learners to produce language accurately, manage real-time interaction, and negotiate meaning with interlocutors (Zheng, 2019). Traditional classroom settings often provide limited opportunities for extended spoken interaction due to large class sizes, unequal participation, and time constraints (Halim et al., 2025). These limitations restrict learners' ability to improve fluency, vocabulary, and pragmatic competence.

From the perspective of learner autonomy, informal speaking practice extends language learning beyond teacher-directed instruction by allowing learners to determine when, how, and with whom they practice (Benson, 2011). This form of learning also requires learners to regulate their own goals, monitor their progress, and evaluate their performance, reflecting key principles of self-regulated learning (Oxford, 2016; Zimmerman, 2002). Consequently, informal speaking practice should be viewed not only as an opportunity for additional language exposure but also as a context in which learners develop greater responsibility for their own learning.

Informal speaking practice, characterized by self-initiated or unscripted dialogue, has been shown to reduce learner anxiety and increase willingness to communicate (Benson, 2011; Szyszka & Lintunen, 2026). In these informal contexts, learners can experiment with language forms and test communicative strategies without the pressure of formal assessment. Studies also suggest that informal speaking opportunities promote learner autonomy, as learners take more responsibility for engaging with the language and regulating their own practice (Andriani & Sujarwati, 2025; Chan, 2019). Despite these benefits, many EFL learners report limited access to authentic practice contexts, insufficient peer interaction, and low confidence in speaking (Kafabih et al., 2025). Addressing these limitations remains a critical concern for language educators seeking to support oral proficiency development.

Interactive Conversational Tools for Language Learning

Recent research has explored the role of interactive conversational tools in supporting EFL learners' speaking practice. These tools provide learners with opportunities for repeated oral production, simulated dialogue, and immediate feedback (Bhar, 2026; Ericsson & Johansson, 2023). Empirical studies indicate that learners who engage with such tools demonstrate improvements in fluency, vocabulary use, pronunciation, and overall speaking confidence (Alsalem, 2024; Grab, 2025). Interactive tools also create low-stakes environments that encourage learners to experiment with language, make errors, and refine output without fear of negative evaluation (Darmawansah & Hwang, 2024; Kafabih, 2025; Wiboolyasarini et al., 2025).

Although previous studies consistently report positive effects of conversational tools on speaking performance and learner confidence, most of this evidence has been generated in structured instructional settings. As a result, less attention has been paid to how learners experience these technologies during informal, self-directed speaking practice, where they are responsible for regulating their own learning. Existing research has also focused primarily on performance outcomes, providing comparatively limited understanding of learners' experiences, interaction strategies, and perceptions. Examining these aspects offers a more comprehensive understanding of both the opportunities and the pedagogical challenges associated with conversational AI in informal learning contexts.

Learner Perceptions and Pedagogical Implications

Learner perceptions significantly influence motivation, engagement, and learning strategies in speaking practice (Gallagher-Brett, 2007; Mutaat, 2022). Research demonstrates that learners' experiences with interactive tools impact their willingness to communicate and the effectiveness of self-directed practice (Behforouz & Al Ghaithi, 2024; Han et al., 2024; Qarani, 2024). Learners benefit from platforms that allow them to monitor progress, plan practice sessions, and regulate their speaking activities independently (Anggoro & Khasanah, 2022; Manso-Vázquez & Llamas-Nistal, 2015).

From a pedagogical perspective, the effectiveness of conversational technologies depends not only on their technical capabilities but also on how learners engage with them during the learning process. Learners' perceptions influence their willingness to participate, sustain practice, and make use of feedback, making these experiences an important consideration when integrating conversational AI into language instruction (Mercer & Dörnyei, 2020). Understanding learners' perspectives therefore provides a basis for designing pedagogical approaches that support both language development and learner autonomy.

Despite these benefits, challenges remain. Studies report variability in learner engagement, limitations in conversational responsiveness, and difficulties in maintaining natural dialogue over extended practice (Bartell, 2026). Additionally, system feedback may not always align with learners' communicative goals or interpret nuanced language,

highlighting potential limitations in pedagogical application (Jia et al., 2024; Shadiev & Feng, 2024). Understanding both the affordances and constraints of conversational tools is critical for educators to design instructional approaches that maximize learner autonomy and speaking development in informal contexts.

METHOD

Research Design and Context

This study employed a concurrent embedded mixed-methods design using a cross-sectional survey (Creswell & Creswell, 2022). Quantitative data served as the primary source of evidence, while qualitative data from open-ended questions were embedded to complement and enrich the quantitative findings. Data were collected simultaneously through a single point in time using an online questionnaire administered via Google Form, which included both quantitative and qualitative elements. The quantitative component consisted of 26 Likert-scale items measuring learners' experiences in informal speaking practice and the pedagogical implications of using interactive speaking tools, whereas the qualitative component consisted of two open-ended questions designed to provide deeper insights into participant's responses.

A cross-sectional survey was selected because it allows for the efficient collection of data from a relatively large sample, providing a snapshot of learners' experiences and perceptions at a specific point in time (Creswell & Creswell, 2022). This design is particularly appropriate for the research questions, as it facilitates examination of both measurable outcomes and learners' perspectives on pedagogical implications without requiring longitudinal tracking. The study was conducted in an EFL context at a higher education institution, where learners regularly engage in informal speaking practice outside formal classroom sessions. The institution encourages self-directed learning and provides access to interactive speaking platforms, creating a suitable environment for examining learners' informal practice.

Participants

Participants were undergraduate learners of EFL from universities in Indonesia. A purposive sampling strategy was employed to recruit participants who met the study's inclusion criteria. Participants were recruited through lecturers and student networks at various universities in Indonesia. Specifically, participants were required to (1) be active undergraduate learners, (2) actively engage in improving their English language skills, and (3) have prior experience using conversational AI for English speaking practice. A total of 302 learners participated, comprising 160 females and 142 males, aged 18 to 24 years. The participants were drawn from various academic departments, representing a diversity of backgrounds, and all had sufficient experience with English to participate meaningfully in informal speaking activities outside formal classroom instruction.

Ethical considerations were strictly observed. All participants were provided with information regarding the study's purpose, procedures, and voluntary nature of participation. Informed consent was obtained electronically prior to completing the

questionnaire, and participants were assured of the confidentiality and anonymity of their responses. Demographic information, including gender and age distribution, is summarized in Table 1, providing context for the sample characteristics and supporting the interpretation of both quantitative and qualitative findings.

Table 1
Participant Characteristics

Characteristic	Frequency (n)	Percentage (%)
Gender		
Female	160	53
Male	142	47
Age (years)		
18–20	150	49.7
21–24	152	50.3

Data Collection

Data were collected using a structured online questionnaire. The instrument consisted of 26 quantitative items on a 5-point Likert scale and two open-ended questions. The quantitative items were designed to measure learners' experiences and pedagogical implications, while the open-ended items provided additional insights into learners' perceptions.

The questionnaire adapted from previously validated instruments examining learners' experiences with conversational AI and AI-assisted language learning (Alsalem, 2024; Kang & Sung, 2024; Mudawy, 2025; Yanti & Damanik, 2026). Then, the questionnaire reviewed by two language teaching experts to ensure content validity. A pilot study with 30 participants was conducted to test comprehension and reliability. The pilot participants were excluded from the final sample. The instrument demonstrated good internal consistency in the pilot study (Cronbach's Alpha = 0.85), indicating that the items were reliably measuring the intended constructs. Minor revisions were made to item wording based on expert feedback. The final questionnaire was distributed online over a two-week period, and participants completed it independently during informal speaking sessions.

Data Analysis

Quantitative data from the main study (N = 302) were analyzed using SPSS 26. Descriptive statistics, including means and standard deviations, were calculated for each item. The internal consistency of the 26-item scale was assessed using Cronbach's Alpha, which yielded $\alpha = 0.918$, indicating excellent reliability for the collected data. Corrected item-total correlations were examined to ensure each item contributed appropriately to the scale. This analysis addressed RQ1 (learners' experiences) and RQ2 (pedagogical implications).

Qualitative data from the open-ended questions were analyzed using thematic analysis (Braun & Clarke, 2006). Responses were read repeatedly to identify codes, which were then grouped into themes representing benefits, challenges, and learners' strategies. Two independent coders reviewed the data to ensure consistency, and discrepancies were

resolved through discussion, establishing inter-coder reliability. The mixed-methods approach enabled triangulation of quantitative and qualitative findings, integrating numeric trends with learners' narratives to provide a comprehensive understanding of informal speaking practice experiences and pedagogical implications.

FINDINGS

This study investigated learners' experiences using ChatGPT Voice in informal EFL speaking practice and its pedagogical implications. The findings integrated quantitative data from 26 Likert-scale items with qualitative responses from two open-ended questions, triangulated to provide a comprehensive, in-depth, and academically rigorous picture of learners' perceptions, experiences, and challenges. The analysis emphasized descriptive statistics, variability (SD), response patterns, and the pedagogical and cognitive significance of each theme.

Learners' Experiences Using ChatGPT Voice

Items 1–10 focused on learners' personal experiences with ChatGPT Voice, including confidence, anxiety, comfort, language development, motivation, and enjoyment. The mean scores ranged from 3.53 to 4.11, indicating that learners generally found the tool helpful in enhancing informal speaking skills. Item 5, "ChatGPT Voice provides a comfortable environment for me to practice informal English speaking without judgment," scored the highest mean (4.11), highlighting learners' appreciation of a safe and non-judgmental space. Item 7, "I feel more fluent in English after using ChatGPT Voice for informal speaking practice," had the lowest mean (3.53), suggesting that fluency gains may require longer-term engagement.

Table 2
Descriptive Statistics for RQ1 Items (N = 302)

Item	Statement	Mean	Std. Deviation
1	Using ChatGPT Voice has improved my confidence in informal English-speaking practice.	3.72	0.914
2	Using ChatGPT Voice has helped me overcome hesitation and fear in informal speaking practice.	3.72	0.971
3	I feel at ease talking to ChatGPT Voice during informal English-speaking practice.	3.75	0.983
4	ChatGPT Voice has helped me practice informal English speaking in a convenient and accessible way.	3.99	0.963
5	ChatGPT Voice provides a comfortable environment for me to practice informal English speaking without judgment.	4.11	0.907
6	Interacting with ChatGPT Voice has enhanced my vocabulary and speaking skills in informal contexts.	3.80	0.864
7	I feel more fluent in English after using ChatGPT Voice for informal speaking practice.	3.53	0.891
8	ChatGPT Voice has broadened my understanding of colloquial and informal English expressions.	3.73	0.839

...continued

9	ChatGPT Voice has increased my motivation to practice informal English speaking regularly.	3.68	0.881
10	I enjoy the interactive nature of practicing informal English speaking with ChatGPT Voice.	3.74	0.916

The mean scores suggest that learners' experiences using ChatGPT Voice for informal English speaking practice. Learners responded most positively to items related to confidence, comfort, and accessibility, whereas perceived improvements in and fluency received comparatively lower ratings, although they remained positive overall. Qualitative responses echoed these patterns. Participants described ChatGPT Voice as a safe and accessible platform, which reduced hesitation and encouraged practice. One participant shared, "I feel freer and not judged if my speaking is incorrect, which increases my confidence compared to speaking with humans." Another noted, "It allows me to practice new expressions repeatedly and at my own pace, which I rarely get in class." Rather than emphasizing immediate gains in speaking ability, many learners valued the opportunity to practice without pressure and at their own pace.

The pattern across the survey and qualitative responses suggests that ChatGPT Voice was most helpful in lowering the emotional barriers often associated with speaking English. Feeling comfortable and free from judgment appeared to encourage learners to speak more willingly, creating more practice opportunities. Learners also perceived improvements in fluency and vocabulary, although these were viewed as developing gradually through continued use rather than as immediate outcomes of interacting with the tool.

Pedagogical Implications of ChatGPT Voice Use

Items 11–26 were analyzed to understand the pedagogical implications of ChatGPT Voice use in informal EFL speaking practice. Quantitative results show that mean scores ranged from 2.86 to 3.94, indicating that learners generally perceived the tool as beneficial, though some limitations were recognized. The highest mean was observed in item 22, "When I get confused, I repeat or ask ChatGPT Voice again until I understand," at 3.94, highlighting learners' engagement in self-directed monitoring and correction. Conversely, item 25, "I make a personal schedule to practice speaking with ChatGPT Voice regularly," had the lowest mean (2.86), suggesting that consistent self-management was challenging for some learners.

Analyzing the mean scores provides a nuanced understanding of the pedagogical value of ChatGPT Voice. Learners perceived that the tool was particularly effective in fostering monitoring and elaboration strategies, as seen in items 22 and 24. These high mean scores indicate that ChatGPT Voice encourages learners to actively engage in self-regulation, repeat responses when uncertain, and connect new knowledge to prior learning. Items related to limitations, technical challenges, and self-management scored lower, reflecting that some learners experienced obstacles in planning, maintaining schedules, and relying entirely on the AI for consistent practice.

Table 3*Descriptive Statistics for RQ2 Items (N = 302)*

Item	Statement	Mean	Std. Deviation
11	ChatGPT Voice has provided useful feedback on my informal English-speaking performance.	3.77	0.890
12	ChatGPT Voice accurately understands and responds to my spoken English during practice.	3.72	0.876
13	Sometimes ChatGPT Voice provides irrelevant or inaccurate feedback on our speaking.	3.39	0.954
14	I would recommend using ChatGPT Voice as a heutagogical tool for improving informal English-speaking skills.	3.76	0.912
15	I want ChatGPT Voice to be used regularly as part of my informal English-speaking practice.	3.64	0.939
16	I prefer using ChatGPT Voice over traditional methods for practicing speaking.	3.14	0.958
17	I encounter difficulties in sustaining dialogues with ChatGPT Voice during informal speaking practice.	3.14	0.901
18	ChatGPT Voice occasionally struggles to understand variations in my speech patterns.	3.52	0.957
19	I find that ChatGPT Voice lacks cultural or contextual understanding in conversations.	3.27	1.028
20	Speaking practice with ChatGPT Voice sometimes suffers from technical glitches in voice recognition or internet connectivity.	3.71	1.010
21	I imagine real-life speaking situations when practicing with ChatGPT Voice.	3.59	0.987
22	When I get confused, I repeat or ask ChatGPT Voice again until I understand.	3.94	0.872
23	I adjust my way of practicing depending on ChatGPT Voice's responses.	3.47	0.880
24	I connect new expressions from ChatGPT Voice with what I already know.	3.78	0.861
25	I make a personal schedule to practice speaking with ChatGPT Voice regularly.	2.86	1.092
26	I evaluate my own speaking progress after practicing with ChatGPT Voice.	3.54	0.895

As shown in Table 3, learners generally viewed ChatGPT Voice as a valuable resource for supporting independent speaking practice, although they also recognized several limitations. Learners responded most positively to items related to monitoring their understanding, repeating responses when necessary, and connecting new expressions with their existing knowledge. By contrast, maintaining a regular practice schedule received the lowest rating, suggesting that consistency remained difficult despite the accessibility of the tool. These patterns were reflected in the qualitative responses. One participant said, "I can practice anytime I want and focus on what I need to improve, which helps me take control of my learning." Another commented, "Sometimes the system does not understand my intended meaning, especially if my pronunciation is not clear." Rather than viewing ChatGPT Voice as a complete replacement for traditional learning, learners appeared to value it as a flexible resource that supported their individual learning needs while recognizing its practical limitations.

Looking across both survey results and participants' comments, ChatGPT voice appears to support several aspects of self-directed learning. Learners described using the tool to monitor their understanding, modify their speaking strategies, and build on what they had already learned. At the same time, the lower ratings for self-management and technical reliability suggest that access to conversational AI alone does not necessarily lead to consistent learning habits. Regular engagement still depends on learners' commitment to practice and their ability to manage their own learning. These findings point to the educational value of ChatGPT Voice beyond providing opportunities for conversation practice. The platform appears to encourage learners to take a more active role in monitoring and reflecting on their own learning, which is central to self-directed language development. At the same time, the findings suggest that its effectiveness is influenced by factors such as learners' consistency in practice and the reliability of technology. This highlights the importance of integrating conversational AI into broader learning activities, where learners can benefit from both independent practice and appropriate instructional support.

DISCUSSION

The findings of this study demonstrate that the integration of ChatGPT Voice into informal EFL speaking practice contributes substantially to learners' engagement, language performance, and self-regulated learning behaviors. Rather than merely reporting descriptive outcomes, the data reveal underlying processes by which AI-mediated practice influences learners' affective, cognitive, and metacognitive development. The prominence of confidence and comfort experienced by participants reflects a broader pattern reported in recent research on artificial intelligence in speaking instruction, which consistently identifies affective gains such as reduced anxiety and increased willingness to communicate as core benefits of AI-based interaction (Bhar, 2026). The psychologically safe environment provided by generative conversational systems appears to play a significant role in enabling learners to engage in oral practice more freely than they might in traditional classroom settings, supporting the argument that affective conditions are foundational to meaningful spoken language practice (Chen et al., 2025; Wiboolyasarini et al., 2025).

Beyond affective dimensions, the results highlight how ChatGPT Voice facilitates linguistic and cognitive engagement. Participants reported that repeated interaction allowed them to rehearse pronunciation and fluency in ways that resemble findings from studies on AI-based speech evaluation and natural language processing tools, which show positive effects on oral accuracy and performance when learners interact with voice-enabled AI systems (Tai, 2024; Zhang, 2026; Zhao, 2025). Although gains in vocabulary integration were less pronounced, this pattern aligns with research suggesting that AI tools are more immediately effective for phonological and fluency development while higher-order lexical transfer may require deliberate strategy and pedagogical scaffolding (Bhar, 2026; Rishatovna, 2025). These results suggest that while conversational AI supports multiple aspects of speaking, the cognitive demands associated with vocabulary retrieval and spontaneous use remain a challenge for learners, particularly in informal settings where structured input is minimized.

The pedagogical implications of using ChatGPT Voice are particularly significant. Learners' engagement in monitoring, strategy adjustment, and elaboration during ChatGPT Voice practice reflects a pattern of self-regulated learning behaviors that are consistent with heutagogical theory (Hase & Kenyon, 2000). High levels of self-directed practice mirror recent research on how learners employ AI tools to support autonomous learning, with studies reporting that ChatGPT is perceived as a useful resource for self-regulated engagement despite acknowledged drawbacks (Dizon et al., 2025; Kafabih et al., 2026). This study extends that research by showing that self-regulated behaviors such as repeating utterances until understanding and connecting new expressions to existing knowledge not only enhance linguistic performance but also develop learners' capacity for independent language management. Such findings contribute to theorizing how AI tools can scaffold metacognitive processes in language learning, suggesting that confidence, autonomy, and reflective engagement are not isolated outcomes but interdependent elements in AI-mediated practice.

At the same time, the study underscores practical limitations and contextual considerations that shape pedagogical effectiveness. Lower levels of self-management and challenges related to voice recognition or tool comprehension suggest that autonomous AI practice cannot fully replace guided instruction; rather, it should be integrated strategically within broader pedagogical designs. This perspective aligns with study of AI in EFL speaking instruction, which argue that AI is most effective when embedded within purposeful instructional frameworks that structure engagement and provide teacher support (Bhar, 2026; Fowlin et al., 2025). Technical constraints reported by learners, such as occasional misinterpretation or connectivity concerns, further reinforce the need for infrastructure support and digital literacy development to maximize the educational value of AI platforms.

The theoretical contributions of this study are multifaceted. First, by demonstrating that ChatGPT Voice supports both affective and cognitive dimensions of oral practice, the study provides empirical evidence for integrated models of AI-mediated language learning that connect emotional engagement, confidence, and skill development. This supports extant research suggesting that AI tools can foster both self-regulation and linguistic improvement (Aladini et al., 2025; Shi et al., 2025; Z. Zhang et al., 2025), while adding nuance to theoretical understandings of how psychological safety enables sustained practice. Second, by situating ChatGPT Voice within a framework of learner autonomy and self-determined engagement, the study extends current theory on technology-enhanced language learning by illustrating that autonomous practice can promote metacognitive monitoring and strategic adjustment, not just performance gains. This contributes to broader discussions on the role of AI in applied linguistics, particularly in informal and learner-centered contexts.

Practically, the study provides several implications for educators and curriculum designers. ChatGPT Voice can be utilized as a supplementary practice environment to enhance learner confidence, fluency, and self-directed learning. Training learners on how to use AI tools effectively, for example, structuring practice sessions, leveraging repetition for pronunciation, and reflecting on responses, can improve outcomes. Awareness of technical

limitations and potential inaccuracies is also essential, as researchers have pointed out that AI feedback, while often useful, may not always align with pedagogical accuracy unless guided by informed use (Alghannam, 2025; Lindsay et al., 2025; Naz & Robertson, 2024). Educators should therefore combine AI interaction with pedagogical scaffolding to maintain meaningful learning trajectories.

Despite its contributions, the study has limitations that suggest avenues for further research. The context-specific sample may limit generalizability, and the reliance on self-reported measures may introduce bias, as participants' perceptions may not fully reflect actual learning gains. Technological constraints, such as system misinterpretations or connectivity issues, may have affected engagement. Additionally, the cross-sectional design precludes assessment of long-term learning outcomes, indicating a need for longitudinal research to evaluate sustained effects of AI-mediated practice.

Based on the findings and these limitations, several recommendations emerge. Future research should examine the longitudinal effects of ChatGPT Voice on fluency, vocabulary retention, and learner autonomy, as well as compare AI-supported and traditional speaking practice to determine relative effectiveness. Educators are advised to integrate AI tools strategically, providing scaffolding for reflective and vocabulary-based activities while ensuring technical reliability. Emphasizing self-regulated learning strategies, including planning, monitoring, and evaluation, will allow learners to fully benefit from AI-supported informal EFL speaking practice and achieve sustainable improvement in oral proficiency.

CONCLUSION

This study explored EFL learners' experiences of using ChatGPT Voice for informal English-speaking practice and the pedagogical implications emerging from those experiences. The findings suggest that learners generally perceived ChatGPT Voice as a supportive environment for developing confidence, encouraging autonomous engagement, and facilitating regular speaking practice. This study contributes to research on AI-assisted language learning by providing evidence from learners' perspectives on conversational AI in informal speaking practice. It also extends current discussions on learner autonomy by illustrating how learners perceived ChatGPT Voice as supporting self-directed speaking practice beyond formal classroom settings. Nevertheless, the study is limited by its context-specific sample, reliance on self-reported measures, and cross-sectional design, which may affect generalizability and the ability to capture long-term outcomes. Future research should explore longitudinal effects of AI-mediated practice, investigate diverse learner populations, and examine integration with structured pedagogical scaffolding to optimize vocabulary acquisition, fluency development, and reflective learning. Overall, the findings indicate that ChatGPT Voice has considerable potential to complement informal speaking practice by providing flexible opportunities for spoken interaction and self-directed learning. While conversational AI is not a substitute for classroom instruction, it can support learner autonomy and expand opportunities for English speaking practice beyond the classroom.

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Research Article

Culturally Responsive English Language Teaching Through Dayak Punan Oral Tradition: A study of Vocabulary Acquisition in a Remote Primary School

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ABSTRACT

This study explores vocabulary acquisition outcomes and learner perceptions among fourth-grade students at SDN 005 Mentarang, a remotely situated primary school in Kalimantan, following instruction delivered through a culturally responsive English Language Teaching (ELT) framework built on Dayak Punan oral traditions. Adopting a descriptive quantitative design, the investigation drew on two data sources: a structured vocabulary test and a five-item Likert-scale perception questionnaire administered to thirty purposively selected participants. The vocabulary test yielded a class mean of 74.67, with 66.67% of students satisfying the Minimum Mastery Criterion (KKM) and 63.33% attaining Good or Excellent proficiency ratings. Questionnaire analysis produced a strongly positive aggregate reception, with 89.86% of all responses falling within the Agree or Strongly Agree categories; items measuring learning motivation (96.5%) These findings affirm the instructional value of anchoring English vocabulary teaching in indigenous cultural materials and carry meaningful implications for ELT curriculum development in geographically remote and culturally distinct Indonesian learning environments.

Keywords: *vocabulary acquisition, culturally responsive teaching, Dayak Punan oral traditions, English Language Teaching, remote primary school.*

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INTRODUCTION

The centrality of vocabulary to language competence is a matter of broad scholarly consensus. Across diverse EFL research traditions, the absence of an adequate lexical base has been repeatedly shown to impede learners' ability to participate productively in reading, writing, listening, and speaking activities, irrespective of their command of grammatical structures (Zeng et al., 2025). These challenges intensify when instructional content is constructed without regard for the lived realities of the learners it targets a condition that remains prevalent in many remote and indigenous community schooling contexts. In such settings, the distance between school language and home experience is not an incidental pedagogical inconvenience but a structural barrier with identifiable cognitive consequences. Research in the tradition of culturally responsive teaching has consistently established that new knowledge is processed and retained more effectively when learners can connect incoming information to the cognitive and cultural framework they bring to the classroom (Ogodo, 2024). When vocabulary instruction is designed without attention to these existing schemata, the processing burden on learners is elevated, and the conditions for durable lexical encoding are correspondingly diminished particularly for younger learners whose metalinguistic capacities are still maturing (Hofer et al., 2025).

SDN 005 Mentarang, a primary school in a remote area of North Kalimantan, exemplifies this structural challenge with particular clarity. The student body is predominantly composed of children from the Dayak Punan community, an indigenous group whose cultural identity is deeply rooted in a tradition of oral narrative and communal storytelling. This cultural heritage, however, remains largely unrepresented in the school's English language curriculum, which continues to rely on materials that bear little resemblance to the ecological, social, or linguistic worlds students inhabit. The Dayak Punan oral tradition presents a compelling instructional resource for culturally responsive ELT.

“Culturally responsive teaching connects prior knowledge with new language, making vocabulary learning more meaningful and memorable.”

Its narratives are lexically rich, structurally repetitive, and contextually embedded in ways that are known to support vocabulary retention (Wiysahnyuy & Valentine, 2023). The familiarity of these cultural materials carries a cognitive advantage: when new English words are introduced through narratives already known and valued by learners, the pathway from unfamiliar word to retained meaning is cognitively shortened, and the motivational conditions for engagement are correspondingly enhanced (Kristiawan et al., 2022). This instructional logic is grounded not in cultural sentiment alone but in established theories of language acquisition and cognitive processing. Empirical inquiry into culturally responsive ELT practice in remote Indonesian settings and specifically through indigenous oral traditions remains sparse. The majority of available studies have been conducted in urban or semi-urban contexts, leaving the dynamics of culturally grounded vocabulary instruction in rural indigenous schooling environments substantially under-examined. The present study addresses this gap by investigating the vocabulary mastery and learner

perceptions of thirty fourth-grade students at SDN 005 Mentarang following instruction delivered through Dayak Punan oral traditions, guided by two research questions: (1) To what extent do fourth-grade students at SDN 005 Mentarang demonstrate vocabulary mastery, as reflected in their test scores and their attainment of the KKM threshold, following culturally responsive ELT instruction grounded in Dayak Punan oral traditions? (2) What are students' perceptions of this instructional approach across the five experiential dimensions assessed by the questionnaire, including their motivation to learn, ability to retain newly acquired vocabulary, and engagement with cultural vocabulary associations introduced through the instruction? The study's significance is both theoretical and practical. At a theoretical level, it extends schema theory and culturally responsive teaching frameworks into a previously underexplored indigenous setting. At a practical level, it offers insights relevant to teachers, curriculum designers, and educational policymakers engaged with remote Indonesian schools, for whom the findings may inform how local oral traditions can be drawn upon as a resource for English vocabulary instruction.

LITERATURE REVIEW

Culturally Responsive Approaches in English Language Teaching

Culturally Responsive Teaching (CRT) has emerged as an influential framework for addressing cultural diversity in educational contexts. CRT emphasizes the importance of recognizing students' cultural identities, community experiences, and social backgrounds as valuable resources in the learning process (Nguyen & Huynh, 2023). Rather than assuming that learning occurs in culturally neutral environments, CRT acknowledges that teaching and learning are inherently shaped by sociocultural contexts. Within English Language Teaching (ELT), culturally responsive pedagogy seeks to bridge the gap between global English instruction and learners' local realities. Traditional ELT materials often reflect dominant cultural perspectives, particularly Western or urban contexts, which may not resonate with learners from rural or indigenous communities. When instructional materials fail to reflect students' cultural experiences, learners may find it difficult to connect with the language being taught, which can negatively affect engagement and learning outcomes (Sulistiyo et al., 2021).

Recent research demonstrates that culturally responsive ELT can enhance both linguistic development and learner engagement. By integrating culturally relevant content into language instruction, teachers can create more meaningful learning experiences that allow students to connect new language knowledge with their prior cultural understanding (Fauzi et al., 2026). This approach is particularly important in multilingual and indigenous educational settings, where cultural identity plays a central role in shaping students' learning experiences (Ogodo, 2024).

Indigenous Knowledge and Local Cultural Resources in Education

Indigenous knowledge systems represent important sources of cultural knowledge that have historically been transmitted through community practices, oral communication, and collective traditions. These systems include environmental knowledge, social values,

traditional narratives, and cultural practices that reflect the lived experiences of indigenous communities (Schroeder et al., 2022). In many indigenous societies, knowledge transmission occurs primarily through oral traditions such as storytelling, folklore, and community narratives. These oral forms of knowledge not only preserve cultural heritage but also function as informal educational mechanisms that shape social identity and collective memory (Schroeder et al., 2022). Within the Indonesian context, the Dayak Punan community represents an indigenous group whose cultural practices remain closely connected to forest ecosystems and traditional livelihoods. Oral storytelling plays a significant role in transmitting ecological knowledge, historical narratives, and moral values within the community (Antang et al., 2026). These narratives therefore represent valuable cultural resources that can potentially enrich educational practices.

However, despite their educational potential, indigenous knowledge systems are rarely integrated into formal school curricula. Many educational institutions continue to rely on standardized materials that prioritize national or global perspectives while overlooking local cultural knowledge. As a result, indigenous learners may experience a disconnect between school learning and their everyday cultural environments (Schroeder et al., 2022). Integrating indigenous knowledge into classroom instruction has therefore been increasingly recommended as a strategy for creating more culturally relevant and inclusive learning environments.

Storytelling and Vocabulary Learning in EFL Contexts

Storytelling has long been recognized as an effective instructional strategy in language education. Narratives provide meaningful linguistic contexts in which vocabulary items are embedded within coherent story structures. Through narrative exposure, learners encounter vocabulary within meaningful communicative situations, allowing them to infer word meanings through contextual clues and narrative sequences (Zeng et al., 2025). Compared with isolated vocabulary memorization, narrative-based learning encourages deeper cognitive processing of language. Storytelling activities expose learners to repeated lexical patterns, descriptive expressions, and narrative discourse structures that support vocabulary retention and language comprehension (Wiysahnyuy & Valentine, 2023).

Recent studies in English language education have shown that storytelling-based instruction can significantly enhance vocabulary acquisition, oral language development, and student engagement. Narrative-based approaches, including digital storytelling and culturally grounded narratives, allow learners to experience language in authentic communicative contexts while strengthening their connection to the learning material (Kristiawan et al., 2022). The benefits of storytelling may become even more significant when narratives originate from learners' own cultural traditions. Culturally familiar stories allow students to activate prior knowledge and relate new vocabulary to their personal experiences, which supports comprehension and memory retention. Consequently, integrating local storytelling traditions into English language instruction can serve as an effective strategy for both vocabulary development and culturally responsive pedagogy (Fauzi et al., 2026).

Research Gap

Although previous studies have explored culturally responsive pedagogy, indigenous knowledge integration, and storytelling-based language learning, limited research has specifically examined the pedagogical use of indigenous oral traditions in English vocabulary instruction within remote Indonesian contexts. In particular, the role of Dayak Punan oral storytelling traditions as culturally relevant resources for English language learning has received minimal scholarly attention. Therefore, this study aims to address this gap by investigating how the integration of Dayak Punan oral narratives into English language instruction can support vocabulary acquisition among students in remote areas of North Kalimantan. Given the limited empirical groundwork in this specific context, the present study adopts a descriptive approach, aiming to document students' vocabulary mastery and perceptions following this instruction rather than to establish causal or comparative claims. By examining the pedagogical potential of culturally grounded storytelling, this research seeks to contribute to the development of more contextually responsive ELT practices in indigenous educational settings.

METHOD

Research Design and Context

This investigation adopted a descriptive quantitative design, which Creswell and Creswell (2023) characterise as an approach appropriate to the systematic measurement and description of variables through numerical data rather than causal inference through experimental manipulation. It is important to note at the outset that this design employed a single-group, post-intervention structure: no pretest or baseline vocabulary measure was administered prior to the instructional intervention, and no comparison or control group was included. A naturalistic classroom context was maintained throughout the data collection process, enabling findings to reflect students' actual vocabulary achievement and learning perceptions under ordinary instructional conditions rather than under artificially controlled circumstances (Fraenkel et al., 2022). Yu et al. (2022) describes this orientation as characteristic of descriptive research, which aims to document phenomena as they naturally occur. This design was selected as the most appropriate match for the study's purpose: to provide a clear and accurate account of vocabulary mastery outcomes and learner perceptions following a specified instructional intervention.

Participants

The study was carried out at SDN 005 Mentarang, a primary school serving a remote area of North Kalimantan, with a broader target population of 74 upper primary students across Grades 3 to 6. From this population, a sample of 30 fourth-grade students was drawn through purposive sampling. Fourth-grade learners were identified as the optimal cohort for this study on developmental and pedagogical grounds: students at this stage demonstrate growing metalinguistic awareness and an increasing capacity to engage with contextually rich instructional materials, while their vocabulary repertoire remains sufficiently developmental for instructional intervention to be meaningfully associated with observed differences in vocabulary outcomes (Hofer et al., 2025). This profile is well-aligned

with the principles of culturally responsive teaching, which emphasise the importance of building on learners' existing cultural schemata to scaffold the acquisition of new knowledge (Ogodo, 2024).

Data Collection

Two complementary instruments were employed to gather data. The first was a structured vocabulary test comprising multiple-choice questions, word-matching tasks, and meaning identification exercises, all contextualised within Dayak Punan oral traditions to maintain alignment with the culturally responsive instructional framework. Each correct response was awarded five points, enabling the derivation of total and class mean scores as indicators of vocabulary mastery. Vocabulary testing of this format is well-established in language evaluation research as a means of gauging learners' proficiency and comprehension (Drown et al., 2023). The second instrument was a five-item perception questionnaire administered following the vocabulary test. Its five items addressed the following dimensions of the culturally responsive learning experience: (1) cultural vocabulary association, (2) contextual vocabulary comprehension, (3) classroom engagement, (4) learning motivation, and (5) vocabulary retention. Responses were gathered using a four-point Likert scale, ranging from Strongly Disagree (SD = 1) to Strongly Agree (SA = 4), with the deliberate exclusion of a neutral midpoint in order to encourage definitive attitudinal positioning and minimise central tendency bias (Kusmaryono et al., 2022). As with the vocabulary test, a reliability statistic such as Cronbach's alpha was not computed for this questionnaire; this represents a further limitation, and future studies employing this instrument would benefit from establishing its internal consistency. The instrument was reviewed by the classroom teacher prior to administration to confirm the age-appropriateness of the language used and the cultural suitability of each item. Both instruments were designed to yield mutually informative data: the vocabulary test providing a performance-based measure of mastery, and the questionnaire capturing the affective and experiential dimensions of students' engagement with the instructional approach. The raw questionnaire responses from all 30 participants were recorded across five dimensions using a four-point Likert scale (SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree). The data below represent the compiled item-by-item counts derived from individual student records. Two items (Q2 and Q4) recorded one missing entry each, yielding valid $n = 29$ for those items.

Table 1
Vocabulary Classification

Score Range	Criteria
90-100	Excellent
75-89	Good
60-74	Fair
50-59	Poor
0-49	Very Poor

Students' scores were classified into categories (adapted from language assessment frameworks): Language assessment classification helps interpret learners' proficiency levels (Glenn Fulcher, 2024).

Data Analysis

Descriptive statistics were employed throughout to summarize and interpret the collected data (Field, 2018; Creswell & Creswell, 2023). Vocabulary test data were subjected to three complementary analytical procedures: calculation of the class mean score, percentage analysis relative to the Minimum Mastery Criterion (KKM), and proficiency classification using a five-category scoring framework adapted from Fulcher (2024). Questionnaire responses were analysed through frequency tabulation and percentage calculation for each item individually and across all items in aggregate. This multi-procedure approach was adopted in recognition of Fraenkel et al.'s (2022) observation that any single analytic measure is insufficient to capture the full complexity of performance and perception data in classroom research: mean scores mask distributional variation, while item-level percentages may obscure broader patterns visible only at the aggregate level. The combination of these procedures was intended to generate a more complete and interpretively nuanced account of the study's findings.

FINDINGS

Vocabulary Test Results

The vocabulary test administered to 30 participants generated a total accumulated score of 2,240, from which a class mean of 74.67 was derived. This mean indicates that students, as a group, demonstrated a level of vocabulary mastery that modestly exceeds the minimum expected standard, though the aggregate figure alone does not convey the degree of within-class variation. Percentage analysis conducted according to the formula $P = (F/N) \times 100\%$ determined that 20 of the 30 students (66.67%) met or exceeded the KKM threshold, while the remaining 10 students (33.33%) fell below the required minimum. This distributional finding qualifies the mean score: while the average suggests moderate overall achievement, the non-trivial proportion of students below criterion underscores the need for differentiated instructional support within the class.

Table 2

Vocabulary Test Score Classification and Frequency Distribution

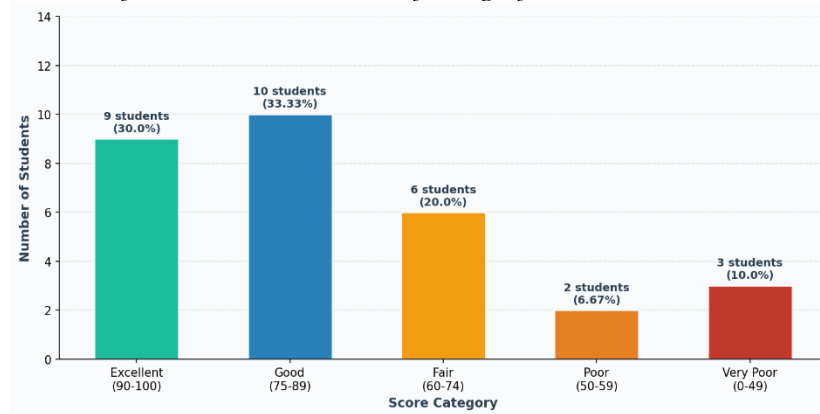
Score Range	Category	Frequency	Percentage
90–100	Excellent	9	30.00%
75–89	Good	10	33.33%
60–74	Fair	6	20.00%
50–59	Poor	2	6.67%
0–49	Very Poor	3	10.00%
Total		30	100%

As Table 2 and the score classification chart below illustrate, the distribution of student performance is meaningfully differentiated. Thirty percent of the class ($n = 9$) attained Excellent-level scores, and a further 33.33% ($n = 10$) achieved Good-level scores together accounting for 63.33% of participants who demonstrated satisfactory or strong vocabulary mastery. Concurrently, 36.67% of students ($n = 11$) fell within the Fair, Poor, or Very

Poor categories, confirming that a significant minority has yet to reach a level of vocabulary mastery sufficient to support confident English communication. This distributional picture is an important dimension of the findings that the class mean alone would obscure.

Figure 1.

Vocabulary Test Score Distribution by Category



Questionnaire Findings

The five-item perception questionnaire was completed by all 30 participants, with two items (Q2 and Q4) each recording one missing response. Across the 148 total valid responses collected, 74 (50.00%) fell in the Agree category and 59 (39.86%) in the Strongly Agree category, producing an aggregate positive response rate of 89.86%. Negative responses comprising 10 Disagree entries (6.76%) and 5 Strongly Disagree entries (3.38%) accounted for just 10.14% of all responses. This distribution reflects a strong and consistent endorsement of the culturally responsive instructional approach across all five dimensions assessed.

Figure 2.

Overall Distribution of Questionnaire Responses by Category

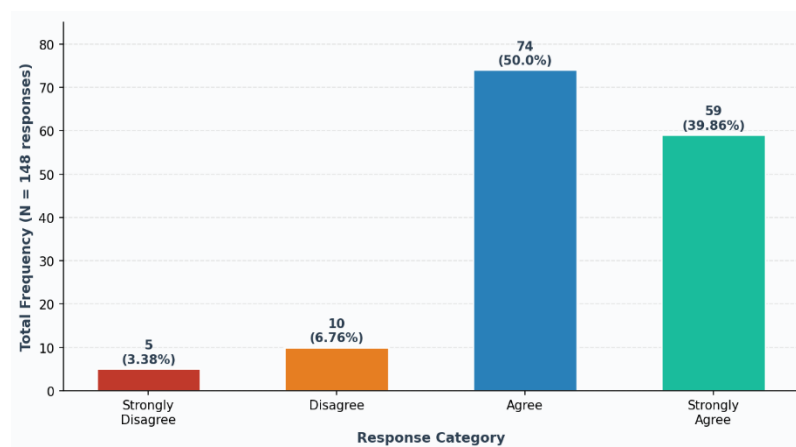
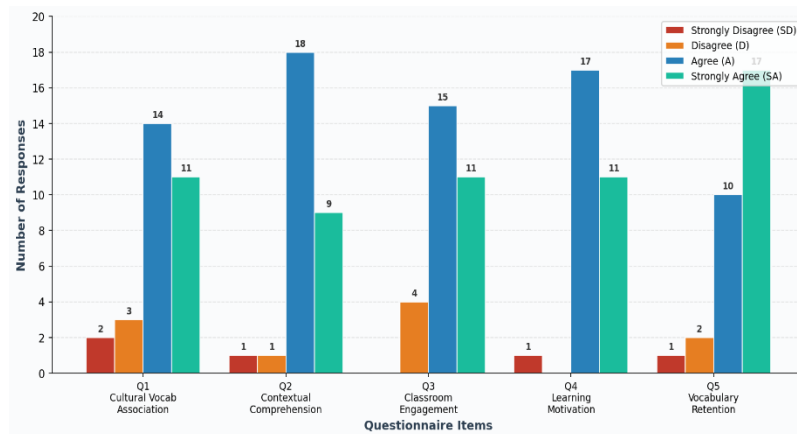


Figure 3.
Student Response Distribution Across All Five Questionnaire Items



Item-level analysis reveals patterns of interest that aggregate figures do not fully capture. Item 4, measuring learning motivation, produced the strongest endorsement of any item, with 96.5% of responses falling in the positive categories and not a single Disagree response recorded. Item 5, addressing vocabulary retention, yielded the highest proportion of Strongly Agree responses across the questionnaire 56.7% indicating that students hold a particularly firm conviction that culturally grounded instruction supports their ability to retain newly learned vocabulary. Items 1 and 3 produced the comparatively highest proportions of negative responses at 16.7% and 13.3% respectively, suggesting some variation in the degree to which individual students experienced cultural vocabulary associations and classroom engagement. These item-level nuances are discussed in greater depth in the following section.

DISCUSSION

The class mean of 74.67 and the 66.67% KKM attainment rate indicate a moderate level of aggregate vocabulary performance. When read in conjunction with the score classification data which show that 63.33% of students achieved Good or Excellent ratings these figures suggest that the culturally responsive instructional approach was effective in supporting vocabulary development for the majority of the class. Although the descriptive, single-group, post-instruction design of this study means that that this interpretation should be read as plausible rather than demonstrated. These results are broadly consistent with comparable studies of CRT-informed vocabulary instruction, in which the use of culturally familiar materials tends to produce above-average performance outcomes relative to approaches relying on contextually decontextualised content (Anyichie & Butler, 2023; Hammond, 2020). A schema-theoretic account offers one plausible explanation for this pattern. When students encounter new English vocabulary embedded in the oral narratives of their own community, the cultural schemata activated by those narratives reduce the cognitive effort required to attach meaning to form. Rather than arriving as isolated units

demanding effortful memorisation, new words enter the learner's mental lexicon through associative pathways already opened by cultural familiarity (Hattan, Alexander, & Lupo, 2024). Zeng et al.'s (2025) synthesis of the principle that vocabulary is most durably acquired through meaning-focused input in rich contextual environments though the present design cannot confirm this mechanism directly is directly realised in this instructional design.

The finding that 33.33% of students did not attain the KKM warrants careful consideration. The presence of a meaningful underperforming minority within a class that otherwise showed moderate achievement is consistent with what Fraenkel et al. (2022) term the masking effect of mean scores in heterogeneous groups. While Dayak Punan oral traditions provided effective scaffolding for most learners, variation in individual students' prior exposure to specific oral tradition texts shaped by family background, community participation, and prior schooling may have moderated the strength of schema activation for some participants. Schroeder et al. (2022) observe that within any indigenous community, individual differences in cultural experience can produce variable cognitive responses to the same culturally grounded instructional materials. This suggests that, tentatively, greater diversity in the oral tradition texts employed, drawing on a broader range of narrative genres and thematic orientations, might expand the reach and consistency of the cultural scaffolding effect a hypothesis that would need to be tested in future studies with a comparative design.

The questionnaire findings present a compelling picture of the affective dimensions of students' experiences with culturally responsive ELT. The 89.86% aggregate positive response rate is striking in its own right, and the item-level data provide a richer interpretive layer. The near-unanimous endorsement on Item 4 (learning motivation, 96.5% positive) is consistent with Anyichie and Butler's (2023) and Ladson-Billings' (2021) theoretical propositions regarding the motivational dividend of cultural alignment between instructional content and learner identity. Gotlieb et al.'s (2022) account that culturally and emotionally resonant content engages interdependent social, emotional, and cognitive neural systems and lowers affective barriers to engagement offers a plausible framework for interpreting this result, though the present study did not measure neurological or physiological indicators and so cannot substantiate this account directly. For students in a remote setting with limited daily English exposure, motivational enhancement of this kind carries particular strategic importance if it holds, since motivation is itself a well-established predictor of long-term language learning outcomes (Dewaele & Meftah, 2024; Kristiawan et al., 2022).

The skew toward Strongly Agree on Item 5 (vocabulary retention, 56.7%) indicates that students hold a strong conviction rather than merely a hedged opinion about the mnemonic benefits of culturally anchored instruction. This finding converges with Zeng et al.'s (2025) theoretical account of depth of processing, which would predict that When new

vocabulary is processed within a culturally familiar narrative context, the associative pathways through which it is encoded are multiplied, strengthening the memory trace and enhancing recall. The repetitive structures and rhythmically coherent form of Dayak Punan narratives May have functioned as natural mnemonic scaffolds, a pattern consistent with findings from comparable research on indigenous storytelling in other language learning contexts (Schroeder et al., 2022). However, as students' perceptions rather than direct retention measures were collected, this interpretation remains suggestive rather than confirmed.

The comparatively higher rates of negative responding on Items 1 and 3 merit specific attention. The 16.7% negative response rate on Item 1 (cultural vocabulary association) likely reflects individual variation in familiarity with the specific oral tradition texts used in instruction. Anyichie and Butler (2023) caution that treating cultural identity as a homogeneous variable is a fundamental error of implementation: within any community, the distribution of cultural experience is uneven, and instructional materials that activate strong schemata for most students may generate weaker associations for those whose prior cultural exposure differs from the majority. The 13.3% negative response rate on Item 3 (classroom engagement) may similarly reflect heterogeneity in individual interactional preferences relative to the participatory structures embedded in oral tradition-based activities. Future iterations of the instructional design could address both of these concerns through greater variety in the cultural texts employed and a broader range of participation modes including individual, paired, and collective formats. Taken together, the vocabulary test and questionnaire findings converge on a set of implications for ELT curriculum design in remote and culturally distinct educational settings. Most directly, they lend support to the integration of indigenous oral traditions as contextually authentic instructional resources for English vocabulary teaching, with the observed vocabulary outcomes and strongly positive learner perceptions in this context together suggesting that such an approach merits further, more rigorous investigation particularly given the limited cultural relevance of commercially produced materials in this setting.

The findings further highlight the importance of curricular variety in the selection of cultural materials. The achievement gap and the relatively elevated negative responses on Items 1 and 3 both signal the limitations of a single-text or single-tradition approach, and point toward the need for a curriculum that draws on a broader range of Dayak Punan narrative forms, genres, and performance styles to activate cultural schemata across the full spectrum of individual learners. The strength of the motivation and retention findings carries particular significance for long-term language development planning in remote Indonesian schools. Students who experience cultural affirmation in the English language classroom whose heritage is reflected and valued rather than marginalised may be more likely to sustain engagement with English study over time and to develop the intrinsic motivation that supports autonomous language learning. Instructional materials designed

to potential cultural resonance effect may therefore yield returns not only in immediate vocabulary gains but in the broader and more enduring arc of students' language development trajectories possibility-future research employing pretest-posttest or comparison-group designs would be well placed to examine.

CONCLUSION

This study examined vocabulary acquisition outcomes and learner perceptions of fourth-grade students at SDN 005 Mentarang following culturally responsive ELT instruction grounded in Dayak Punan oral traditions. Findings support a positive assessment of this approach, though with notable differentiation. Vocabulary test results showed that 63.33% of students achieved Good or Excellent proficiency ratings, with a class mean of 74.67, and 66.67% of participants meeting the KKM threshold; the remaining 33.33% did not attain the minimum standard, indicating a continued need for differentiated instructional support. The questionnaire yielded an overall positive response rate of 89.86%, with learning motivation (96.5%) emerging as the most strongly endorsed dimension of the instructional experience. These results align with schema theory, culturally responsive teaching, and vocabulary acquisition research, suggesting that cultural grounding in Dayak Punan oral traditions supported both the depth of lexical processing and the affective conditions conducive to learning, although the descriptive, non-experimental design precludes firm causal claims. Limitations include the small single-school sample, which constrains generalisability, and the absence of qualitative data from interviews or classroom observation. Nonetheless, these findings offer meaningful evidence for culturally responsive ELT in indigenous community settings, carrying practical implications for teachers, curriculum designers, and policymakers seeking to bridge the cultural distance between school language and students lived experience in remote Kalimantan schools.

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Research Article

Indonesian University Students' Perceived Usefulness and Challenges of AI-Assisted Corpus Tools in English Learning

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ABSTRACT

Artificial intelligence (AI) has increasingly been integrated into English language learning, while corpus tools support data-driven learning through authentic language data. However, corpus tools can be complex for learners with limited experience. Although previous studies have examined AI in language learning and corpus-based instruction separately, limited research has explored how AI-assisted corpus tools shape Indonesian university students' perceptions of their usefulness and challenges. This study explored Indonesian university students' perceptions of the usefulness and challenges of AI-assisted corpus tools in learning English. A qualitative research design involved five postgraduate students enrolled in a Corpus-Based Language Pedagogy course. Data were collected through semi-structured interviews and analyzed using thematic analysis. Participants generally perceived AI-assisted corpus tools positively, particularly for improving learning efficiency, facilitating access to authentic language use, and supporting corpus data interpretation. However, they reported challenges related to interpreting corpus outputs, limited corpus literacy, and concerns about AI-generated response accuracy. Overall, AI-assisted corpus tools can support English language learning when accompanied by critical evaluation skills and sufficient understanding of corpus analysis. The findings provide practical insights into integrating AI-assisted corpus tools to support corpus literacy and more effective corpus-based English learning in higher education.

Keywords: *Artificial Intelligence, Corpus-Based Language Learning, Corpus Tools, English Language Learning, Students' Perceptions*

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INTRODUCTION

Artificial intelligence (AI) has become increasingly visible in higher education, particularly in the teaching and learning of English as a foreign language. In recent years, university students have used AI-based tools for various academic purposes, such as improving writing, developing vocabulary, obtaining language feedback, and supporting independent learning. Previous studies have reported generally positive responses toward the use of such technologies, especially when students perceive them as useful, accessible, and supportive of their learning goals (Ho & Nguyen, 2024; Lee et al., 2024). Likewise, students' perceptions of usefulness and ease of use have been identified as important factors influencing their acceptance of AI-assisted language learning environments (Alsakaker, 2025; An et al., 2025).

Alongside the rapid growth of AI, corpus tools have long been recognized as valuable resources in language pedagogy. A corpus refers to a large collection of authentic language data stored electronically and analyzed to observe actual patterns of language use. Through corpus tools, learners can examine vocabulary usage, collocations, grammatical structures, and discourse features based on real examples rather than intuition alone. Such tools have been widely associated with the development of language awareness, learner autonomy, and data-driven learning practices. A recent systematic review by D. Li et al. (2025) further confirmed the positive contribution of corpus-based instruction in EFL classrooms across diverse educational settings.

"AI is a learning assistant, not a replacement for learners' critical thinking"

Despite their pedagogical value, corpus tools are not always easy for students to use, particularly for those who are unfamiliar with corpus linguistics or analytical search functions (Götz & Granger, 2024; Ma & Mei, 2021). Learners may experience difficulty interpreting concordance lines, selecting relevant queries, or understanding large amounts of linguistic data (Ma & Mei, 2021). For novice users, corpus interfaces may appear technical and cognitively demanding, which can reduce their willingness to engage with such tools. Oktavianti et al. (2026) similarly noted that students may encounter challenges and require clearer support when engaging with AI-integrated corpus-based learning practices.

In this context, AI-assisted technologies may serve as a useful bridge between students and corpus tools. Through conversational systems or automated assistants, learners may obtain explanations of technical terms, guidance in using search features, summaries of corpus findings, or simplified interpretations of language data. This form of support has the potential to reduce complexity and make corpus tools more approachable for learners with limited prior experience. Although many studies have examined students' perceptions of AI in language learning (Liu et al., 2025; Wu et al., 2024), relatively little attention has been paid to how AI functions as a learning support in helping students interact with corpus tools. Existing studies have largely focused on AI adoption or corpus-

based learning separately, leaving unresolved how AI-assisted corpus tools influence students' experiences, particularly in terms of their perceived usefulness, learning challenges, and corpus literacy in higher education.

By and large, earlier studies have frequently concentrated on technology acceptance, behavioral intention, or general attitudes toward AI tools, while fewer studies have explored students' own experiences regarding both the usefulness and the challenges of AI-assisted corpus tools in learning English. Understanding these perceptions is important because students' experiences may offer practical insights into how such tools can be introduced more effectively in university classrooms. Therefore, this study aims to explore Indonesian university students' perceived usefulness and challenges of AI-assisted corpus tools in learning English through a qualitative approach. It is expected that the findings will contribute to a deeper understanding of student experiences and provide implications for future English language teaching practices.

Accordingly, this study addresses the following research questions:

- (1) How do Indonesian university students perceive the usefulness of AI-assisted corpus tools in English learning?
- (2) What challenges do Indonesian university students experience when using AI-assisted corpus tools in English learning?

LITERATURE REVIEW

Artificial Intelligence in English Language Learning

The growing presence of artificial intelligence (AI) has significantly influenced contemporary English language learning, particularly in higher education settings (Guo & Wang, 2025; Karataş et al., 2024). AI-based technologies are increasingly used to support students in various language-related tasks, including writing development, vocabulary learning, grammar correction, pronunciation practice, and autonomous learning. The accessibility and interactive nature of these tools have made them attractive resources for university students who seek immediate assistance and flexible learning opportunities.

Recent studies have reported generally positive perceptions toward the use of AI in language learning. Ho and Nguyen (2024) found that EFL students tended to accept generative AI tools when they perceived them as useful and easy to operate. Similarly, An et al. (2025) revealed that students' perceptions of AI-assisted language learning were strongly associated with practicality, convenience, and learning support. Taken together, these studies suggest that students are more likely to adopt AI technologies when such tools align with their academic needs and provide meaningful support for language learning.

In more specific learning contexts, AI has also shown potential in improving particular language skills. Lee et al. (2024) reported that university students viewed AI-based tools positively in English writing courses, especially in relation to idea generation, language correction, and writing efficiency. Likewise, Alsakaker (2025) found that AI

applications were perceived as beneficial for vocabulary acquisition, as learners were able to access word meanings, examples, and contextual usage more efficiently. These findings collectively indicate that AI can function not only as a technological aid but also as a practical learning companion that supports different aspects of English language development. Collectively, these studies suggest that learners' positive perceptions of AI are closely associated with its ability to provide meaningful, context-specific support that addresses their language learning needs.

Despite the reported benefits of AI-assisted language learning, previous studies have also highlighted several concerns regarding the use of AI in educational contexts. Some students remain uncertain about overreliance on technology, the accuracy of generated responses, and the possible reduction of independent critical thinking. In addition, differences in digital literacy may affect students' ability to maximize AI tools effectively. As noted by Wu et al. (2024), learners' intention to use AI is often shaped not only by perceived usefulness, but also by confidence, readiness, and contextual learning conditions.

Overall, previous literature suggests that AI has considerable potential to support English language learning when integrated appropriately (Guo & Wang, 2025; Pang et al., 2025). Nevertheless, students' experiences with AI may vary depending on the type of tool, learning purpose, and level of familiarity with technology. For this reason, further exploration is needed in more specific contexts, including the use of AI to support other pedagogical tools such as corpus resources.

Corpus Tools in English Language Pedagogy

Corpus tools have become an important resource in contemporary language pedagogy, particularly in the teaching and learning of English. A corpus can be understood as a large electronic collection of authentic spoken or written texts that can be systematically analyzed to identify patterns of real language use. Through corpus tools, learners are able to investigate vocabulary frequency, collocations, grammatical structures, discourse patterns, and contextual language choices based on empirical evidence rather than intuition alone. This evidence-based approach has contributed to the growing popularity of corpus-informed teaching practices. Such practices are closely associated with Data-Driven Learning (DDL), an approach introduced by Johns (1991), which encourages learners to discover language patterns independently through direct exploration of authentic corpus data rather than relying solely on teacher explanations.

One of the major contributions of corpus tools lies in their ability to expose learners to authentic language examples. Instead of relying solely on textbook sentences or isolated rules, students can observe how words and structures are naturally used in real communication. This process allows learners to develop a more accurate understanding of vocabulary usage, phraseology, and grammatical variation. In many educational settings, corpus tools have been associated with improved language awareness, greater learner autonomy, and stronger analytical skills. Similarly, Boulton and Cobb (2017) concluded in their meta-analysis that corpus-based learning generally produces positive effects on

language development, particularly when learners are provided with sufficient guidance and opportunities to interact actively with corpus data.

A recent systematic review by D. Li et al. (2025) confirmed that corpus-based instruction has produced generally positive outcomes in EFL classrooms across different contexts. The review highlighted that corpus resources can support vocabulary learning, grammar development, writing improvement, and learner engagement when implemented effectively. Together with the findings of Boulton and Cobb (2017), these studies consistently demonstrate that corpus-based instruction supports both language development and learner autonomy, reinforcing its value as an effective pedagogical approach in English language teaching.

In addition to instructional benefits, corpus tools also provide opportunities for exploratory and student-centered learning. Learners may independently search for language patterns, compare examples, and draw conclusions from authentic data. Such practices are closely linked to data-driven learning, in which students actively construct linguistic knowledge through observation and discovery. Moreno-Ortiz (2025) further demonstrated how advanced corpus tools can facilitate more comprehensive text and discourse exploration, offering broader possibilities for educational use. These findings illustrate that corpus tools not only provide authentic linguistic input but also encourage learners to become more active and reflective in constructing language knowledge.

Despite these strengths, corpus tools may still present practical challenges for many learners, especially beginners who have limited experience with linguistic software or corpus analysis. Search interfaces, concordance displays, and technical terminology may appear complex or unfamiliar to novice users. Kennedy and Miceli (2017) similarly argued that learners often require appropriate scaffolding and training to use corpus resources effectively, particularly during the early stages of corpus-based learning. As a result, the successful integration of corpus tools often depends on adequate teacher guidance, learner training, and accessible technological support. Therefore, while corpus tools hold substantial promise for English language pedagogy, their effectiveness may vary according to how they are introduced and mediated in classroom contexts.

AI as a Mediating Support in Corpus-Based English Learning

Although corpus tools offer substantial pedagogical benefits, many learners still experience difficulties when attempting to use them independently. Technical interfaces, unfamiliar search commands, concordance lines, and large amounts of linguistic data may create barriers, particularly for students who have limited prior exposure to corpus linguistics. In such situations, additional support is often necessary to help learners engage with corpus resources more effectively. One possible form of support is the use of artificial intelligence (AI) as a mediating tool.

In educational contexts, mediation may refer to the assistance that helps learners bridge the gap between existing knowledge and new learning tasks. AI-based tools have the potential to perform this supportive role by simplifying complex processes, providing

explanations, and offering immediate responses to learners' questions. Rather than replacing corpus tools, AI may function as a complementary resource that makes corpus-based learning more accessible and less intimidating for novice users. This perspective is consistent with the principles of Data-Driven Learning (DDL), which emphasize learner exploration and discovery while recognizing the importance of appropriate guidance to support effective corpus use (Johns, 1991; Boulton, 2017). In this context, AI can be viewed as a form of pedagogical scaffolding that facilitates learners' engagement with authentic language data without diminishing the exploratory nature of corpus-based learning.

For example, students may use AI tools to interpret concordance lines, understand linguistic terminology, generate example sentences based on corpus findings, or receive step-by-step guidance on using search functions. Through such interactions, learners may gain clearer understanding of corpus outputs and greater confidence in exploring authentic language data. In this sense, AI can reduce cognitive burden and support learners in navigating tasks that might otherwise appear overly technical or confusing.

Previous studies on AI-assisted language learning have consistently reported positive effects on learners' engagement, motivation, and learning experiences (An et al., 2025; Guo & Wang, 2025; Liu et al., 2025; Wu et al., 2024). Liu et al. (2025), for instance, found that learners used AI-mediated informal digital learning resources to support English development in flexible and personalized ways. Similarly, Wu et al. (2024) reported that students' intention to use AI was strongly associated with perceived usefulness and supportive learning conditions. Likewise, Pang et al. (2025) highlighted that generative AI can serve as a personalized learning assistant by providing immediate explanations, feedback, and adaptive learning support. Collectively, these studies suggest that AI is most effective when it functions as a learning facilitator rather than merely an information provider.

More specifically, Oktavianti et al. (2026) emphasized students' attitudes, challenges, and needs in English reading comprehension as foundations for AI-integrated corpus-based language pedagogy. Their study indicates that combining AI support with corpus-based practices may respond to students' need for clearer explanations and more manageable learning experiences. Similarly, Karataş et al. (2024) argued that AI tools are most effective when they are integrated into meaningful pedagogical practices that actively support language learning rather than functioning merely as technological innovations. This perspective is particularly relevant for university students who are newly introduced to corpus tools and may require scaffolding during the learning process.

Despite its potential, research examining AI specifically as a mediator in corpus-based English learning remains limited. By and large, previous studies have predominantly examined AI adoption, technology acceptance, or corpus-based learning as separate areas of inquiry. Consequently, limited attention has been given to understanding how AI mediates learners' interactions with corpus tools, particularly in supporting corpus literacy, reducing learning barriers, and facilitating students' interpretation of authentic language data. Therefore, further investigation is needed to understand how students perceive AI as

a supportive bridge in using corpus tools, particularly in university-level English learning environments.

METHOD

Research Design

This study employed a qualitative research design to explore university students' perceived usefulness and challenges of AI-assisted corpus tools in learning English. A qualitative approach is considered appropriate because the study aims to understand participants' experiences, perspectives, and interpretations in depth (Creswell & Poth, 2018). Rather than focusing on numerical measurement, this study seeks to obtain rich descriptive data regarding how students perceive and experience the use of AI-assisted corpus tools within English learning contexts. The study specifically applies a qualitative exploratory approach since the integration of artificial intelligence and corpus tools in English language learning remains relatively underexplored, particularly from students' perspectives. Through this approach, the researcher expects to gain deeper insights into students' learning experiences, perceived benefits, and difficulties related to the use of AI-assisted corpus tools.

Participants

The participants of this study were five female master's students in their twenties enrolled in the second semester of a Master's Program in English Language Education and taking the Corpus-Based Language Pedagogy course. They were selected because they had direct experience using corpus tools and AI-assisted corpus tools during the course. As active users of these tools, the participants were considered capable of providing relevant insights into their learning experiences and perceptions. All participants had completed corpus-based learning activities as part of the course before participating in the interviews, ensuring that they possessed sufficient experience to reflect on the use of AI-assisted corpus tools.

The participants represented varying levels of familiarity with corpus tools. While some had previously encountered corpus-related concepts during their undergraduate studies, others were introduced to corpus tools for the first time in the current course. This diversity of experience provided valuable perspectives on both the perceived usefulness and challenges of AI-assisted corpus tools in learning English.

Participants were recruited based on their willingness to participate in the study and their experience in completing corpus-based learning activities throughout the course. To ensure confidentiality, all participants were assigned pseudonyms (P1–P5) during data analysis and reporting. Before the interviews were conducted, all participants were informed about the purpose of the study and provided their informed consent to participate voluntarily. They were also informed that their participation was entirely voluntary, that they could withdraw from the study at any stage without consequence, and that all personal information would remain confidential and be used solely for research purposes.

Research Instrument

The primary research instrument used in this study was a semi-structured interview protocol developed by the researcher. The interview protocol consisted of open-ended questions designed to explore participants' experiences of using AI-assisted corpus tools in learning English. The questions covered four main aspects: (1) participants' experiences of using corpus tools, (2) their perceptions of the usefulness of AI-assisted corpus tools, (3) the challenges they encountered while using the tools, and (4) their views on the future use of AI-assisted corpus tools in English language learning. The semi-structured format enabled participants to elaborate on their responses while allowing the researcher to maintain consistency across interviews and address the research objectives.

Data Collection

The data for this study were collected through semi-structured interviews. The interview method was chosen because it allowed participants to share their experiences, perceptions, and reflections regarding the use of AI-assisted corpus tools in English learning in greater depth.

All interviews were conducted by the researcher. Due to participants' varying schedules and professional commitments, the interviews were conducted asynchronously through WhatsApp voice notes. The researcher distributed a set of semi-structured interview questions, and participants responded by recording and sending voice messages at their convenience. Before recording their responses, participants were informed that they could contact the researcher if they required clarification regarding any of the interview questions. This procedure helped ensure that all participants understood the questions consistently while allowing them the flexibility to complete the interviews at their own pace. This approach provided flexibility while still enabling participants to give detailed explanations of their experiences and opinions.

The interview questions focused on participants' experiences in using corpus tools, their perceptions of the usefulness of AI-assisted corpus tools, the challenges they encountered, and their views on the future use of such technologies in English language learning. The collected voice-note responses were subsequently transcribed using an AI-assisted transcription tool and carefully reviewed and corrected by the researcher before being prepared for analysis.

Data Analysis

The collected data were analyzed using thematic analysis (Braun & Clarke, 2006). After all interview responses had been received, the voice-note recordings were transcribed into written text using an AI-assisted transcription tool and subsequently reviewed and corrected by the researcher to ensure transcription accuracy. The researcher then read the transcripts several times to become familiar with the data and gain a comprehensive understanding of participants' experiences and perceptions.

Following the familiarization stage, initial coding was conducted by identifying meaningful segments of data relevant to the research questions. The coding process was carried out manually using Microsoft Word by highlighting relevant excerpts and assigning descriptive codes to participants' responses. Similar codes were subsequently grouped into broader categories based on recurring ideas and patterns across participants' responses. These categories were then refined and organized into overarching themes representing students perceived usefulness and challenges of AI-assisted corpus tools in learning English. The preliminary themes were reviewed by comparing them with the original transcripts to ensure that they accurately represented participants' responses before the final themes were established.

The final themes were interpreted and used to address the research questions of the study. Through this process, thematic analysis enabled the researcher to systematically explore participants' experiences and identify common patterns regarding the use of AI-assisted corpus tools in English language learning.

FINDINGS

The interview data were analyzed using thematic analysis to identify recurring patterns across participants' responses. Through the coding process, meaningful segments of data were organized into representative codes, which were subsequently grouped into subthemes and broader themes. Table 1 presents the themes, subthemes, and representative codes identified in this study, providing an overview of the analytical framework used to organize the findings before they are discussed in detail.

Table 1

Themes, subthemes, and representative codes

Themes	Subthemes	Representative Codes
Perceived usefulness of AI-Assisted corpus tools	Learning efficiency	Learning efficiency, Faster data analysis
	Authentic language learning	Authentic language learning, Collocation learning, Example-based learning
	AI as a learning mediator	AI support, AI-mediated support, Easier corpus interpretation
Challenges of AI-Assisted corpus tools	Information overload and lack of familiarity	Information overload, Lack of familiarity, Need for training
	Need for verification of AI responses	Need for verification, Inaccurate AI responses, Overgeneralized responses

As presented in Table 1, the analysis generated two overarching themes: (1) Perceived Usefulness of AI-Assisted Corpus Tools and (2) Challenges of AI-Assisted Corpus Tools. These themes were further organized into five subthemes that collectively reflect participants' experiences of using AI-assisted corpus tools in learning English. Together, the

themes address the two research questions by illustrating both the benefits and the challenges perceived by the participants. The following sections discuss each theme and its corresponding subthemes in greater detail, supported by representative excerpts from the interview data.

Perceived Usefulness of AI-Assisted Corpus Tools

The analysis revealed that participants generally perceived AI-assisted corpus tools as beneficial for supporting English language learning. Participants consistently described these tools as facilitating their learning process by improving their ability to interpret corpus data, understand authentic language use, and complete learning tasks more efficiently. Three subthemes emerged under this theme: Learning Efficiency, Authentic Language Learning, and AI as a Learning Mediator. Together, these subthemes illustrate how participants perceived AI-assisted corpus tools not merely as technological resources, but as meaningful learning support that enhanced their engagement with corpus-based English learning.

Learning Efficiency

The findings indicated that AI-assisted corpus tools contributed to greater learning efficiency among participants. Several participants reported that the integration of AI with corpus tools helped them save time when analyzing language data, searching for explanations, and completing course-related tasks. Instead of relying solely on manual corpus analysis, participants were able to obtain immediate explanations and guidance from AI, which facilitated a more efficient learning process.

Participant 3 specifically highlighted the time-saving benefits of AI-assisted corpus tools:

“AI-assisted corpus tools are very helpful because they can speed up the process of searching and analyzing language data. They also make it easier for me to understand language patterns and obtain explanations that are easier to comprehend.” (P3)

This response illustrates that participant 3 perceived AI-assisted corpus tools as reducing the complexity of corpus analysis by providing faster access to language patterns and clearer explanations. Rather than simply accelerating task completion, AI enabled the participant to engage with corpus data in a more manageable and accessible way.

A similar perspective was expressed by participant 1, who also emphasized the efficiency of AI-assisted corpus tools in supporting language analysis:

“...using corpus tools supported by AI makes language analysis much faster than manual methods because they help identify language patterns more efficiently.” (P1)

Participant 1's response complements the previous finding by highlighting AI's role in streamlining the analytical process. Beyond saving time, the participant perceived AI as facilitating the identification of language patterns that would otherwise require greater effort through manual corpus exploration. This suggests that AI-assisted corpus tools not only improved procedural efficiency but also enabled learners to allocate more attention to

understanding linguistic features rather than navigating technical aspects of corpus analysis.

Taken together, these responses demonstrate that participants consistently associated AI-assisted corpus tools with greater learning efficiency. Rather than viewing AI merely as a tool for completing tasks more quickly, they perceived it as meaningful learning support that reduced the effort involved in corpus analysis while making the learning process more manageable and productive.

Authentic Language Learning

Another perceived benefit identified by participants was the opportunity to learn English through authentic language use. Participants reported that corpus tools provided access to real examples of language use, enabling them to observe how words and expressions are used in actual contexts. This feature helped them develop a deeper understanding of vocabulary, collocations, and contextual meanings.

Participant 1 described how corpus tools supported contextual language learning:

“I can learn English through real language data rather than memorization. I also understand collocations and how words are used in formal and informal contexts.” (P1)

This response highlights that corpus tools encouraged participants to learn English through authentic language exposure rather than relying solely on memorization or textbook-based examples. By interacting with naturally occurring language data, participants were able to develop a more contextual understanding of vocabulary use and collocational patterns across different communicative situations.

This perspective was further reinforced by participant 3, who emphasized the value of authentic language examples available through corpus tools:

“I can find authentic examples of usage.” (P3)

Although brief, participant 3's response reflects the importance of accessing authentic examples as a means of understanding how language is used in real-life contexts. The availability of naturally occurring language data appeared to support learners in connecting linguistic forms with their actual communicative functions, thereby enriching their understanding beyond isolated vocabulary or grammatical rules.

Viewed as a whole, these responses demonstrate that participants perceived AI-assisted corpus tools as facilitating authentic language learning by providing direct access to real-world language use. Rather than learning English through decontextualized examples, participants valued the opportunity to explore vocabulary, collocations, and language patterns within authentic contexts, which contributed to a more meaningful and contextualized learning experience.

AI as a Learning Mediator

The analysis further revealed that participants viewed AI as a learning mediator that facilitated their interaction with corpus data. Rather than replacing the learning process, AI functioned as a supportive tool that helped participants interpret corpus results, clarify confusing information, and provide additional explanations when needed.

Participant 4 explicitly described AI as a learning aid:

“AI plays a major role as an assistant that helps explain corpus analysis results. It helps me interpret the data that I have obtained from COCA.” (P4)

This response reflects participant 4's perception of AI as a supportive intermediary that made corpus analysis more comprehensible. Instead of functioning as a substitute for learning, AI was viewed as assisting learners in interpreting corpus outputs and overcoming difficulties encountered during the analytical process.

A comparable perspective was expressed by participant 1, who similarly viewed AI as an essential source of support when working with corpus data:

“AI is like an assistant that helps interpret corpus data.” (P1)

Participant 1's response further emphasizes AI's role in facilitating learners' engagement with corpus resources by providing timely explanations and reducing uncertainty when interpreting linguistic information. These responses suggest that participants did not perceive AI as replacing their own analytical efforts; rather, they regarded it as a learning companion that supported their understanding throughout corpus-based learning activities.

Collectively, the interview data demonstrate that participants perceived AI as mediating the relationship between learners and corpus tools by bridging the gap between complex corpus data and students' understanding. This mediating role made corpus-based English learning more accessible, particularly for learners with limited experience in corpus analysis, while encouraging them to engage more confidently with authentic language data.

Challenges of AI-Assisted Corpus Tools

Although participants generally perceived AI-assisted corpus tools as beneficial for English language learning, the interviews also revealed several challenges that influenced their learning experiences. The reported difficulties mainly stemmed from limited familiarity with corpus tools, the complexity of corpus data, and concerns regarding the reliability of AI-generated outputs. These challenges suggest that while AI-assisted corpus tools offer valuable learning support, their effectiveness remains closely associated with learners' corpus literacy and their ability to critically evaluate AI-generated information. Two subthemes emerged under this theme: Information Overload and Lack of Familiarity, and Need for Verification of AI Responses.

Information Overload and Lack of Familiarity

One of the most common challenges reported by participants was the difficulty of understanding and interpreting corpus data, particularly among those who had limited prior experience with corpus tools. Participants explained that corpus interfaces contain numerous features and large amounts of language data, which can be overwhelming for beginners.

Participant 5 described this challenge as follows:

“The corpus data are quite extensive and sometimes confusing for me to understand because I am still learning how to use corpus tools.” (P5)

Participant 5's response illustrates that the difficulty did not primarily arise from the corpus data itself, but from limited familiarity with corpus tools and their analytical features. As a novice user, the participant perceived the volume and complexity of corpus information as cognitively demanding, making it more difficult to interpret language data independently.

This perception was echoed by participant 3, who highlighted specific aspects of corpus analysis that were difficult to understand:

“It is difficult to interpret concordance and frequency.” (P3)

Participant 3's response further demonstrates that learners may struggle with fundamental corpus analysis features, particularly when interpreting concordance lines and frequency information. These difficulties suggest that beginners require not only technical guidance but also sufficient opportunities to develop corpus literacy before they can effectively benefit from corpus-based learning activities.

Viewed as a whole, the interview data indicate that information overload and limited familiarity with corpus tools were closely interconnected. Rather than perceiving corpus tools as inherently difficult, participants' responses suggest that the complexity of corpus interfaces and analytical features became more challenging when learners lacked sufficient experience and corpus literacy. This finding highlights the importance of providing appropriate instructional support and gradual familiarization to help students engage more confidently with corpus-based English learning.

Need for Verification of AI Responses

Another challenge identified by participants was the necessity of critically evaluating AI-generated responses. Although AI was generally perceived as a helpful learning assistant, participants acknowledged that its explanations were not always accurate, specific, or aligned with the corpus data being analyzed.

Participant 2 highlighted this concern by stating:

“When AI is asked to analyze corpus data, the results are often not consistent with what should appear in the concordance output, so users need to be selective and evaluate the responses carefully.” (P2)

Participant 2's response demonstrates an awareness that AI-generated explanations should not be accepted uncritically. Instead, the participant emphasized the importance of comparing AI responses with actual corpus evidence to ensure that the interpretation accurately reflected the concordance results. This suggests that participants recognized the limitations of AI and understood the need to remain actively involved in the analytical process.

A similar perspective was expressed by participant 1, who viewed AI as a supplementary rather than primary analytical resource:

“AI is useful as a consultation tool, not for the main analysis.” (P1)

Participant 1's response reinforces the perception that AI was considered most valuable when used to support, rather than replace, learners' own analysis of corpus data. Instead of relying entirely on AI-generated interpretations, participants regarded AI as a source of guidance whose responses should be verified through corpus evidence and their own critical judgment.

Taken as a whole, these responses indicate that participants adopted a balanced approach toward the use of AI-assisted corpus tools. While they appreciated AI for providing explanations and assistance during corpus-based learning, they also recognized the importance of verifying AI-generated information before drawing conclusions. This finding highlights that effective use of AI-assisted corpus tools depends not only on the capabilities of the technology itself but also on learners' critical evaluation skills and their ability to interpret corpus evidence independently.

DISCUSSION

Perceived Usefulness of AI-Assisted Corpus Tools

The findings revealed that participants generally perceived AI-assisted corpus tools as beneficial for supporting their English language learning. The participants highlighted three major advantages, namely improving learning efficiency, facilitating access to authentic language use, and serving as a learning mediator when interpreting corpus data. These findings suggest that AI-assisted corpus tools support English language learning not only by improving learners' engagement with authentic language data but also by making corpus-based learning more accessible and manageable, particularly for learners with limited prior experience using corpus tools. This finding extends current discussions on AI-assisted language learning by demonstrating the pedagogical value of AI within corpus-based English learning, where AI functions as a supportive mediator rather than merely a general learning assistant.

The first perceived benefit concerned learning efficiency. Participants reported that AI helped them save time, understand corpus outputs more quickly, and simplify the process of analyzing language data. This finding aligns with An et al. (2025), who found that students tend to perceive AI-assisted language learning positively when the technology

improves learning performance and reduces learning effort. Similarly, Liu et al. (2025) reported that AI-supported language learning environments enabled learners to access information more efficiently and facilitated independent learning practices. The present findings also support Guo and Wang (2025), who found that AI applications can increase learners' academic engagement by providing immediate assistance and reducing barriers during the learning process. In this study, AI functioned as a supportive technology that allowed learners to navigate corpus data more efficiently, thereby enhancing their learning experience. Similar findings were reported by Arifatin and Setyaningrum (2024), who found that students generally perceived AI as a useful learning companion that facilitates understanding and supports independent learning activities. Likewise, Alenezi and Alenezi (2025) reported that both teachers and students viewed AI positively because it could provide immediate assistance and improve learning effectiveness in English language learning contexts. Beyond confirming these previous findings, the present study demonstrates that AI contributes to learning efficiency in a more specific context by reducing the procedural demands associated with corpus analysis. Rather than simply accelerating learning tasks, AI enabled participants to focus more on interpreting authentic language data, thereby making corpus-based learning more approachable for novice users.

Another important finding was the role of AI-assisted corpus tools in promoting authentic language learning. Participants appreciated the opportunity to explore real language usage through corpus data, particularly in understanding collocations, contextual meanings, and naturally occurring language patterns. This finding is consistent with corpus-based language learning literature, which emphasizes the value of authentic language data in developing learners' linguistic awareness. According to Götz and Granger (2024), corpus-based learning enables learners to examine language as it is genuinely used by speakers rather than relying solely on textbook examples. Similarly, Sun and Park (2023) highlighted that corpus-based instruction provides meaningful exposure to authentic collocations and lexical patterns, supporting vocabulary development and contextual understanding. Furthermore, Moreno-Ortiz (2025) argued that corpus tools facilitate deeper exploration of language use by allowing learners to investigate discourse patterns and linguistic features in authentic contexts. The present findings further suggest that AI can strengthen these benefits by helping learners interpret authentic corpus data more effectively. In this respect, AI not only supports access to authentic language resources but also facilitates learners' engagement with data-driven learning, particularly when they are still developing corpus literacy.

The findings further demonstrated that participants viewed AI as a learning mediator that helped them interpret corpus outputs and understand complex linguistic information. Many participants described AI as an assistant that translated technical corpus results into explanations that were easier to understand. This finding supports previous studies highlighting the instructional role of AI in language learning. Pham (2025) described AI tools as effective learning assistants that provide explanations, guidance, and immediate feedback to learners. Similarly, Pang et al. (2025) suggested that generative AI can function as a

personal tutor by supporting learners' understanding and promoting autonomous learning. In addition, Slamet (2024) reported that students perceived AI positively because it assisted them in overcoming learning difficulties and accessing explanations whenever needed. In the context of corpus-based learning, AI appears to bridge the gap between complex corpus data and learners' understanding, making corpus tools more accessible, particularly for novice users. The findings also support Belda-Medina and Kokošková (2024), who found that AI-assisted technologies can foster learner autonomy by providing personalized explanations and facilitating self-directed learning. As many participants in the present study were novice corpus users, AI appeared to reduce learning barriers and provide additional support during the process of interpreting corpus outputs. More importantly, the present findings refine existing understanding of AI-assisted language learning by illustrating that participants perceived AI not as a replacement for corpus analysis but as a mediator that facilitated their interaction with complex corpus data. This finding extends previous research on AI-assisted language learning by demonstrating that the educational value of AI in corpus-based English learning lies not only in providing immediate explanations but also in scaffolding learners' corpus literacy development and enabling more meaningful engagement with authentic language data. In this way, the study contributes to AI-integrated corpus pedagogy by positioning AI as an instructional mediator that supports learners' interpretation of corpus evidence rather than merely a language generation tool.

Challenges of AI-Assisted Corpus Tools

Despite the positive perceptions toward AI-assisted corpus tools, the participants also reported several challenges during their learning experiences. The findings revealed two major concerns, namely difficulties in understanding and interpreting corpus data and the need to verify AI-generated responses. These findings indicate that although AI can facilitate corpus-based learning, its effectiveness depends not only on the availability of technological support but also on learners' ability to understand corpus data and critically evaluate AI-generated information. This finding highlights that successful AI-integrated corpus pedagogy requires the development of both corpus literacy and critical AI literacy to ensure that learners can use AI-assisted corpus tools effectively and responsibly.

One of the most frequently reported challenges was information overload and learners' lack of familiarity with corpus tools. Most participants described corpus-based learning as a new experience and reported difficulties in understanding corpus features, interpreting concordance lines, and selecting relevant data from large search results. This finding is consistent with previous research indicating that corpus tools often present a steep learning curve for novice users. Götz and Granger (2024) argued that although corpus-based learning offers valuable opportunities for language exploration, learners frequently struggle with the complexity of corpus interfaces and analytical procedures. Similarly, D. Li et al. (2025), in their systematic review of corpus-based instruction, identified technical complexity and difficulties in data interpretation as common challenges experienced by EFL learners. These difficulties may become even more pronounced when learners have limited prior experience with corpus analysis.

The participants' experiences also support the findings of Ma et al. (2023), who reported that successful integration of corpus tools depends heavily on users' corpus literacy and their ability to interpret linguistic data appropriately. Several participants acknowledged that they initially found corpus outputs confusing and required additional support to understand the information presented. Likewise, Oktavianti et al. (2026) found that students often require guidance and scaffolding when engaging with corpus-based learning activities, particularly when corpus tools are integrated with emerging technologies. Therefore, while AI-assisted corpus tools provide valuable learning opportunities, learners may still encounter difficulties if they lack sufficient knowledge of corpus concepts and analytical techniques.

This finding is further supported by Ma and Mei (2021), who emphasized that effective corpus-based learning requires learners to develop sufficient corpus literacy and analytical skills. Without adequate understanding of corpus functions and output interpretation, learners may experience difficulties in extracting meaningful linguistic insights from corpus data. This challenge was evident in the present study, where several participants reported confusion when interpreting concordance lines, collocations, and large amounts of corpus-generated information. Beyond supporting previous studies, the present findings demonstrate that AI alone cannot eliminate the challenges associated with corpus-based learning. Instead, AI functions most effectively when learners possess sufficient corpus literacy to interpret corpus outputs and critically engage with the explanations provided. This finding reinforces the importance of combining technological support with explicit corpus literacy instruction in AI-integrated English language learning.

Another significant challenge identified in this study was the need to verify AI-generated responses. Although participants appreciated AI's ability to provide explanations and interpretations, they consistently expressed concerns regarding the accuracy, specificity, and reliability of AI-generated information. Several participants reported that AI occasionally produced explanations that were overly general, lacked contextual relevance, or did not accurately reflect the corpus data being analyzed. Consequently, they felt the need to cross-check AI-generated outputs against corpus evidence or other reliable sources before accepting the results.

Similar concerns have been identified in previous studies. Karataş et al. (2024) reported that although AI can facilitate language learning and provide learning support, students remain cautious about the accuracy and reliability of AI-generated responses. Likewise, Chukhno (2024) found that both teachers and learners acknowledged the educational benefits of generative AI while simultaneously expressing concerns regarding inaccurate, incomplete, or contextually inappropriate responses. These findings suggest that AI should be used as a supplementary learning tool rather than a definitive source of linguistic knowledge.

This finding aligns with Lee et al. (2024), who reported that students perceived AI-generated responses as useful but not always trustworthy, particularly when dealing with complex academic tasks. Similarly, Nugroho et al. (2023) highlighted that while AI can facilitate language learning, users should remain cautious because AI-generated content may contain inaccuracies or misleading interpretations. Rebolledo Font de la Vall and

González Araya (2023) further noted that one of the major challenges associated with AI-assisted language learning is the tendency of learners to over-rely on AI outputs without sufficient critical evaluation. In addition, Wu et al. (2024) found that learners' intention to use AI is influenced not only by perceived usefulness but also by their confidence in evaluating the quality of AI-generated information.

The present findings also support EL Hosayny et al. (2025), who emphasized that AI adoption in educational contexts should be accompanied by critical thinking skills and reflective evaluation practices. In the context of AI-assisted corpus learning, learners need to assess whether AI interpretations accurately represent corpus evidence rather than accepting explanations uncritically. Therefore, the findings suggest that AI should be viewed as a supportive learning tool rather than an authoritative source of knowledge. Developing learners' corpus literacy, digital literacy, and critical thinking skills may help maximize the benefits of AI-assisted corpus tools while minimizing potential risks associated with inaccurate or overly generalized AI-generated responses.

The importance of maintaining critical judgment when using AI is also highlighted by Y. Li et al. (2025), who found that university students generally demonstrated positive attitudes toward AI adoption while recognizing the necessity of independently evaluating AI-generated information. Accordingly, successful integration of AI-assisted corpus tools requires learners not only to utilize technological support but also to develop the analytical skills needed to assess the quality and appropriateness of AI-generated interpretations. Taken together, these findings extend previous discussions on AI-assisted language learning by demonstrating that effective AI-assisted corpus learning depends on the complementary roles of AI, corpus literacy, and learners' critical judgment. Rather than replacing learners' analytical processes, AI should be integrated as a pedagogical support that encourages learners to engage critically with corpus evidence while developing the skills necessary to interpret authentic language data independently. Theoretically, these findings contribute to AI-integrated corpus pedagogy by suggesting that AI functions most effectively as an instructional mediator that supports learners' corpus literacy development and scaffolds their interaction with authentic language data. Pedagogically, the findings indicate that AI-assisted corpus learning should be accompanied by explicit instruction on corpus literacy, digital literacy, and critical evaluation skills so that students can interpret corpus evidence independently and use AI responsibly within English language learning contexts. This perspective underscores that the successful implementation of AI-assisted corpus tools is not determined by technology alone but by how technological support, corpus literacy, and critical evaluation are integrated within English language learning. Future research is recommended to examine AI-assisted corpus learning across different learner populations, educational settings, and proficiency levels, as well as to investigate the longitudinal effects of AI-assisted corpus learning on corpus literacy development, learner autonomy, and English language learning outcomes.

CONCLUSION

This study explored Indonesian master's students' perceptions at Universitas Ahmad Dahlan regarding the usefulness and challenges of AI-assisted corpus tools in English language learning. Students generally perceived the tools positively, particularly for improving learning efficiency, facilitating access to authentic language use, and supporting corpus data interpretation. However, challenges included difficulties interpreting corpus outputs, limited corpus literacy, and concerns about the accuracy and contextual appropriateness of AI-generated responses. These findings suggest that effective AI-assisted corpus learning depends on learners' ability to critically evaluate AI-generated information and understand corpus data independently. Integrating AI into corpus-based language pedagogy should therefore include explicit instruction in corpus literacy, digital literacy, and critical thinking. The study contributes to AI-integrated corpus pedagogy by highlighting AI as a supportive mediator that facilitates engagement with corpus resources while encouraging corpus literacy and critical evaluation. Future research should examine different learner populations, including undergraduate students and pre-service English teachers, and learners with varying English proficiency. Studies should also investigate corpus literacy, digital literacy, and critical thinking as factors influencing AI-assisted corpus learning, using longitudinal, mixed-methods, or experimental designs across diverse educational settings to examine effects on language development and corpus literacy over time.

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Research Article

Exploring Gender-Associated Patterns of Politeness and Directness in EFL Students' Prompts to Generative AI

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ABSTRACT

This study investigates how EFL students employ politeness and directness strategies in their prompts to Generative AI and explores the underlying motivations shaping these linguistic choices. While prior studies have examined gendered communication and prompt effectiveness separately, limited research has integrated these perspectives within AI-mediated interaction. Grounded in Politeness Theory, the CCSARP framework, and Genderlect Theory, this study adopts a qualitative design combining directed content analysis and thematic analysis. The dataset consists of twenty-six prompts generated by four Indonesian EFL students, supported by semi-structured interviews. Findings reveal that bald-on-record and conventionally indirect strategies dominate, reflecting a balance between efficiency and minimal politeness. Thematic analysis identifies four key factors influencing prompting behavior: politeness strategies, directness strategies, variation strategies, and perceptions of AI. Politeness is shaped by sociocultural norms and expectations of improved output quality, whereas directness is driven by efficiency and reduced cognitive effort. Participants also demonstrate adaptive prompting behavior, reflecting emerging AI literacy through iterative refinement. Importantly, no strong gender-based differences were observed, suggesting that individual preferences and task demands play a more significant role. The study highlights that politeness and directness function as complementary strategies in AI-mediated communication and offers implications for developing AI literacy in language learning contexts.

Keywords: *Generative AI, EFL learners, politeness strategies, directness strategies*

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INTRODUCTION

The global educational landscape has undergone a radical transformation with the rapid integration of Generative Artificial Intelligence (AI). Large Language Models (LLMs) such as ChatGPT, Gemini, and Claude have quickly transitioned from experimental technologies to ubiquitous, indispensable tools in academia. This shift is particularly pronounced within the context of English as a Foreign Language (EFL) learning, where students frequently face barriers related to limited access to native speakers and individualized feedback (Dwivedi et al., 2023; Kasneci et al., 2023; Zawacki-Richter et al., 2023). Unlike traditional internet search engines that merely retrieve indexed links, Generative AI operates fundamentally differently by utilizing deep learning to generate novel, contextually relevant text. Thus, AI has evolved from a passive database into an active “conversational partner” and sophisticated virtual assistant. For EFL students, these platforms serve dynamic roles: they act as on-demand writing tutors, dynamic grammar correctors, and realistic conversation simulators that offer immediate, personalized scaffolding (Jeon, 2024). Because these systems require instructional input to function, students no longer simply “search” for static answers; rather, they “prompt” a responsive entity. This interactive loop requires EFL learners to continuously formulate instructional commands, requests, and inquiries in their target language, thereby turning the act of prompting itself into a distinct site of language production and sociolinguistic behavior.

As Generative AI systems have become increasingly sophisticated, often mimicking human conversational patterns, utilizing empathetic language, and even apologizing for errors, the nature of user interaction has shifted dramatically. These human-like conversational characteristics encourage users to engage with AI systems in more natural and socially oriented ways, rather than relying solely on keyword-based or command-driven inputs (Kasneci et al., 2023; Li et al., 2025; Zawacki-Richter et al., 2023). Modern users frequently abandon rigid, keyword-based search queries in favor of natural, everyday language. This behavioral shift is rooted in the Computers Are Social Actors (CASA) paradigm, originally proposed by Reeves and Nass (1996), which suggests that people subconsciously apply social rules and interpersonal heuristics to computers when they display human-like characteristics. Recent studies further indicate that these social responses become more pronounced when AI systems exhibit natural conversational styles and human-like linguistic cues (Li et al., 2025).

“Gender may influence how EFL students interact with Generative AI”

This anthropomorphization of technology has birthed a highly observable spectrum of interaction. At one end of the spectrum, users instinctively “humanize” the AI. They embed conversational niceties, social pleasantries, and relational markers into their prompts, utilizing phrases like “Could you please help me with...” or “Thank you for that explanation.” This behavior is often driven by the AI’s conversational interface, which triggers a psychological sense of social presence (Li et al., 2025). Conversely, at the other end of the spectrum, users treat the system strictly as a utilitarian tool. Adopting a “prompt

engineering” mindset, these users strip away all social fluff, issuing blunt, highly directive commands such as “Translate this text” or “Rewrite this paragraph to be more formal” (Dobariya, 2026). This dichotomy raises profound questions regarding how deeply human social conditioning dictates our communicative behavior toward non-sentient digital entities that possess neither feelings nor consciousness.

This spectrum of human-AI interaction intersects significantly with recent sociolinguistic research regarding gender and language use. Contemporary empirical studies continue to demonstrate that male and female speakers frequently employ distinctly different communication styles, particularly regarding linguistic politeness and directness. Recent analyses indicate that female communicators often utilize more mitigated speech, cooperative discourse styles, and negative politeness strategies such as hedging (“I think,” “maybe”) and indirect requests to maintain social harmony and minimize face-threatening acts (Aini et al., 2023). In contrast, male communicators are frequently observed favoring direct, assertive language and bald-on-record strategies, emphasizing factual information exchange and task completion over relational maintenance (Bakhtiyarovna, 2024). Bringing this sociolinguistic perspective into the digital era raises an important question about whether such gender-related linguistic patterns are also manifested when users communicate with generative AI. Unlike human interlocutors, AI systems do not possess feelings, social status, or a physical gender, yet users may still draw upon familiar linguistic and sociocultural norms when formulating their prompts.

Although previous research has examined gendered politeness and directness in human communication and prompting practices in generative AI separately, limited empirical research has investigated how gender-related patterns of politeness and directness are manifested in EFL learners’ prompts to generative AI and, importantly, how learners themselves explain these linguistic choices. Sociolinguistic studies have documented gender-related differences in politeness and directness in interpersonal communication (Aini et al., 2023; Bakhtiyarovna, 2024), while research on generative AI in education has primarily examined prompting from technical and pedagogical perspectives, including prompt effectiveness, response quality, and learning support (Dobariya, 2026; Jeon, 2024). These strands of research have developed largely independently, leaving the linguistic and sociocultural dimensions of EFL learners’ prompts relatively underexplored. Addressing this gap is particularly relevant because prompts can be understood not merely as technical instructions but also as instances of language use through which learners may enact, adapt, or negotiate socially learned communication patterns in interaction with a non-human conversational agent.

To address this gap, the present study qualitatively examines the politeness and directness strategies employed by male and female EFL students in their prompts to generative AI and explores the sociocognitive reasons underlying these linguistic choices. The analysis is informed by Brown and Levinson’s (1987) Politeness Theory, the Cross-Cultural Speech Act Realization Project (CCSARP) framework (Blum-Kulka et al., 1989), and Tannen’s (1990) Genderlect Theory. By examining both the linguistic patterns in learners’ prompts and their explanations for those patterns, the study seeks to provide a more

comprehensive understanding of how gender-related communication practices may be reflected and negotiated in AI-mediated language use.

The study is expected to contribute to the literature in several ways. Theoretically, it broadens the application of sociolinguistic theories by examining gender-related politeness and directness in AI-mediated discourse, thereby extending these perspectives beyond conventional interpersonal communication. It also contributes to research on human-AI interaction by demonstrating that prompt construction can be examined not only as a technical process but also as a sociolinguistic practice. Practically, the findings may inform AI literacy and EFL pedagogy by providing insights into how learners formulate prompts and helping educators support students in developing effective and contextually appropriate communication strategies when interacting with generative AI. Rather than assuming that gender directly determines learners' communication styles, this study focuses on identifying patterns of politeness and directness and understanding the sociocognitive factors that may shape these linguistic choices. To address these objectives, the study is guided by the following research questions:

- (1) How do EFL students construct politeness and directness in prompts to generative AI, and what patterns emerge across male and female participants?
- (2) What are the underlying reasons motivating their choices of politeness and directness strategies when interacting with generative AI?

LITERATURE REVIEW

Genderlect Theory (Deborah Tannen, 1990)

The conceptualization of gender-related variation in language use is informed by Deborah Tannen's (1990) Genderlect Theory, originally developed to explain differences in conversational styles between men and women. Tannen proposed that communication can be understood as a form of cross-cultural interaction because individuals may be socialized into different communicative norms and expectations. Her framework distinguishes between Rapport Talk, which emphasizes connection, involvement, and relationship maintenance, and Report Talk, which emphasizes information, independence, and status. Although this distinction was originally developed in the context of interpersonal conversation, it provides a useful theoretical lens for examining how socially learned communication orientations may be reflected in other communicative environments.

Recent research suggests that gender and language should not be understood through rigid or universal differences between men and women. Rather, gender-related linguistic patterns are influenced by contextual, cultural, interactional, and social factors. Contemporary sociolinguistic research therefore increasingly treats gender as one factor that may interact with other dimensions of identity and communicative context rather than as a direct determinant of language behavior. This perspective is particularly relevant to EFL contexts, where learners' linguistic choices may reflect both their developing proficiency in English and sociocultural expectations concerning appropriate communication.

Within Tannen's framework, Rapport Talk is associated with relationship-oriented communication, whereas Report Talk is associated with information-oriented and status-conscious communication (Tannen, 1990). These orientations can provide a conceptual basis for examining features such as mitigation, politeness, directness, and assertiveness. However, these associations should not be interpreted as fixed characteristics of female or male speakers. Instead, they provide analytical possibilities for investigating whether participants display different patterns in particular communicative contexts. This distinction is important in the present study because the purpose is not to assume that female participants are inherently more polite or that male participants are inherently more direct, but to examine whether such gender-related patterns emerge in their AI-mediated language use.

The relevance of gender-related communication patterns has also extended to digital and human-computer interaction. Recent research on human-machine communication indicates that users do not necessarily abandon social and communicative expectations when interacting with artificial agents. Ding et al. (2024), for example, found evidence of gender-related effects in human-machine communication, suggesting that gender may remain relevant to how people respond to artificial communication partners. Similarly, research on human-machine interaction has demonstrated that users may attribute social characteristics to artificial agents and adapt their communication according to expectations about the interaction. These findings support the relevance of examining gender-related language behavior in AI-mediated contexts while also emphasizing that such patterns should be investigated empirically rather than assumed in advance.

In the present study, Genderlect Theory therefore serves as a theoretical lens for interpreting possible differences in politeness, directness, and other linguistic features between male and female EFL students' prompts. The framework does not predict that all female participants will use Rapport Talk or that all male participants will use Report Talk. Instead, it provides a conceptual basis for examining whether patterns associated with relationship-oriented or information-oriented communication appear in the participants' prompts and how participants themselves explain their linguistic choices.

Politeness Theory, Brown and Levinson's (1987)

Politeness Theory is primarily based on the framework proposed by Brown and Levinson (1987), which centers on the concept of face, or an individual's public self-image in social interaction. The theory distinguishes between positive face, referring to the desire to be appreciated, approved of, or accepted, and negative face, referring to the desire for autonomy and freedom from imposition. Because communicative acts may threaten either dimension of face, speakers may employ different strategies to manage interpersonal relationships and reduce potential face threats.

Brown and Levinson (1987) identified four major politeness strategies: bald-on-record, positive politeness, negative politeness, and off-record strategies. Bald-on-record strategies express an intention directly and explicitly without substantial mitigation, whereas positive politeness emphasizes solidarity, familiarity, or shared identity. Negative

politeness emphasizes respect for the interlocutor's autonomy and may involve indirectness, hedging, apologies, or other mitigating devices. Off-record strategies communicate an intention indirectly and require the interlocutor to infer the intended meaning.

Although Brown and Levinson's framework originated in the analysis of human-to-human communication, recent research has demonstrated that politeness remains relevant to interactions between humans and artificial agents. A systematic review by Koc et al. (2023) shows that politeness has become an important area of investigation in human-machine interaction because users may apply social communication norms even when interacting with technological systems. Similarly, recent experimental research has examined how the level of politeness in prompts influences interactions with large language models. Yin et al. (2024), for example, found that the effects of prompt politeness can vary across languages and tasks, indicating that politeness remains a meaningful dimension of human-LLM communication even though an LLM does not possess human feelings or social face.

These developments make Politeness Theory relevant to the present study. When EFL students formulate prompts, they may use linguistic features that resemble politeness strategies found in interpersonal communication, such as greetings, appreciation, hedging, modal expressions, and indirect requests. However, the presence of these features should not automatically be interpreted as evidence that students perceive the AI as a human interlocutor. Instead, such linguistic choices may reflect habitual communication practices, pragmatic conventions, task expectations, or participants' perceptions of appropriate interaction with AI. Therefore, Politeness Theory is used in this study as an analytical framework for identifying and describing politeness strategies manifested in participants' prompts.

Directness in Human-AI Interaction: The CCSARP Framework

To analyze the degree of directness in participants' prompts, this study adopts the Cross-Cultural Speech Act Realization Project (CCSARP) framework developed by Blum-Kulka, House, and Kasper (1989). The framework classifies request strategies according to their degree of directness, distinguishing among direct strategies, conventionally indirect strategies, and non-conventionally indirect strategies. Direct strategies explicitly state the intended action, as in "Write an essay" or "Explain this concept." Conventionally indirect strategies use forms that are conventionally associated with requests while providing some degree of mitigation, such as "Could you summarize this text?" Non-conventionally indirect strategies rely more heavily on contextual inference, as in "This paragraph seems too long," when the statement implicitly functions as a request for revision.

Although CCSARP is a foundational framework developed for human speech-act realization, its directness continuum provides a useful analytical structure for examining requests and instructions addressed to generative AI. Recent research on LLM interaction demonstrates that users vary in how they formulate instructions and that prompt language can influence the nature and effectiveness of AI interaction. In particular, research on AI

literacy and prompt engineering conceptualizes prompting as the formulation of precise and structured instructions to obtain desired responses from LLM-based systems. This perspective suggests that directness in AI prompts may be shaped not only by interpersonal considerations but also by users' understanding of how AI systems respond to instructions.

The application of CCSARP in the present study therefore does not assume that requests directed toward AI operate in exactly the same way as requests directed toward human interlocutors. Instead, the framework is used descriptively to identify the degree of explicitness in participants' prompts. The analysis examines whether participants employ direct, conventionally indirect, or non-conventionally indirect forms and whether these patterns vary across the male and female cases. Genderlect Theory provides the broader sociolinguistic perspective for interpreting possible gender-related patterns, while CCSARP provides the specific categories for analyzing directness.

“Prompt-ese” and AI Literacy

The increasing use of generative AI has introduced new forms of interaction in which users communicate with large language models through written prompts. Prompting is increasingly understood not simply as a technical skill but as a communicative practice involving the formulation of instructions, questions, contextual information, and desired outputs. Recent research describes prompt engineering as the ability to formulate precise and well-structured instructions to guide LLMs toward desired responses and identifies it as an important component of effective interaction with generative AI (Walter, 2024). Research on AI literacy likewise emphasizes that effective interaction with generative AI requires users to understand how to communicate with, evaluate, and critically engage with AI systems.

The term “Prompt-ese” can be used to describe the emerging style of communication associated with prompting, particularly its tendency toward concise, structured, explicit, and task-oriented language. However, this style should not be assumed to be uniform across users. Prompt construction may vary according to users' linguistic competence, familiarity with AI, communicative goals, task demands, and sociocultural backgrounds. Recent work on AI literacy and prompt engineering suggests that users' prompting practices can reflect different levels of knowledge and adaptation when interacting with LLM-based systems. Thus, prompt construction can be examined as both a functional practice for obtaining AI outputs and a form of language use.

This perspective is particularly relevant to the present study because the participants are EFL students communicating with generative AI in English. Their prompts may simultaneously reflect the functional demands of communicating with an AI system and linguistic patterns associated with their existing communicative practices. Rather than assuming that gender determines how participants prompt AI, the study examines whether gender-related patterns of politeness, directness, and linguistic modification emerge across the four participant cases. The analysis then draws on stimulated-recall interviews to explore how participants themselves explain their prompting choices. In this way, AI literacy and prompting provide the technological context of the study, while Genderlect

Theory, Politeness Theory, and CCSARP provide complementary lenses for analyzing the linguistic and sociolinguistic dimensions of participants' prompts.

METHOD

Research Design and Context

This study employed a qualitative comparative descriptive design using directed qualitative content analysis of elicited prompts and thematic analysis of stimulated-recall interviews to address its research aims. The comparative descriptive design was selected to examine patterns of politeness and directness in prompts produced by male and female EFL students and to explore how these patterns may differ across the two groups. The directed qualitative content analysis was used to systematically analyze the linguistic features of the elicited prompts based on the predefined categories derived from Brown and Levinson's (1987) Politeness Theory and the Cross-Cultural Speech Act Realization Project (CCSARP) framework (Blum-Kulka et al., 1989). Meanwhile, thematic analysis of stimulated-recall interviews was employed to explore how participants explained the linguistic choices they made when constructing their prompts. According to Creswell and Creswell (2022), qualitative research is appropriate for investigating complex social and linguistic processes because it enables researchers to interpret participants' meanings, experiences, and interactions within their contexts. Accordingly, this design allows the study to provide a systematic comparison of linguistic patterns across male and female participants while also capturing the participants' own explanations of their prompt construction. Rather than making broad claims about inherent gender differences, the study focuses on identifying gender-related patterns in the data and understanding the sociocognitive factors that participants associate with their linguistic choices.

Participants

Purposive sampling was used to select participants who met specific criteria relevant to the study (Wan, 2019). The participants were required to be Indonesian EFL university students, have experience using generative AI, lack prior knowledge of prompting techniques, and be willing to participate. Based on a screening questionnaire, four participants (P1–P4) were selected through the Participant Screening Questionnaire. A small sample size is appropriate for qualitative research, which prioritizes in-depth exploration rather than statistical generalization. Accordingly, this study involved four undergraduate EFL students from an Indonesian university, consisting of two female and two male participants to ensure balanced gender representation. Participants were selected through purposive sampling based on the following criteria: (1) they were undergraduate EFL students enrolled between the second and eighth semesters; (2) they had prior experience using Generative AI (e.g., ChatGPT) for academic or English learning purposes; (3) they were willing to complete all prompting tasks and participate in follow-up interviews; and (4) they represented both male and female groups, which was essential for addressing the research objective of comparing gendered prompting strategies. The limited number of participants allowed for detailed analysis of each participant's prompts and interview responses, enabling an in-depth examination of linguistic patterns and the sociocognitive motivations

underlying their interactions with Generative AI. Prior to data collection, all participants were provided with an information sheet explaining the purpose of the study, the research procedures, their rights as participants, and the measures taken to ensure confidentiality and anonymity. Participants were informed that their participation was entirely voluntary and that they could withdraw from the study at any time without any consequences. After receiving this information and having the opportunity to ask questions, each participant voluntarily signed a written informed consent form before participating in the prompt collection and semi-structured interviews. This sampling approach ensured that all participants were directly relevant to examining how EFL students construct prompts in AI-mediated interactions.

Data Collection

The data collection procedure was conducted sequentially to support methodological triangulation and to address the two research objectives. The first stage involved a Prompt Elicitation Task, in which four participants (two males and two females) were instructed to use a generative AI platform, ChatGPT, to write a short argumentative essay. The task was designed to elicit naturally occurring prompting behavior within a controlled context and to provide comparable linguistic data across participants. The task instructions were developed to reflect the intended language-use context and were reviewed through expert judgment to establish content validity. The instructions were distributed online through a WhatsApp group, after which participants individually completed the task using ChatGPT to ensure consistency in the elicitation procedure. The session lasted approximately 15–20 minutes, during which participants constructed prompts and generated AI responses. Immediately after completing the task, participants submitted their unedited chat logs through screenshots or history links to a designated submission link. These chat logs served as the primary data for analyzing participants' politeness and directness strategies.

In the second stage, the researcher conducted stimulated-recall interviews based on the participants' elicited prompts and chat logs. This procedure enabled participants to revisit their own prompts and explain the reasons behind particular linguistic choices. The interview guide was developed based on Brown and Levinson's (1987) Politeness Theory and the Directness framework of the Cross-Cultural Speech Act Realization Project (CCSARP) (Blum-Kulka et al., 1989). The interview guide was validated through expert judgment and consisted of seven main questions with additional follow-up probes. The interviews were conducted individually via Zoom in the participants' mother tongue to minimize potential misunderstanding and allow participants to explain their reasoning comfortably. Each interview lasted approximately 10–15 minutes. The interviews were used to complement the prompt data by providing participants' own explanations of their linguistic choices and to clarify interpretations of potentially ambiguous prompt features.

To ensure the trustworthiness of the qualitative data, the study followed the criteria proposed by Lincoln and Guba (1985), namely credibility, transferability, dependability, and confirmability. Credibility was supported through data triangulation between the elicited prompts and stimulated-recall interviews, as well as member checking to confirm the accuracy of participants' explanations and interpretations. Representative excerpts from

the data were retained to support the interpretations. Transferability was addressed by providing detailed descriptions of the research context, participant characteristics, and participant selection criteria so that readers can assess the applicability of the findings to similar contexts. Dependability was supported by maintaining a systematic record of the research procedures, including the development and validation of the instruments, data collection procedures, coding decisions, and an audit trail. Confirmability was strengthened by grounding interpretations in the participants' actual prompts and interview responses, using peer debriefing as an additional analytic check, and maintaining researcher reflexivity throughout the research process to minimize the influence of researcher assumptions.

Data Analysis

The qualitative data analysis involved two sources: elicited prompts and stimulated-recall interview transcripts. The analysis was conducted systematically to identify patterns of directness and politeness and to explore participants' motivations for their linguistic choices. First, each interaction was segmented into individual prompts, with each prompt treated as the primary unit of analysis. The dataset consisted of 26 prompts produced by four EFL students, comprising two males and two females. The prompts were analyzed in their original form without modifying participants' wording.

Next, the prompts were coded for directness using the CCSARP framework (Blum-Kulka et al., 1989), covering direct, conventionally indirect, and non-conventionally indirect strategies. They were then coded according to Brown and Levinson's (1987) Politeness Theory, including bald-on-record, positive politeness, negative politeness, and off-record strategies. Additional linguistic modifiers, such as please, hedges, appreciation, greetings, apologies, and modal verbs, were also identified. Multiple coding was permitted when a prompt contained more than one relevant strategy or feature. Frequency counts were used descriptively to show the distribution of codes and were not subjected to statistical inference.

Following coding, the data were organized into participant-level matrices (P1-P4) and compared descriptively across male and female participants. This comparison focused on patterns within the sample rather than generalizable gender differences. The stimulated-recall interviews were subsequently analyzed using the six-phase thematic analysis of Braun and Clarke (2006), involving familiarization, initial coding, theme development, review, definition, and reporting. Finally, the prompt findings and interview themes were integrated to connect participants' observed linguistic choices with their reported motivations. The integrated findings were presented through descriptive tables, narrative interpretation, and representative excerpts.

FINDINGS

RQ1: Patterns of Politeness and Directness in EFL Students' AI Prompts

The first objective of the study covers the politeness and directness strategies based on their frequency of occurrence. The findings include the distribution of politeness strategies, the

frequency of directness levels, and ultimately the gender-based comparisons across both dimensions.

Politeness Strategies

The following table presents the distribution of politeness strategies employed by the participants based on the framework. The data are categorized according to strategy type and participant, showing the frequency of each strategy across all prompts.

Table 1
Politeness Strategy Frequency

Strategy	P1 (M)	P2 (F)	P3 (M)	P4 (F)	Total
Bald on record	5	4	1	1	11
Negative Politeness	2	1	4	4	9
Negative + Positive (Mixed)	1	0	2	2	5
Positive Politeness	0	0	2	4	3
Bald on record + Positive	1	0	1	0	2
Off Record	0	0	0	0	0
Total Prompts	8	5	6	7	26

The data in Table 1 show that bald-on-record was the most dominant politeness strategy, occurring in 11 of 26 prompts (42%). This strategy reflects participants' preference for direct and efficient communication, as illustrated by expressions such as "I want to discuss with you..." (P1), "That is not true." (P1), and "make me an initial draft..." (P2). Negative politeness was the second most frequent strategy, with nine occurrences, indicating attempts to reduce imposition through expressions such as "Can you help me develop..." (P3) and "I think they are still a bit general. Can you make them more specific..." (P3). A combination of negative and positive politeness occurred in five instances, suggesting that participants sometimes balanced directness with interpersonal consideration. Positive politeness appeared only three times, while off-record strategies were not identified. At the individual level, P1 and P2 contributed most to bald-on-record strategies, P3 showed greater use of negative politeness, and P4 displayed a relatively balanced pattern. Overall, the findings reveal no consistent gender-based pattern, with variation appearing primarily at the individual level.

Directness Strategies

The following table presents the distribution of directness strategies employed by the participants based on the framework. The data are categorized according to strategy type and participant, showing the frequency of each strategy across all prompts.

Table 2.*Directness Strategy Frequency*

Strategy	P1 (M)	P2 (F)	P3 (M)	P4 (F)	Total
Conventionally Indirect	2	1	5	6	10
Direct Command (Imperative)	4	4	0	1	9
Mixed (Direct + Conv Indirect)	1	0	1	1	3
Non-Conventionally Indirect (hint)	1	0	1	0	2
Total Prompts	8	5	6	7	26

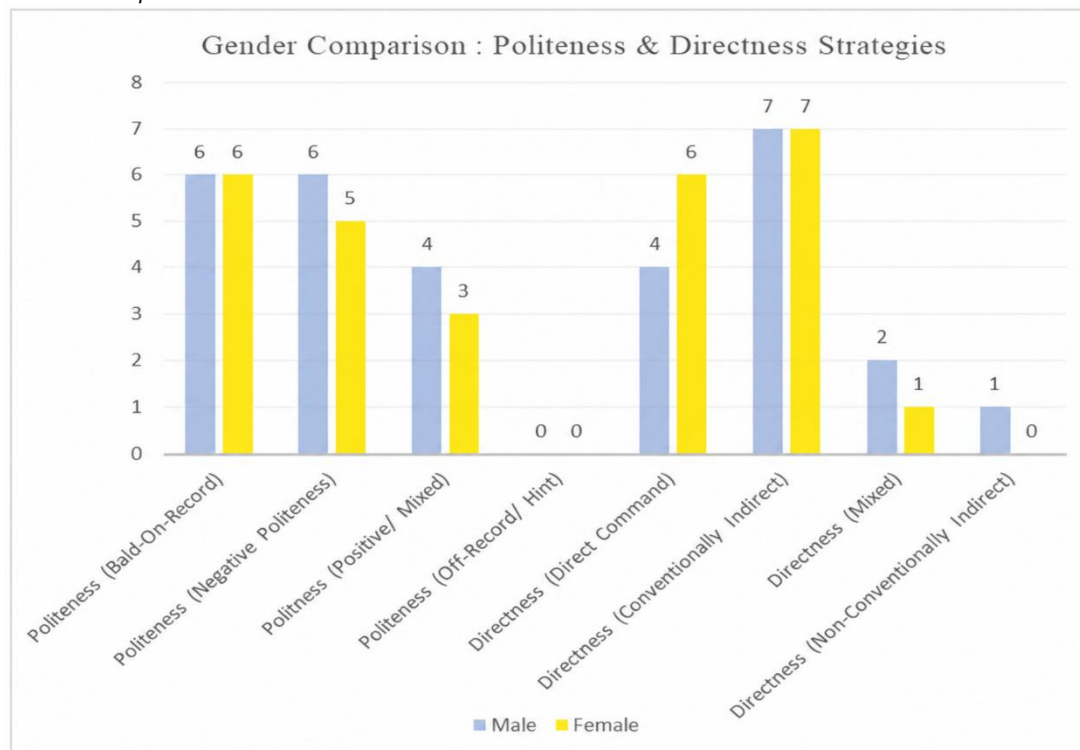
Table 2 shows that conventionally indirect strategies were the most frequently used, occurring in 10 of 26 prompts (38%). This indicates a preference for maintaining clarity while softening requests through conventional forms, particularly modal verbs such as *can* and *could*, as in “Could you give me some interesting topic...” (P1) and “Can you help me develop...” (P3). Direct commands (imperatives) were the second most frequent, with 9 occurrences (35%), reflecting participants’ preference for efficiency and explicitness in expressions such as “make me an essay outline...” and “Write a short argumentative paragraph...” (P2). The mixed strategy (direct + conventionally indirect) occurred 3 times (12%), demonstrating pragmatic flexibility in combining explicit statements with softened requests. Meanwhile, non-conventionally indirect strategies (hints) appeared only 2 times (8%), indicating limited use of highly implicit forms. At the individual level, P3 (M) favored conventionally indirect strategies, P2 (F) predominantly used direct commands, P1 (M) showed a mixed pattern, and P4 (F) displayed relatively balanced use. Overall, the findings show no consistent gender-based pattern and suggest that participants’ prompting strategies reflect a continuum between clarity, efficiency, and politeness, with limited reliance on highly implicit forms.

Patterns Across Male and Female Participants

Figure 1 presents the comparison between male and female participants regarding the use of Politeness Strategies (Brown & Levinson, 1978) and Directness Strategies based on Blum-Kulka et al., 1989). It compares politeness and directness strategies across male and female participants. Overall, both groups show broadly similar pragmatic patterns, suggesting that gender is not a strong determining factor in strategy selection. For politeness, both groups used bald-on-record equally (6 instances each), while males showed slightly higher use of negative politeness (6 vs. 5) and positive politeness (4 vs. 3). Off-record strategies were absent in both groups, indicating a shared preference for clarity and explicitness. For directness, females used more direct commands (6 vs. 4), whereas conventionally indirect strategies were equally frequent (7 instances each). Mixed strategies were slightly higher among males (2 vs. 1), while non-conventionally indirect strategies appeared only once among males. Overall, the differences were minor, and both groups demonstrated a similar balance between directness, efficiency, and politeness. These findings suggest that

individual preferences and task context may have a greater influence than gender on prompting strategies in AI-mediated communication.

Figure 1
Gender Comparison



RQ2: Participants' Reported Motivations for Using Politeness and Directness Strategies in Generative AI Interaction

The second objective of the study explores the underlying reasons for participants' choices of politeness and directness strategies. The thematic analysis was employed to address the objective, resulting in the frequency of merged codes that will represent the development of the nine categories and four major themes. In addition, the data from the interview was presented partially for each participant to collect motivation or the reason behind the prompt strategies that were supported by the interview data.

Participant 1 (Male)

P1 primarily perceived AI as a practical learning tool while maintaining control over the interaction. His use of politeness was largely habitual and influenced by Indonesian communication norms, with an expectation that polite prompts might produce better responses. In contrast, directness was associated with familiar and cognitively simple vocabulary. P1 also demonstrated adaptive prompting by combining politeness and directness when initial responses were unsatisfactory. He perceived direct prompts as producing more targeted and relevant responses and used variations to compare outputs and improve their quality.

Participant 2 (Female)

P2 viewed AI primarily as a functional tool and assistant, resulting in a predominantly direct and efficiency-oriented prompting style. Direct strategies were preferred because they were habitual, simple, and required less cognitive effort. Politeness was used occasionally, mainly as a variation in wording rather than an interpersonal necessity, although P2 perceived some differences in response quality. She also demonstrated adaptive prompting by moving from general to specific instructions and emphasizing detail and clarity. Overall, directness remained her dominant strategy, while politeness and variation were applied selectively according to task needs.

Participant 3 (Male)

P3 perceived AI as both a learning tool and a socially familiar interaction partner. His politeness was largely habitual and transferred from everyday interpersonal communication, particularly through greetings, gratitude, and conversational expressions. Long-term interaction also contributed to a perception of familiarity and personalization. At the same time, P3 used politeness strategically because he believed it could improve AI responses. Indirectness and mitigation were also used to generate alternative responses and facilitate exploration. His prompting behavior therefore reflected a combination of politeness, personalization, role attribution, and strategic adaptation.

Participant 4 (Female)

P4 perceived AI as a supportive and non-judgmental discussion partner, which encouraged a predominantly polite, indirect, and collaborative prompting style. Her politeness was influenced by habitual communication norms and was also perceived as contributing to better responses. Indirect expressions were used to seek validation and collaboratively develop ideas. However, she adapted her prompts when responses were unsatisfactory, sometimes shifting to more direct language. She also emphasized that specificity and detail were more important for obtaining relevant outputs. Overall, her prompting reflected politeness, collaboration, and context-dependent adaptation.

DISCUSSION

The findings show that EFL students' prompting behavior with Generative AI is shaped by politeness, directness, habitual communication patterns, AI perceptions, and emerging AI literacy rather than gender alone. These findings can be interpreted through Genderlect Theory (Tannen, 1990), Politeness Theory (Brown & Levinson, 1987), and the CCSARP framework (Blum-Kulka et al., 1989).

From the perspective of Genderlect Theory, the findings only partially support Tannen's (1990) distinction between Rapport Talk and Report Talk. Although some participants used collaborative and polite expressions associated with Rapport Talk, these patterns were not exclusive to females. Similarly, direct and task-oriented language associated with Report Talk appeared among both genders. This suggests that communicative goals and individual preferences may have a stronger influence than gender

in AI-mediated interaction. The task-oriented nature of Generative AI may reduce the prominence of gendered communication patterns typically observed in human-to-human interaction. This interpretation is consistent with Grassini and Lauman (2022), who found that technological contexts may encourage more utilitarian interaction, and Kasneci et al. (2023), who describe Generative AI primarily as a task-oriented learning tool. Thus, AI-mediated communication may reduce, rather than eliminate, the influence of gendered linguistic tendencies.

Regarding Politeness Theory, the dominance of bald-on-record and direct strategies reflects the efficiency-oriented nature of AI interaction. Brown and Levinson (1987) explain that bald-on-record strategies prioritize clarity when face concerns are limited. Because AI lacks human emotions and social status, participants appeared to perceive direct prompting as acceptable. However, the use of negative politeness and mixed strategies demonstrates that human communication norms are still transferred to AI interaction, supporting Deng et al. (2023). Politeness also functioned as transactional politeness, as some participants believed that polite prompts produced better or more detailed responses. This is consistent with Zamfirescu-Pereira et al. (2023) and Wei et al. (2024), although Reynolds and McDonell (2021) found that direct prompts may produce more concise and task-focused outputs. These differences suggest that the effects of politeness may depend on the AI model, task, and prompting context.

The CCSARP framework (Blum-Kulka et al., 1989) further demonstrates that participants balanced directness and indirectness. Conventionally indirect strategies and direct commands were both prominent, indicating a continuum between politeness, clarity, and efficiency. Direct commands may reduce cognitive effort, whereas conventionally indirect forms maintain politeness without sacrificing clarity. Highly implicit strategies were rarely used, possibly because Generative AI responds more effectively to explicit instructions (Kasneci et al., 2023).

Another important finding concerns adaptive prompting and emerging AI literacy. Participants refined their prompts based on previous AI responses, evaluating output quality and adjusting subsequent prompts. This indicates that AI literacy involves more than technical prompt writing; it also includes critical evaluation, strategic adaptation, and iterative refinement. This process corresponds with prompt engineering described by Zamfirescu-Pereira et al. (2023) and the adaptive prompting practices emphasized by Liu et al. (2026). Specificity also consistently emerged as an important factor in obtaining relevant outputs. In addition, perceptions of AI influenced prompting styles: participants who viewed AI primarily as a tool tended to use direct and efficiency-oriented language, whereas those who perceived AI as a discussion partner used more collaborative and polite expressions, supporting Deng et al. (2023) and Kasneci et al. (2023).

These findings have important pedagogical implications for EFL learning. Politeness and directness should not be treated as opposing strategies but as complementary resources that learners select according to communicative goals, task demands, and interactional experience. Effective prompting therefore requires pragmatic flexibility, allowing learners to balance clarity, politeness, specificity, and purpose. AI literacy should consequently be integrated into EFL instruction through prompt-writing activities, comparisons of different

prompting strategies, reflection on AI-generated responses, and iterative prompt revision. Such activities can develop both pragmatic competence and responsible AI use.

Overall, the findings suggest that established sociolinguistic frameworks remain useful for explaining language use with Generative AI, but their application should account for the distinctive characteristics of technology-mediated communication. AI interaction introduces additional considerations, including task efficiency, prompt effectiveness, iterative refinement, and users' perceptions of AI. Thus, AI-mediated communication can be understood as a hybrid communicative environment in which traditional sociolinguistic competence interacts with emerging digital and AI literacy.

CONCLUSION

This study examined how EFL students employ politeness and directness strategies when interacting with Generative AI and explored the motivations underlying their prompting choices. The findings indicate that bald-on-record and conventionally indirect strategies were commonly used, reflecting a balance between efficiency and politeness. Participants also demonstrated adaptive prompt refinement, suggesting that prompting involves not only linguistic choices but also emerging AI literacy. No substantial gender-based differences were identified, indicating that communicative goals, individual preferences, and task requirements may have greater influence on prompting behavior than gender. The findings extend sociolinguistic perspectives by showing that Politeness Theory, Genderlect Theory, and the CCSARP framework should be interpreted within AI-mediated contexts, where communication is shaped by task efficiency, perceptions of AI, and technological affordances. Pedagogically, EFL instruction should incorporate AI literacy and pragmatic awareness through activities that encourage effective prompt construction, critical evaluation of AI responses, and iterative prompt refinement. Given the small sample size and specific Indonesian context, the findings are not broadly generalizable. Future research should involve larger and more diverse samples and examine factors such as proficiency, AI experience, task type, and differences across Generative AI platforms.

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Review Article

Integrating Positive Psychology, Gamification, and Digital Competence in Teaching English to Young Learners: The PGD-TEYL Model

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ABSTRACT

Despite growing research on positive psychology, gamification, and digital competence, these perspectives remain fragmented, offering limited guidance for an integrated approach to young learner education. This conceptual paper develops the Positive–Gamified–Digital Teaching English to Young Learners (PGD–TEYL) model through a focused integrative review and theory-synthesis approach. Its theoretical contribution is an alignment logic in which three interdependent pillars serve distinct functions: positive psychology supports safe and meaningful participation; purposeful gamification organises goals, challenge, choice, feedback, progress, and collaboration; and teacher digital competence guides inclusive, ethical, and developmentally appropriate use of digital resources, including teacher-mediated generative AI. These pillars are operationalised through the DREAM cycle (Diagnose, Relate, Engage, Assess, and Make Progress Visible) and differentiated pathways for learners aged 6–8 and 9–12. PGD–TEYL emphasises alignment among learner needs, language outcomes, gameful functions, and technological affordances rather than technology or rewards alone. As a provisional, testable framework, it supports lesson design, teacher education, instrument development, expert validation, and future classroom trials in Indonesian and comparable primary EFL contexts.

Keywords: *Digital competence, gamification, positive psychology, TEYL, conceptual model*

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INTRODUCTION

The introduction should establish the significance of the topic, explain why a review is needed, and define the scope of the review. Authors should identify the current state of knowledge, highlight controversies, inconsistencies, emerging issues, or unresolved questions, and clearly state the objectives and research questions guiding the review. The introduction should also explain the review's contribution to the field of applied linguistics.

English is introduced increasingly early because it supports international communication, access to knowledge, and participation in digital culture. Early exposure, however, does not guarantee deep learning. Young learners have developing attention, literacy, emotional regulation, and dependence on classroom relationships; they benefit from stories, movement, repetition, social interaction, purposeful play, and visible outcomes. Teaching English to young learners (TEYL) is therefore a design problem requiring the coordination of linguistic, developmental, emotional, social, and technological considerations (Fenyvesi, 2020; Pinter, 2017).

Positive psychology highlights enjoyment, engagement, relationships, meaning, accomplishment, hope, and resilience. Because language participation exposes children to error and immediate social evaluation, emotionally safe classrooms can increase attention, persistence, and willingness to communicate. Research with primary learner's links enjoyment with engagement and proficiency and relates enjoyment, grit, and growth mindset to willingness to communicate (Lee & Taylor, 2024; Tsang & Dewaele, 2024).

Gamification and digital game-based learning can clarify goals, provide rapid feedback, sustain attention, and create repeated practice. Reviews report benefits for motivation, participation, and selected language outcomes, but rewards and rankings can weaken autonomy or exclude less competitive learners when detached from language objectives. The relevant issue is therefore how gameful design supports meaningful language action and psychologically healthy participation (Dehghanzadeh et al., 2021; Ongoro & Fanjiang, 2024; Zhang & Hasim, 2023).

Technology-enhanced TEYL also depends on teacher digital competence: the ability to select, adapt, sequence, assess, and safeguard digital learning. DigCompEdu frames this competence across professional engagement, resources, teaching, assessment, learner empowerment, and learners' digital competence. In language education, these decisions must address multimodal input, interaction, feedback, accessibility, and age-appropriate participation (Caena & Redecker, 2019; Limbong & Wadham, 2024; Redecker, 2017; Wong & Moorhouse, 2021).

Integration is especially relevant in Indonesia, where primary English provision varies in teacher preparation, curriculum time, connectivity, device access, and institutional support. Children encounter English through games, entertainment, and social media, but access and parental mediation are unequal. A workable model must therefore support high-

“Teaching English to young learners requires more than fun and technology – it requires meaningful, supportive, and responsible learning”

, low-, and mixed-technology settings while promoting collaboration, perseverance, respectful communication, and responsible digital behaviour. This concern aligns with Universitas Negeri Makassar's 2026 basic research initiative on positive psychology, gamification, and digital competence in TEYL.

This paper develops the Positive-Gamified-Digital Teaching English to Young Learners (PGD-TEYL) model. It asks which constructs from the three domains are most relevant to TEYL, how they can be integrated into lesson and programme design, and which implementation principles and boundary conditions should guide validation. The paper contributes three interdependent pillars, five propositions, an iterative DREAM cycle (Diagnose, Relate, Engage, Assess, and Make Progress Visible), age-differentiated pathways, and implementation safeguards. The framework is theoretically grounded and testable but does not claim demonstrated effectiveness.

The model is genuinely new because it converts three largely parallel literatures into one age-differentiated design logic in which positive psychology defines healthy participation, purposeful gamification structures language action, and digital competence – including teacher-mediated generative AI – governs inclusive and ethical implementation through the DREAM cycle.

REVIEW METHOD

Review design and scope

This study uses an integrative literature review and theory-synthesis approach. Such reviews organise knowledge across traditions to clarify constructs, mechanisms, relationships, and propositions rather than estimate a pooled intervention effect (Jaakkola, 2020; Snyder, 2019). This approach fits a problem spanning TEYL pedagogy, positive psychology in second-language learning, gamification and game-based learning, and educator digital competence.

The unit of analysis was the transferable design principle. Focused searches conducted in July 2026 used combinations of TEYL, primary EFL, positive psychology, enjoyment, willingness to communicate, gamification, game-based language learning, digital competence, DigCompEdu, digital storytelling, and technology-enhanced primary language education. Peer-reviewed empirical studies, reviews, conceptual papers, and authoritative frameworks were prioritised; foundational sources defined constructs, while recent studies informed current evidence and implementation conditions.

Sources were retained when they were directly relevant to at least one PGD pillar, connected clearly to language education, young learners, educational game design, or teacher digital competence, and provided enough detail to identify implications and limitations. The review was focused rather than exhaustive, was not registered as a systematic review, and did not calculate pooled effects. Reference and DOI metadata were checked where available.

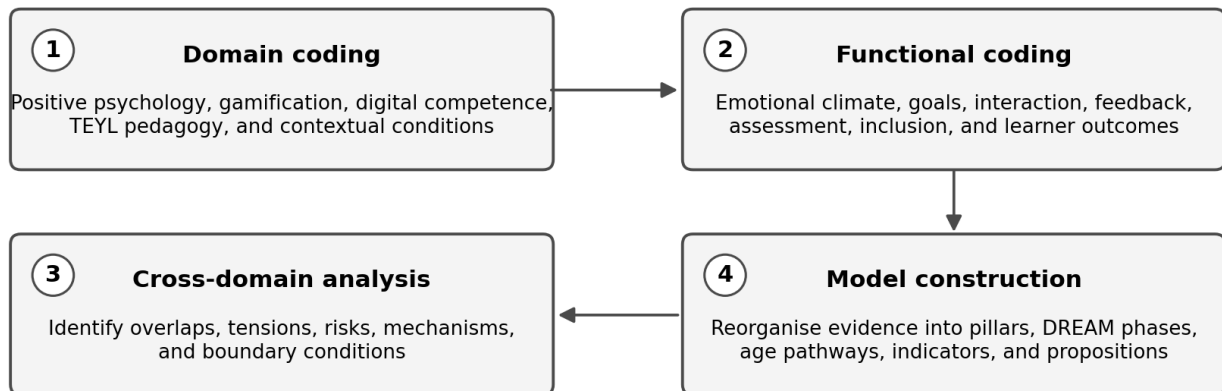
Analytical procedure

Analysis proceeded in four stages: domain coding, functional coding, cross-domain comparison, and model construction. Sources were first classified into positive psychology,

gamification, digital competence, TEYL pedagogy, and boundary conditions. Constructs were then organised by instructional function, including emotional climate, goals, interaction, feedback, assessment, inclusion, teacher decision-making, and learner outcomes. Overlaps and tensions were examined before the constructs were reorganised into pillars, DREAM phases, outcomes, safeguards, and propositions.

Figure 1

Four-stage analytical procedure used in the integrative theory synthesis



Traceability check: TEYL problem → proposed mechanism → observable evidence

Note. PP = positive psychology; TEYL = teaching English to young learners. The sequence is iterative because tensions identified in Stage 3 may require recoding or refinement of Stage 2 categories.

The emerging model was evaluated for theoretical coherence, developmental appropriateness, practical actionability, and empirical evaluability. Developmental appropriateness was operationalised through lower-primary (ages 6-8) and upper-primary (ages 9-12) pathways, while recognising that chronological age does not determine readiness. The resulting model is provisional: it is intended for expert review, instrument development, and classroom validation rather than as a confirmed causal model.

Conceptual traceability was strengthened by asking what TEYL problem each component addresses, which mechanism should produce value, and what observable evidence could indicate implementation. Duplicate constructs were combined, boundary conditions were separated from instructional actions, and applications were treated as delivery resources rather than model components.

CONCEPTUAL FOUNDATIONS

Teaching English to young learners as a developmental design problem

Developmentally responsive TEYL links children's cognitive resources, emerging literacy, prior language experience, emotional security, and social participation. Young learners benefit from concrete contexts, multimodal support, repetition with variation, manageable task length, and opportunities to communicate through speech, gesture, drawing, movement, or digital production. Language objectives should be attainable yet sufficiently

open to permit choice and communication; the design challenge is to provide structure without eliminating agency and challenge without creating threat.

Motivation among children is dynamic and closely connected to classroom experience. Longitudinal evidence shows that positive attitudes toward English lessons can decline when classroom practices become less varied or less personally meaningful, even when learners understand the wider value of English (Fenyvesi, 2020). Digital storytelling research illustrates an alternative: children can combine English with images, voice, home languages, and lived experience to create multimodal texts, making language learning both social and purposeful (Lestariyana & Widodo, 2018). Digitally mediated tasks can similarly move beyond isolated drills when they require learners to solve problems, create products, and collaborate around age-appropriate goals (Caruso et al., 2021). These studies support a view of TEYL in which playfulness is not the absence of rigour; it is a mode of organising attention, participation, repetition, and meaning.

Young learners are not a uniform category. Lower-primary learners may depend more heavily on oral rehearsal, demonstration, movement, and teacher mediation, whereas upper-primary learners may manage longer texts, strategic choices, peer feedback, and supervised digital production. These distinctions are treated as adaptable pathways rather than rigid age rules. Flexible routes, multimodal scaffolds, frequent formative checks, and protection from public comparison, excessive competition, intrusive data collection, and screen fatigue remain necessary across both groups.

Primary language learning is situated within families, local languages, school cultures, and unequal access to English and technology. Home-language knowledge can support comprehension, planning, and peer assistance, while family communication becomes important when tasks require devices, accounts, recordings, or online participation. The model therefore permits classroom-only completion, shared devices, multilingual scaffolding, and non-digital alternatives, and it requires attention to disability, sensory load, reading difficulty, and the social risks of public performance.

Positive psychology and the emotional conditions for language learning

Positive psychology examines conditions that enable individuals and communities to function well. Seligman's PERMA framework identifies positive emotion, engagement, relationships, meaning, and accomplishment, while broaden-and-build theory explains how positive emotions can widen attention and build cognitive and social resources (Fredrickson, 2001; Seligman, 2011). In TEYL, this means cultivating curiosity, belonging, hope, and manageable success without denying frustration or difficulty.

Second-language positive psychology includes enjoyment, hope, grit, resilience, flow, and creativity (Dewaele et al., 2019). Among young learners, enjoyment is associated with engagement and proficiency, while enjoyment, grit, growth mindset, and out-of-school English engagement contribute to willingness to communicate (Lee & Taylor, 2024; Tsang & Dewaele, 2024). Emotional and relational conditions are therefore mechanisms of participation rather than decorative additions to instruction.

A positive approach must avoid forced positivity and generic praise. Negative emotions may indicate excessive difficulty, social threat, confusing instructions, or

inaccessible resources. Self-determination theory suggests that sustainable motivation is supported by autonomy, competence, and relatedness (Ryan & Deci, 2000). PGD-TEYL consequently prioritises meaningful choice, achievable challenge, supportive relationships, strategy-focused feedback, and visible progress while retaining sufficient linguistic rigour.

Purposeful gamification for language-rich participation

Gamification uses selected game design elements in non-game contexts, whereas game-based learning uses fuller game experiences (Deterding et al., 2011). In TEYL, goals, narrative, challenge, feedback, progress indicators, collaboration, and choice can structure a paper-based or digital task; sophisticated applications are not required for gameful learning.

Well-designed games make goals clear, permit repeated attempts, and provide feedback that helps learners adjust strategy (Plass et al., 2015). These features suit language learning, which requires practice, retrieval, interaction, and tolerance of incomplete performance. Reviews generally report positive learner experiences and selected language outcomes but also identify technical problems, novelty effects, and risks associated with competition (Dehghanzadeh et al., 2021; Ongoro & Fanjiang, 2024; Zhang & Hasim, 2023).

Game elements have no inherent educational value. Points, levels, and leaderboards may increase activity without strengthening intrinsic motivation or competence satisfaction (Mekler et al., 2017). A mechanic is purposeful only when it clarifies a communicative goal, regulates challenge, elicits repeated language use, supports strategy and collaboration, supplies informative feedback, or makes mastery visible. Cooperative and self-referenced progress are therefore generally preferred to persistent public ranking.

PGD-TEYL treats gamification as a pedagogical grammar organised around meaningful goals, adaptive challenge, learner choice, contextual purpose, rapid formative feedback, visible progress, collaboration, and reflection. Competition is optional, brief, and carefully safeguarded so that gamefulness supports rather than controls participation.

A useful distinction is between game elements as decorations and game elements as instructional functions. Narrative can provide a reason to understand and produce language; challenge can regulate task difficulty; levels can sequence increasing independence; feedback can correct misunderstanding before it becomes stable; and progress indicators can help children connect effort with mastery. The design value lies in this function, not in the visual presence of a badge or avatar. A mission that requires learners to ask and answer questions to recover missing information may generate repeated communicative practice, whereas a fast multiple-choice competition may reward recognition and speed without supporting productive language. The selected mechanic should therefore be justified by the type of language performance it is expected to elicit.

Competition deserves particular care in TEYL. Short, voluntary competition can energise some learners, but persistent ranking may expose weaker learners, narrow peer relationships, and make errors socially costly. Cooperative or team-based structures can reduce these risks when contribution is distributed and success requires communication rather than domination by the fastest learner. Even cooperation, however, needs design: roles should rotate, quieter learners should have a meaningful channel to contribute, and group rewards should not conceal unequal participation. Self-referenced progress, personal

bests, class missions, and collective unlocking can retain gamefulness while supporting autonomy and relatedness (Ryan & Deci, 2000).

Teacher digital competence as pedagogical and ethical capability

Digital competence is the capacity to use technology critically, creatively, and responsibly to improve learning. DigCompEdu organises educator competence into professional engagement, digital resources, teaching and learning, assessment, learner empowerment, and the facilitation of learners' digital competence (Redecker, 2017). Its value lies in shifting attention from tool mastery to teachers' decisions before, during, and after instruction.

Language teaching adds requirements for comprehensible and culturally appropriate input, meaningful interaction, developmentally suitable feedback, and manageable multimodal production. Teachers' practices are shaped by confidence, infrastructure, institutional support, and learner diversity (Caena & Redecker, 2019; Wong & Moorhouse, 2021). Indonesian pre-service teachers' experiences with interactive materials and connectivity or subscription constraints further show why resource conditions must be included in design (Limbong & Wadham, 2024).

Teacher agency is central because technological affordances are not fixed properties. Teachers interpret what a tool permits and adapt it to learner characteristics, class size, curriculum requirements, and available support. Studies of primary language teaching show that teachers can develop new uses of digital tools in response to constraints, but their decisions are mediated by beliefs, institutional expectations, and access (Jeon et al., 2022). Children may also perceive the same technology as an opportunity or a constraint. Chatbots, for example, can offer interaction and reduced anxiety, but their value depends on how learners understand the task and how the teacher prepares, monitors, and follows up the interaction (Jeon, 2024).

Digital competence moderates whether positive and gamified intentions become inclusive language learning. It includes resource evaluation, task orchestration, accessible alternatives, interpretation of digital evidence, privacy, data minimisation, family communication, and a balance between screen-based and embodied participation.

Digital competence is also developmental judgement about the form and amount of mediation. For young learners, a technically sophisticated activity may be inferior to a simpler resource when navigation competes with language processing. Teachers need to preview interfaces, minimise unnecessary text and visual distraction, model the interaction sequence, and ensure that children can recover from mistakes without losing work or confidence. They also need contingency plans for failed connectivity, limited devices, absent accounts, and incompatible file formats. This capacity to anticipate breakdowns is part of pedagogical competence because interruption changes participation, timing, and emotional climate.

Assessment data generated by digital platforms require interpretation rather than automatic acceptance. Accuracy scores may reflect guessing, reading speed, interface familiarity, or help from peers as well as language knowledge. Automated feedback may be linguistically inappropriate, culturally narrow, or too abstract for children. Teachers must triangulate platform data with observation, oral performance, learner explanation, and

products created over time. Ethical digital competence further requires data minimisation, avoidance of unnecessary public profiles, age-appropriate consent procedures, careful use of photographs and recordings, and transparent communication with families. The goal is not maximum data collection but sufficient evidence to improve learning while protecting children.

Teacher-mediated generative AI as multimodal scaffolding

Within PGD-TEYL, generative AI is a teacher-mediated resource for creating or adapting multimodal scaffolds, not a substitute for human interaction, emotional co-regulation, or professional judgement. Appropriate uses include teacher-checked picture prompts, graded examples, alternative explanations, short audio models, role-play variations, and differentiated practice. Teachers must verify language, cultural representation, developmental load, factual accuracy, privacy, and bias before use (Jeon, 2024; Redecker, 2017).

For lower-primary learners aged 6-8, generative AI should ordinarily be used indirectly through teacher-prepared and filtered outputs, without requiring child accounts or personal data. Upper-primary learners aged 9-12 may participate in bounded, supervised prompting when it supports a clear language objective and explicitly addresses privacy, bias, attribution, and verification. In both pathways, AI should increase comprehensibility, choice, rehearsal, or feedback while preserving talk, movement, storytelling, collaboration, and teacher responsiveness.

The integration gap

The literature supports each of the three domains but rarely specifies their interaction. Adding them together is insufficient. A cheerful activity can lack linguistic depth; a well-designed game can create exclusion; and a technically impressive platform can increase cognitive load or reduce communication. Integration requires an ordering principle. The learner's developmental and language needs should define the goal. Positive psychology should define the desired emotional and relational conditions. Gamification should organise action, feedback, and progress. Digital competence should determine the responsible selection and orchestration of tools. The proposed model is built around this sequence and treats alignment as the principal source of educational value.

INTEGRATIVE SYNTHESIS AND PROPOSED MODEL

Design assumptions and propositions

The synthesis generated five propositions. First, emotional safety and positive language-learning experiences increase the likelihood of attention, participation, communicative risk-taking, and persistence. Second, gamification supports learning only when mechanics align with language outcomes and psychological needs. Third, teacher digital competence moderates the inclusion, quality, and sustainability of technology-enhanced gamified TEYL. Fourth, the pillars are interdependent: positive psychology defines healthy participation, gamification structures action and feedback, and digital competence governs tools and

evidence. Fifth, the model must remain platform-independent and adaptable across high-, low-, and mixed-resource contexts.

The three pillars of the PGD–TEYL model

The three pillars perform distinct but connected functions. Positive psychology defines desired participation through safety, enjoyment, belonging, meaning, confidence, and accomplishment. Purposeful gamification structures goals, challenge, choice, feedback, progress, collaboration, and reflection. Digital competence governs resource curation, multimodal interaction, assessment, accessibility, safeguarding, digital citizenship, and AI judgement. Table 1 summarises their design questions, illustrative practices, and principal risks; the pillars should not be treated as separate activity lists.

Table 1

Synthesis of the Three PGD–TEYL Pillars

Pillar	Core constructs	Primary design question	Illustrative TEYL practices	Principal risk
Positive psychology	Enjoyment, safety, belonging, meaning, confidence, accomplishment	How should learners feel and relate while using English?	Supportive routines; meaningful choice; cooperative talk; effort- and strategy-focused feedback; celebration of growth	Forced positivity, vague praise, or emotional safety without sufficient language challenge
Purposeful gamification	Goals, narrative, challenge, choice, feedback, progress, collaboration, reflection	How should activity, practice, and progression be structured?	Missions; progress maps; task routes; cooperative challenges; immediate formative feedback; reflection after play	Pointsification, excessive competition, novelty effects, or rewards disconnected from learning
Digital competence	Resource curation, digital pedagogy, assessment, inclusion, safeguarding, digital citizenship, AI judgement	How should tools be selected, adapted, governed, and evaluated?	Multimodal resources; shared-device tasks; teacher-mediated AI scaffolds; accessible alternatives; evidence-informed adaptation; privacy-aware participation	Tool-driven instruction, inequitable access, cognitive overload, weak data protection, unverified AI output, or passive screen use

The DREAM instructional cycle

The DREAM cycle operationalises the pillars. Diagnose maps language readiness, interests, emotional climate, participation, access, and support. Relate connects a language outcome to a meaningful story, problem, identity, project, or purpose. Engage organises multimodal, collaborative language action through choice and adaptive challenge. Assess uses language, participation, and access evidence to adjust feedback and support. Make Progress Visible links reflection and mastery to the next goal. The cycle is iterative rather than a fixed lesson sequence: assessment and diagnosis may occur during engagement, and reflection can

immediately generate a new diagnosis. Each phase must maintain alignment among language, positive participation, gameful function, and accessible technology.

To reduce practitioner overload, a minimum viable PGD-DREAM plan can begin with four checkpoints: specify one observable language outcome; select one positive-participation condition; choose one game element with a clear instructional function; and justify one digital or non-digital resource with an accessible alternative. The complete model can then be used for deeper unit planning, observation, or research.

Table 2

DREAM Cycle and Explicit PGD Integration

Phase	Teacher action	PGD integration	Learner experience	Indicative evidence
Diagnose	Map language readiness, interests, emotional climate, participation, access, and support.	P: identify safety, confidence, and belonging needs. G: identify preferred challenges and prior game experiences. D: profile access, navigation, privacy, and support.	Learners feel noticed and encounter an accessible entry point.	Observation notes; short language check; access and participation profile; preference data.
Relate	Connect language outcomes to a meaningful story, problem, identity, project, or purpose.	P: select the intended positive condition. G: frame a meaningful mission and success criteria. D: select the least burdensome medium or low-tech equivalent.	Learners understand what they are trying to do and why it matters.	Mission brief; model text; language success criteria; selected well-being goal; resource rationale.
Engage	Facilitate gameful, multimodal, collaborative language tasks with choice and adaptive challenge.	P: protect agency, competence, and relatedness. G: structure goals, choice, feedback, progress, and collaboration. D: orchestrate tools or teacher-mediated AI only when they improve language action.	Learners use English repeatedly while making decisions and cooperating.	Talk; written or multimodal products; task completion; strategy use; participation patterns.
Assess	Use formative evidence to give feedback and adapt support, grouping, pace, or difficulty.	P: use non-humiliating, strategy-focused feedback. G: permit revision and repeated attempts. D: triangulate platform data with observation and performance.	Learners receive useful information and additional routes to success.	Performance Continued evidence; recordings; quizzes; observation; peer and self-assessment; access notes.

Continued

Phase	Teacher action	PGD integration	Learner experience	Indicative evidence
Make progress visible	Guide reflection, recognise mastery, celebrate contribution, and identify next steps.	P: strengthen accomplishment and belonging. G: use mastery criteria and self-referenced progress rather than reward accumulation. D: use privacy-aware portfolios, maps, or simple non-digital displays.	Learners see growth as competence rather than only reward accumulation.	Portfolio; mastery badge; progress map; reflection; next-goal statement.

Table 2 explains how the three PGD pillars operate inside each DREAM phase. Table 3 then differentiates the same phases by developmental pathway, while Table 4 provides shared implementation indicators and safeguards that can be used to evaluate either pathway.

Table 3

Age-Differentiated DREAM Pathways for Lower and Upper Primary

Phase	Lower primary (ages 6–8)	Upper primary (ages 9–12)	Shared safeguard
Diagnose	Prioritise oral comprehension, phonological awareness, emergent literacy, attention span, comfort with routines, and family/device support. Use observation, pictures, demonstrations, and brief oral checks.	Profile oral and written readiness, reading independence, strategy awareness, digital literacy, prior online experience, interests, and self-regulation.	Do not equate age with readiness; allow multilingual and multimodal evidence.
Relate	Use short stories, characters, songs, objects, movement, and familiar classroom or family contexts. State one concrete “can-do” outcome.	Use problems, identities, class projects, local issues, narratives, and age-appropriate social purposes. Co-construct success criteria when feasible.	The context must require the target language rather than merely decorate the task.
Engage	Use short cycles, modelling, choral rehearsal, gesture, manipulatives, rotating roles, teacher-controlled devices, and cooperative missions.	Use longer missions, information gaps, project roles, strategic choice, peer feedback, supervised digital creation, and bounded AI-supported scaffolding.	Avoid public ranking, excessive screen load, inaccessible navigation, and domination by fluent or digitally experienced peers.

Continued

Phase	Lower primary (ages 6–8)	Upper primary (ages 9–12)	Shared safeguard
Assess	Rely on observation, pointing, sorting, oral response, drawing, performance, and brief recordings; give immediate concrete feedback.	Combine oral/written products, rubrics, reflection, quizzes, peer explanation, portfolios, and interpreted platform evidence.	Assessment must inform a next step and must not infer language learning from clicks or speed alone.
Make progress visible	Use picture-based can-do charts, stickers or badges tied to explicit mastery, teacher conferences, class maps, and oral reflection.	Use learner-owned portfolios, mastery maps, audio/written reflection, goal statements, and evidence-based badges or levels.	Keep progress self-referenced and private enough to avoid deficit labelling.

Implementation indicators and design safeguards

Implementation can be considered at design, enactment, and outcome levels. A lesson should identify a communicative outcome, a positive-participation condition, a functional game structure, and a justified digital or non-digital resource. Observation can then examine meaningful English use, equitable participation, adjusted challenge, useful feedback, and viable access routes. Outcomes may include language growth together with enjoyment, confidence, belonging, willingness to communicate, collaboration, and responsible digital behaviour. Teachers need not measure every construct in every lesson; a small set of indicators should match the unit purpose. Minimum safeguards include non-humiliating error repair, limited or cooperative competition, private or self-referenced progress, data minimisation, accessible alternatives, and evidence of language use beyond clicks, excitement, or time on task.

Table 4

Illustrative Indicators for PGD–TEYL Implementation

Dimension	Design or observation question	Possible evidence	Safeguard
Language alignment	Does the activity require the target language for a meaningful outcome?	Oral turns; written or multimodal products; comprehension decisions; transfer to a new task.	Do not infer learning from platform activity alone.
Positive participation	Can learners take risks, seek help, persist, and belong?	Voluntary participation; recovery after error; peer support; developmentally appropriate self-report; teacher observation.	Avoid forced positivity and public deficit comparison.
Purposeful gamification	Do game elements improve goals, practice, feedback, choice, or progress?	Repeated language use; strategic decisions; revision after feedback; mastery progression.	Limit reward Continued dependence and inequitable competition.

Continued

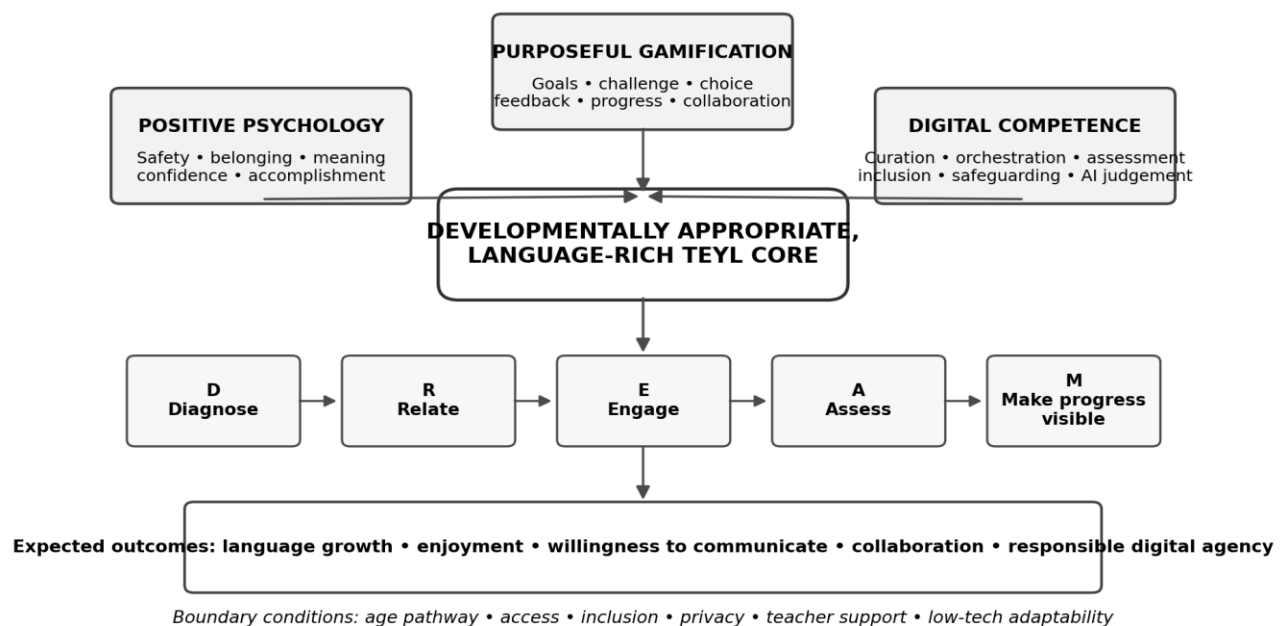
Dimension	Design or observation question	Possible evidence	Safeguard
Digital competence	Is the resource age-appropriate, accessible, secure, and pedagogically necessary?	Successful access; multimodal interaction; formative evidence; adapted routes; teacher verification of AI output.	Minimise data, screen load, distraction, access burden, and unsupervised AI use.
Reflective improvement	Does evidence lead to an instructional or learner next step?	Regrouping; adjusted challenge; revised product; learner goal; updated plan.	Keep reflection concrete and developmentally appropriate.

Conceptual representation and expected outcomes

Figure 2 represents the three pillars surrounding a developmentally appropriate, language-rich core. DREAM translates the pillars into planning and teaching decisions, while age pathways and boundary conditions shape implementation. Expected proximal outcomes include enjoyment, engagement, belonging, confidence, and willingness to communicate; learning outcomes include language growth, multimodal literacy, collaboration, and responsible digital agency. These outcomes remain conditional on inclusion, safeguarding, accessibility, low-technology adaptability, and teacher support.

Figure 2

Positive–Gamified–Digital TEYL Model and DREAM Instructional Cycle



Note. PGD–TEYL = Positive–Gamified–Digital Teaching English to Young Learners. The model is conceptual and requires expert and empirical validation. Generative AI is included within digital competence as a teacher-mediated and safeguarded resource, not as an independent pillar.

The model is justified through non-additive integration. Positive psychology supplies criteria for safe and meaningful participation; purposeful gamification converts those criteria into goals, challenge, feedback, collaboration, and visible mastery; and digital

competence determines whether resources are pedagogically necessary, inclusive, ethical, and sustainable. DREAM provides the ordering mechanism, the age pathways prevent a unitary treatment of young learners, and the safeguards establish boundary conditions. This configuration produces observable practices and testable propositions rather than claiming automatic benefits from positivity, games, technology, or AI.

SCHOLARLY IMPLICATIONS AND CONTRIBUTIONS

Theoretical and pedagogical contribution

PGD-TEYL contributes an integration logic rather than another list of activities. Its central claim is that educational quality emerges from alignment: developmental and language needs define the goal; positive psychology defines healthy emotional and relational conditions; gamification structures purposeful action, practice, feedback, and progress; and digital competence governs resource selection, interaction, evidence, accessibility, and safeguarding. This logic distinguishes visible activity from learning. An energetic game can be linguistically shallow, a digital quiz can generate participation without communication, and a supportive classroom can lack progression. The model also reconciles enjoyment with rigour: challenge is retained but calibrated so that learners can experience competence without threat. By treating digital competence as professional judgement rather than platform use, it explains why the same tool may create meaningful interaction in one context and passive clicking or exclusion in another. The age-differentiated DREAM pathways make these theoretical relationships actionable while retaining a common framework for planning, observation, and empirical testing.

Implications for teacher education, curriculum, and character formation

For teacher education, PGD-TEYL shifts workshops from application demonstrations toward design reasoning. Teachers can practise diagnosing a learner group, specifying a language outcome, selecting a positive-participation condition, choosing a functional game mechanic, and justifying a digital or non-digital resource with an accessible alternative. Curriculum and material developers can use the same sequence to check whether context, target language, challenge, feedback, evidence, and safeguards are aligned. Character formation is enacted through task structures: cooperative missions, rotating roles, fair access, respectful feedback, persistence after error, privacy-aware production, and responsible technology use. The minimum viable four-checkpoint route can support daily planning, while the complete framework can guide units, professional development, and research.

Safeguards, limitations, and future validation

Several cautions and limitations delimit the model. Positive psychology must not individualise structural problems such as unequal access, inaccessible instructions, or inadequate teacher support. Gamification should not equate engagement with excitement, competition, or reward accumulation, and digital competence should not be interpreted as pressure to maximise technology use. The review was focused and integrative rather than systematic, so it cannot claim exhaustive retrieval or pooled effects. The proposed mechanisms have not been empirically validated, the two age pathways remain broad, and

the international evidence base requires contextual testing in Indonesia. Validation should therefore proceed in stages: expert review of relevance, clarity, developmental suitability, and construct distinctiveness; cognitive interviews and instrument development; small classroom pilots across lower- and upper-primary settings; and comparative or longitudinal studies examining language outcomes, positive participation, accessibility, teacher workload, and responsible digital behaviour. Research can test whether positive participation mediates the relationship between task design and language use, whether digital competence moderates the quality of gamified implementation, and whether visible progress supports persistence when it is mastery-based rather than publicly comparative. Indonesian validation should include variation in curricular status, school location, class size, teacher preparation, connectivity, devices, local-language practices, and out-of-school English exposure. Mixed methods are needed because scores alone cannot explain how children experience safety, choice, challenge, collaboration, and technology. The framework should be revised when evidence shows that a component is unclear, burdensome, developmentally inappropriate, inequitable, or unrelated to meaningful language learning.

CONCLUSION

This paper developed the PGD-TEYL model to integrate positive psychology, purposeful gamification, and teacher digital competence in teaching English to young learners. The model places a developmentally appropriate, language-rich core at the centre of three interdependent pillars and translates them into the DREAM cycle: Diagnose, Relate, Engage, Assess, and Make Progress Visible. The revision further differentiates lower-primary (ages 6–8) and upper-primary (ages 9–12) pathways and positions generative AI as a teacher-mediated multimodal scaffold subject to developmental, pedagogical, privacy, and verification safeguards. The model does not claim that games, positive emotion, technology, or AI automatically improve learning. Its contribution is an alignment logic, a minimum viable planning route, implementation indicators, and testable propositions. Educational value is expected when language outcomes, emotional conditions, gameful functions, digital decisions, age pathways, access, and safeguarding are deliberately coordinated. The next stage is not immediate large-scale adoption but expert review, usability testing, contextual validation in diverse Indonesian schools, and empirical refinement.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

GENERATIVE AI DISCLOSURE

OpenAI ChatGPT was used to assist with initial drafting, language editing, literature organisation, and document formatting. The authors independently reviewed and remain responsible for every claim, citation, reference, interpretation, and final decision. No generative AI output is presented as empirical evidence, and the manuscript's proposed classroom use of AI is restricted to teacher-mediated, developmentally appropriate, privacy-aware multimodal scaffolding.

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