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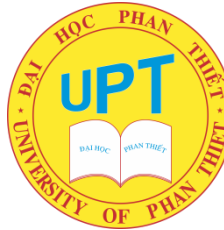
PHAN CHAU THANH

**INVESTIGATING THE SILENT SPEECH AFFECTING THE ESP
STUDENTS' ACADEMIC PERFORMANCE IN LEARNING
ENGLISH LANGUAGE: A CASE STUDY AT UNIVERSITY OF PHAN
THIET**

**MASTER'S GRADUATION
MAJORED IN ENGLISH LANGUAGE**

Lam Dong Province - 2026

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CODE: 8220201

MASTER'S GRADUATION

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Lam Dong Province – 2026

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Finally, I would like to express my heartfelt thanks to my classmates, colleagues, friends, and family for their unwavering encouragement and support. Without their understanding and motivation, the successful completion of this thesis would not have been possible.

CERTIFICATE OF ORIGINALITY

I confirm that the work presented in this Master's Graduation Project entitled *“Investigating the Silent Speech Affecting the ESP Students’ Academic Performance in Learning English Language: A Case Study at University of Phan Thiet”* has been performed and interpreted solely by myself.

I am submitting this Certificate of Originality for my Master's Graduation Project titled *“Investigating the Silent Speech Affecting the ESP Students’ Academic Performance in Learning English Language: A Case Study at University of Phan Thiet”* in fulfillment of the requirements for the Master's degree in English Language at Phan Thiet University. I solemnly declare that this Master's Graduation Project represents my own work, conducted under the guidance of Nguyen Phuong Linh, Ph.D., and that it has not been previously submitted for any other degree at University of Phan Thiet.

I affirm that the ideas, concepts, and content presented in this project are my own, and any external materials or sources have been appropriately referenced in accordance with the academic standards of University of Phan Thiet. I have not engaged in any form of plagiarism, misrepresentation, or unethical conduct during the research, writing, or presentation of this project. Furthermore, I acknowledge that the intellectual property rights of any external materials used in this project have been respected and adhered to. Any permission required for the use of copyrighted materials has been obtained.

Thank you for considering this Certificate of Originality.

Phan Chau Thanh

ABSTRACT

Silent speech is increasingly recognized as a significant factor in Second Language Acquisition (SLA). This topic has attracted considerable attention in recent years and has been examined by various scholars in related studies. The aim of this study focuses on exploring the degree of contribution and the correlation between silent speech and academic performance of ESP university students. To collect data, a questionnaire was designed for a population of 110 participants. Statistical Package for the Social Sciences (SPSS) version 25 was employed to determine whether there was a statistically significant correlation between the variables. In particular, Pearson's r and Multiple Regression were conducted to analyze the data. The results revealed a significant negative correlation between silent speech and academic performance at the 0.01 level. Furthermore, the two hypotheses were rejected based on the results. In contrast, silent speech was identified as a significantly negative predictor of academic performance; specifically, internalized silent speech behaviors (e.g., excessive inner speech, lack of verbal participation) were the strongest predictors, with the highest negative regression coefficients ($B = -.339$; $B = -.323$; $B = -.328$). Overall, the results indicated that silent speech accounted for approximately 46% of the variance in academic performance. This suggests that the remaining 54% may be influenced by other unidentified variables. Additionally, the overall model (M1) demonstrated a Large Effect Size (L) in this study. This implies that as silent speech tendencies among ESP students increase, their academic performance tends to decrease. To mitigate this issue, it is recommended that teachers establish a supportive and interactive classroom environment to encourage verbal participation and reduce excessive reliance on silent speech.

Keywords: *facial expressions, gesture, posture ; linguistic comprehensible output, ESP, SLA.*

LIST OF ABBREVIATIONS

Abbreviation	Full Form
CLT	Communicative Language Teaching
EFL	English as a Foreign Language
ESP	English for Specific Purposes
FLA	Foreign Language Anxiety
L2	Second Language
RQ	Research Question
SPSS	Statistical Package for the Social Sciences
Y1	Actual Performance
ZPD	Zone of Proximal Development

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CHAPTER 1: INTRODUCTION

1.1 Background of the study

Learning and acquiring the English language has long been recognized as a complex and long-term process influenced by a wide range of factors, including both linguistic and non-linguistic elements. Linguistic factors refer to learners' knowledge of the language system, as well as how the language is acquired, processed, and used across different communicative contexts. In contrast, non-linguistic factors involve psychological, cognitive, and individual characteristics such as consciousness, beliefs, attitudes, motivation, and learning strategies (Oxford, 1990; Ellis, 1994; Brown, 2007; Dörnyei, 2005; Gardner, 2010). These factors are commonly categorized into three major groups: cognitive, metacognitive, and affective, which interact dynamically to shape both the learning process and learning outcomes (Flavell, 1979; Pintrich, 2002; Schraw & Moshman, 1995).

In higher education contexts, particularly in countries where English is not used as a first language, English language teaching and learning have undergone significant transformations to align more closely with learners' practical needs and labor market demands. One prominent approach is English for Specific Purposes (ESP), which focuses on developing learners' ability to use English within specific professional and academic domains such as business, finance, tourism, engineering, and management. According to Hutchinson and Waters (1987), English for Specific Purposes (ESP) is a learner-centered approach in which course content and instructional methods are designed based on learners' specific needs. Similarly, Dudley-Evans and St John (1998) emphasize that ESP not only develops specialized communicative competence but also enhances learners' ability to apply language effectively in academic and professional settings. Furthermore, Strevens (1988) and Robinson (1991) argue that ESP plays a crucial role in bridging language knowledge and domain-specific knowledge, thereby improving both learning effectiveness and practical applicability.

During ESP learning, learners are not only engaged in acquiring linguistic knowledge but also in higher-order cognitive processes such as analysis, reasoning, synthesis, and knowledge construction. One of the key cognitive mechanisms supporting these processes is *silent speech*, also referred to as *inner speech*. According to Lev Vygotsky (1986), inner speech emerges from the internalization of social language and functions as a mediational tool for organizing thought, regulating behavior, and solving problems. This perspective is grounded in sociocultural theory, where language is viewed as a fundamental tool of cognition. Extending this line of research, James (2011) argues that inner speech serves as a critical cognitive resource that enables learners to process information, self-regulate their learning, and construct meaning in foreign language contexts.

A substantial body of research in applied linguistics has demonstrated the positive role of silent speech in facilitating language learning. Guerrero (2005) suggests that inner speech enables learners to organize their thoughts, monitor cognitive processes, and prepare for language production. Similarly, Oppenheim and Dell (2010) emphasize that silent speech plays a crucial role in speech planning prior to verbal output. In addition, Swain (2006, 2010), through the concept of “*linguaging*,” highlights that the use of language in thought enhances learners’ awareness of linguistic structures and improves their expressive abilities. Furthermore, Baddeley’s (2003) model of working memory indicates that the phonological loop is closely associated with subvocal rehearsal (i.e., silent speech) and plays a vital role in storing and processing linguistic information.

Beyond its internal cognitive function, silent speech is also manifested externally through non-verbal behaviors such as facial expressions, gestures, and posture. These behaviors not only reflect learners’ cognitive states but also support information processing and communication. According to David (1992, 2005), gestures are an integral part of thinking and play a crucial role in meaning construction. Similarly, Goldin-Meadow (2003, 2014) argues that gestures help reduce cognitive load and facilitate more effective learning. In addition, Argyle (1988) and Mehrabian (1972) emphasize that non-verbal communication accounts for a substantial portion of meaning transmission and reflects learners’ attitudes

and levels of engagement. More recent studies by Dewaele and MacIntyre (2014) indicate that facial expressions and posture are closely associated with positive emotions and active participation in foreign language classrooms.

In higher education contexts, particularly at Phan Thiet University, students enrolled in ESP programs are expected to develop both domain-specific knowledge and the ability to use English effectively in academic and professional contexts. In this setting, academic performance should be conceptualized as a multidimensional construct reflecting various aspects of learners' abilities. According to York et al. (2015), academic performance extends beyond grades to include participation, critical thinking, and communicative competence. Similarly, Richardson et al. (2012) highlight that academic performance is influenced by multiple factors, including learning strategies, motivation, and individual characteristics. In addition, Biggs (1999) and Entwistle (2009) argue that the way learners process information and interact with their learning environment has a direct impact on learning outcomes.

Although previous studies have extensively examined factors such as motivation (Dörnyei, 2005), anxiety (Horwitz et al., 1986), and learning strategies (Oxford, 1990), the role of silent speech as a positive contributor to academic performance remains underexplored, particularly when considered alongside behavioral manifestations such as facial expressions, gestures, and posture. Investigating this relationship is important for understanding how internal cognitive processes interact with external behaviors to enhance language learning outcomes.

In summary, the theoretical and practical issues discussed above provide the foundation for the present study, which is conducted in the context of ESP students at a higher education institution, where English is used for specific professional purposes. This study aims to explore the role of silent speech and its behavioral manifestations in influencing students' academic performance in English language learning, thereby contributing to more effective pedagogical approaches in higher education.

1.2. Problem statement

The problem is that there are many factors that may influence students' performance in English language learning, including both well-established and underexplored variables. Among these, *silent speech* is considered an important cognitive process that may support comprehension, information processing, and language use. However, despite its theoretical foundation, existing studies have not clearly identified the extent to which silent speech affects students' academic performance in practice.

Specifically, many studies have not established a clear relationship between silent speech and English learning performance; some have failed to provide convincing empirical evidence, while others have not fully examined the different dimensions of academic performance. As a result, there remains a gap in understanding the role of silent speech in influencing students' learning outcomes, particularly in the context of English for Specific Purposes.

In addition, academic performance is not merely reflected through test scores but is a multidimensional construct that is actual performance. However, previous studies have rarely examined these three dimensions simultaneously in relation to silent speech, leading to an incomplete understanding of students' overall learning performance.

Furthermore, silent speech does not only exist as an internal cognitive process but may also be manifested through observable behaviors such as facial expressions, gestures, and posture. Nevertheless, the relationship between these behavioral manifestations, silent speech, and academic performance has not been thoroughly investigated in ESP learning environments.

At University of Phan Thiet, ESP students still face certain difficulties in understanding lessons, using English effectively, and achieving expected academic outcomes. If this situation continues, students may struggle to attain their long-term academic goals and future career development.

Therefore, it is necessary to investigate the relationship between silent speech and students' academic performance, particularly focusing on actual performance (Y_1), in order to provide both theoretical insights and practical implications for improving English language learning in higher education.

1.3. Aims of the study

This study aims to examine the relationship between *silent speech* and ESP students' academic performance in learning English language. In addition, the study seeks to explore the affect of silent speech as an internal cognitive process that may be manifested through observable behaviors such as facial expressions, gestures, and posture in the learning context.

Specifically, the study focuses on determining the extent to which *silent speech* affects on academic performance. Furthermore, the study also investigates the relationship between these behavioral manifestations (facial expressions, gestures, and posture) and academic performance in order to better understand how they reflect learners' underlying cognitive processes.

By examining these factors simultaneously, the study is expected to provide a more comprehensive understanding of how internal cognitive processes and external behavioral expressions interact to influence students' learning outcomes. The findings are anticipated to contribute both theoretically and practically to improving the effectiveness of English language teaching and learning in ESP contexts within higher education.

1.4. Significance of the study

This study is significant as it provides a deeper understanding of how *silent speech*, as an internal cognitive process, contributes to students' academic performance in English language learning, particularly in ESP contexts. Its contributions can be viewed from three key perspectives: learners, teachers, and educational stakeholders.

From the learners' perspective, the study enhances students' awareness of how their internal thinking processes influence learning outcomes. By recognizing the role of silent speech and its manifestations through facial expressions, gestures, and posture, students may develop more effective cognitive strategies, thereby improving their actual language use (Y_1).

From the teachers' perspective, the study offers practical insights into interpreting students' non-verbal behaviors as indicators of cognitive engagement. This enables teachers to better understand students' learning processes beyond verbal participation, and to adopt more responsive teaching strategies that foster active thinking and improve learning effectiveness in ESP classrooms.

From the educational perspective, especially in institutions such as University of Phan Thiet, the study supports a more comprehensive approach to language education by integrating cognitive and behavioral dimensions into the evaluation of academic performance. The findings may inform curriculum design and instructional practices that are more aligned with learners' cognitive characteristics and real-world language demands.

Overall, this study contributes to bridging the gap between internal cognitive processes and observable learning outcomes, offering a more holistic understanding of academic performance in English language learning.

1.5. Scope of the study

This study focuses on investigating the role of *silent speech* in influencing ESP students' academic performance in learning English language. The scope of the study is defined in terms of participants, variables, and research context.

First, in terms of participants, the study was limited to students who were currently enrolled in ESP courses at University of Phan Thiet. These students were selected as they represented learners who had studied for academic and professional purposes within a specific disciplinary context.

Second, regarding the variables, the study examines silent speech as the main independent variable. This construct is considered in relation to its observable behavioral manifestations, including facial expressions, gestures, and posture. The dependent variable, academic performance, is conceptualized as a construct focusing on actual performance (Y₁).

Third, in terms of research context, the study was conducted within ESP classrooms in a higher education setting, focusing specifically on English language learning rather than other subjects or general English programs. The study did not aim to investigate other potential factors affecting academic performance, such as motivation, anxiety, or learning strategies, although these might also play important roles.

Therefore, the findings of this study were limited to the selected participants and context, and might not be fully generalized to all learners or educational settings. However, the study was expected to provide meaningful insights into the role of silent speech in ESP learning environments.

1.6. Research Questions

The following research questions were explored to seek the adequate answers in this study:

RQ1: What is the relationship between *silent speech* and ESP students' academic performance in learning English language?

RQ2: How does *silent speech (facial expressions, gesture, posture)* affect on academic performance?

CHAPTER 2: LITERATURE REVIEW

2.1 Definitions of terms.

Facial expressions have long been considered one of the most fundamental channels of nonverbal communication. Ekman (1992), a pioneering scholar in the field of emotion research, defines facial expressions as biologically rooted and largely universal signals that reflect basic human emotions such as happiness, anger, fear, disgust, sadness, and surprise. From this perspective, facial expressions are seen as innate and relatively stable across cultures, playing a crucial role in conveying emotional states without the use of language. In contrast, more recent studies have shifted away from this strictly universal view. Barrett et al. (2019) argue that facial expressions should not be understood as fixed emotional “readouts,” but rather as context-dependent communicative behaviors whose meanings are constructed through social and cultural interpretation. Supporting this concept from a linguistic reference point, the *Oxford Learner’s Dictionary* simply defines facial expressions as “the look on a person’s face that conveys feelings or emotions,” emphasizing their communicative function in everyday interaction.

Gesture, another key component of nonverbal communication, refers to bodily movements that accompany or substitute speech. McNeill (1992), a leading figure in gesture studies, describes gestures as spontaneous hand and arm movements that are tightly integrated with speech and thought processes, suggesting that language and gesture are cognitively interconnected rather than separate systems. More recently, Kita et al. (2017) expand this view by highlighting that gestures are meaningful bodily actions that not only accompany speech but also facilitate cognitive processing and improve clarity in communication, particularly in learning contexts. In a more general sense, the *Cambridge Dictionary* (2023) defines gesture as a movement of part of the body, especially hands or head, used to express an idea or feeling, reinforcing its communicative and expressive role.

Posture, referring to the way the human body is positioned, is also an important nonverbal cue in communication and classroom interaction. Argyle (1988), one of the foundational

researchers in nonverbal behavior, defines posture as a body position that reflects interpersonal attitudes such as confidence, openness, or defensiveness, meaning that posture can communicate psychological states even in silence. More recent interpretations, such as those by Pease and Pease (2017), emphasize posture as a powerful social signal that influences how individuals are perceived in educational, professional, and social environments. According to the *Oxford Dictionary (2020)*, posture is simply “the position in which someone holds their body when standing or sitting,” but in applied contexts, it carries deeper communicative meaning beyond physical arrangement.

According to the Oxford English Dictionary, silent speech refers to speech that is produced internally or without audible vocalization, allowing individuals to communicate thoughts or messages without generating a detectable acoustic signal. This definition emphasizes the absence of audible sound while maintaining the communicative function of speech. From a scientific perspective, Michael Wand and his colleagues (2016) define silent speech as “speech communication in which an acoustic signal is unavailable or severely degraded, and information is obtained from alternative sources such as articulatory movements, facial expressions, or physiological signals.” This definition highlights the role of non-acoustic cues in conveying linguistic information and forms the basis for research on Silent Speech Interfaces (SSIs).

Actual performance refers to the real, observable outcomes that learners demonstrate in academic settings. Biggs (1996) explains actual performance as the measurable achievement reflected in students’ test scores or task completion, emphasizing its objective and assessment-based nature. Similarly, Nicol and Macfarlane-Dick (2016) describe it as the demonstrated level of learning outcomes that students can independently achieve in formal evaluation contexts. In dictionary terms, although not directly defined, *Cambridge Dictionary (2023)* explains performance as “how well a person does a piece of work or an activity,” which can be interpreted as the concrete and visible result of learning efforts.

According to Chomsky (1988) and Horwitz (2010), language performance in learning, including cognitive, actualized, and achievable performance, plays a crucial role in shaping

both explicit and implicit knowledge acquisition. Through this process, learners gradually develop a structured system of linguistic knowledge while engaging in comprehension, production, and language use activities, which are widely discussed in psycholinguistics. Learners are generally driven by the desire to acquire a natural language when interacting with a metalanguage system, which involves both “I-language” and “E-language” concepts (Chomsky, 1988; Lyons, 1991).

From a linguistic perspective, Bloomfield (1933), Leech (1983), and Lyons (1970) emphasize that language performance reflects the interaction between the language system and the individual learner. In this sense, language is stored internally within the learner’s mind as “I-language,” representing individual linguistic competence. However, the extent to which this internal knowledge can be expressed in real communication (E-language) varies, as learners may not always be able to fully externalize what they know due to cognitive or contextual limitations.

In educational settings, academic performance is closely associated with learners’ ability to activate their cognitive potential and demonstrate their actual learning outcomes. Active engagement in the learning process enhances students’ responsibility for discovering new knowledge and developing their competencies (Norley, 2023; Abid et al., 2023). Academic achievement reflects the level of knowledge, understanding, and skills acquired by students, serving as evidence of their learning progress. In language education, achievement is considered the ultimate goal, guiding learners toward specific learning objectives. It is widely acknowledged that students’ effort is strongly connected to their academic success (Spielberger, 1966).

Educational success is not determined solely by institutional quality or teacher competence, but also by the degree of effort and persistence demonstrated by learners (Fakeye, 2010; Laoli et al., 2023). Previous research has extensively explored various factors influencing students’ academic performance. A significant number of studies highlight the role of psychological factors as key determinants of learning outcomes (Williams et al., 1997;

Trang et al., 2023). Research in this field has examined both internal and external factors affecting student achievement in educational contexts (Al-Ahdal & Aljafen, 2023).

Internal factors include psychological conditions, cognitive abilities, motivation, beliefs, and individual learning efforts, while external factors involve teaching experience, instructional practices, and pedagogical knowledge (Nuankaew et al., 2023). These combined elements contribute significantly to students' academic success and overall learning performance.

2.2 Theoretical framework

There is nothing more practical than good theories (Lewin, 1952). Truly, this study is anchored on six (6) interrelated theoretical foundations that help explain the phenomenon of silent speech in language learning contexts, particularly in ESP classrooms: (1) Vygotsky's (1978) Sociocultural Theory of Language Development; (2) Krashen's (1982) Affective Filter Hypothesis; (3) Clark's (1996) Theory of Private Speech and Self-Regulation; (4) de Guerrero's (1999) Theory of Inner Speech (Silent Speech); (5) Swain's (2005) Output Hypothesis; and (6) Clark's (1996) Theory of Private Speech. The following paragraphs present brief descriptions of these theories as follows:

2.3.1. Vygotsky's (1978) Sociocultural theory of cognitive development

Vygotsky's Sociocultural Theory (1978) emphasizes that cognitive development is fundamentally shaped through social interaction and mediated by language. According to Vygotsky, higher mental functions are first formed at the social level and then gradually internalized into individual cognitive processes through a mechanism called internalization. This process leads to the development of inner speech, which serves as a fundamental tool for thinking and self-regulation. In second language learning, learners initially rely on external interaction with teachers and peers, but over time, these external dialogues are transformed into internal verbal thinking. This internal speech is closely associated with silent speech, where learners mentally rehearse language before or during task completion. Lantolf and Thorne (2006) argue that inner speech plays a central role in

mediating second language development, particularly in classroom-based learning contexts. Similarly, Winsler et al. (2009) highlight that private and inner speech function as cognitive scaffolds that support learners in problem-solving and task performance. Therefore, Vygotsky's theory provides a strong theoretical foundation for understanding silent speech as a developmental process that bridges social interaction and internal cognitive regulation in English language learning.

2.3.2. Krashen's (1982) affective filter hypothesis

Krashen's Affective Filter Hypothesis (1982) explains how emotional variables such as anxiety, motivation, and self-confidence influence second language acquisition. The theory proposes that when learners experience high levels of anxiety or low motivation, their affective filter becomes "raised," preventing comprehensible input from being effectively processed. In contrast, a low affective filter facilitates language acquisition by allowing input to be more easily absorbed. In classroom contexts, particularly ESP environments, learners often experience performance pressure that increases anxiety and reduces willingness to speak. As a result, learners may shift from overt verbal production to internal language processing, which is closely related to silent speech behavior. MacIntyre and Gardner (1994) found that anxiety negatively affects learners' willingness to communicate and overall language performance, while Young (1991) emphasized that classroom anxiety often leads to avoidance of oral participation. In this sense, silent speech can be interpreted as a psychological coping mechanism, where learners mentally rehearse language internally to reduce anxiety and maintain cognitive engagement without external verbal output.

2.3.3. Clark's (1996) Theory of private speech and self-regulation

Clark (1996) proposes that private speech is a form of self-directed language used for cognitive regulation, planning, and problem-solving. Unlike social speech, which is intended for communication with others, private speech serves an intrapersonal function that helps individuals organize thoughts and control behavior during task performance. In cognitive development, private speech gradually shifts from overt verbalization, such as

whispering or muttering, to covert internal speech, which is closely aligned with the concept of silent speech in second language learning. Winsler et al. (2007) emphasize that private speech plays a significant role in self-regulation, particularly in tasks requiring high cognitive demand. Similarly, Berk (1994) found that learners frequently use private speech when dealing with complex academic tasks, especially in language learning environments. In ESP classrooms, silent speech functions as an internal regulatory strategy that allows learners to structure ideas, monitor accuracy, and prepare linguistic output before actual speaking or writing, thereby enhancing cognitive control and academic performance.

2.3.4. de Guerrero's (1999) Theory of inner speech

de Guerrero (1999) provides a direct theoretical explanation of inner speech in second language acquisition, defining it as covert verbal thinking that supports comprehension, planning, and self-monitoring during language use. According to this theory, silent speech is not the absence of spoken language but an active cognitive process in which learners mentally rehearse, evaluate, and organize linguistic output. de Guerrero (2005) further emphasizes that inner speech becomes particularly prominent when learners engage in complex language tasks or operate under time pressure, such as speaking or writing activities. In these situations, learners rely on silent speech to structure ideas and test linguistic forms before external production. This view aligns with Vygotsky's notion of internalization but provides a more specific focus on second language learning processes. Lantolf (2000) also supports the idea that inner speech functions as a mediational tool between thought and language production. Therefore, de Guerrero's theory is central in explaining silent speech as a cognitive mechanism that facilitates learners' language processing and supports academic performance in ESP contexts.

2.3.5. Swain's (2005) output hypothesis

Swain's Output Hypothesis (2005) argues that language acquisition is not achieved through input alone but requires meaningful language production. According to Swain, producing language forces learners to notice gaps in their linguistic knowledge, test hypotheses, and refine their language use. However, when learners are unable to produce immediate spoken

output, they often engage in internal rehearsal processes, which can be interpreted as silent speech. This mental rehearsal allows learners to construct sentences, evaluate grammar, and prepare language before actual communication. Izumi (2003) supports this perspective by showing that pushed output tasks enhance learners' noticing of linguistic deficiencies, even when production is delayed. Swain (2005) further emphasizes that cognitive processing during language production often begins internally before being externalized. In ESP learning contexts, silent speech thus serves as a transitional cognitive stage between comprehension and spoken output, enabling learners to improve accuracy and fluency in actual performance tasks.

2.3.6. Clark's (1996) Theory of private speech and cognitive control

Clark (1996) further conceptualizes private speech as a mechanism for cognitive control, attention regulation, and task management. In this view, language is not only a communicative system but also a cognitive tool for guiding thinking and behavior. Private speech allows individuals to structure their mental processes, maintain focus, and regulate problem-solving strategies during complex tasks. In second language learning, private speech is often observed when learners engage in cognitively demanding activities, appearing either as overt self-talk or covert silent verbalization. Over time, this speech becomes fully internalized, forming silent speech as a stable cognitive strategy. Winsler et al. (2007) argue that private speech is strongly associated with successful task performance and cognitive development. Likewise, Berk (1994) found that learners who frequently use private speech tend to perform better in problem-solving tasks. In ESP contexts, silent speech functions as an internal scaffolding mechanism that supports learners in organizing ideas, reducing cognitive load, and enhancing accuracy, thereby contributing directly to improved actual academic performance.

This study on silent speech behaviors (facial expressions, gestures, and posture) and their relationship with ESP students' academic performance is grounded in several interrelated theoretical perspectives from second language acquisition, educational psychology, and

sociocultural theory. These frameworks collectively provide a comprehensive explanation of how nonverbal behavior, cognitive processes, and learning outcomes interact in English language learning contexts.

One of the central foundations of this study is Communicative Language Teaching (CLT), which emphasizes that language is primarily a tool for communication rather than a set of isolated grammatical rules. Hymes (1972) introduces the concept of communicative competence, arguing that effective language use involves not only grammatical accuracy but also sociolinguistic appropriateness in real communication. Building on this, Richards and Rodgers (2014) describe CLT as an approach that prioritizes meaningful interaction, learner-centered activities, and authentic communication. In this perspective, nonverbal communication such as facial expressions, gestures, and posture becomes an essential part of communicative competence, as it helps learners convey meaning, support speech, and maintain interaction even when linguistic resources are limited. Therefore, CLT provides a strong pedagogical justification for examining silent speech as part of classroom communication behavior.

Another important theoretical lens is Krashen's Affective Filter Hypothesis, which explains how emotional variables influence language acquisition. Krashen (1982) argues that learners with high levels of anxiety, low motivation, or low self-confidence develop a "mental filter" that blocks language input from being effectively processed. In contrast, learners with low affective filters are more open to input and more successful in acquiring language. In the context of this study, silent speech behaviors such as reduced facial expression, limited gestures, or rigid posture may reflect heightened anxiety or cognitive inhibition, which can increase the affective filter and negatively affect ESP students' actual performance. Recent interpretations of Krashen's theory (Dulay & Krashen, 2020; Lightbown & Spada, 2019) continue to support the idea that emotional states play a decisive role in determining language learning success, particularly in speaking-related tasks.

The study is also strongly grounded in Vygotsky's Sociocultural Theory, especially the concept of the Zone of Proximal Development (ZPD). Vygotsky (1978) explains that learning occurs most effectively when learners are able to perform tasks with the assistance of a more capable individual, such as a teacher or peer. This concept highlights the importance of social interaction, scaffolding, and mediated learning in cognitive development. From this perspective, silent speech behaviors such as gestures and facial expressions can be seen as external manifestations of internal cognitive processes that support meaning-making and scaffolded learning. Recent interpretations of sociocultural theory (Lantolf & Thorne, 2006; Lantolf, 2011) emphasize that semiotic resources—including nonverbal communication—play a key role in mediating second language development, especially in classroom interaction where learners negotiate meaning collaboratively.

In addition, Cognitive Load Theory (CLT) developed by Sweller (1988) and further refined by Sweller et al. (2019) provides an explanation of how mental effort influences learning efficiency. According to this theory, working memory has limited capacity, and excessive cognitive load can hinder learning performance. In ESP contexts, students often face high cognitive demands due to unfamiliar vocabulary and specialized content. Nonverbal behaviors such as gestures and facial expressions may function as cognitive support tools that reduce intrinsic load by helping learners process and retain information more effectively. Therefore, variations in silent speech may directly or indirectly reflect differences in cognitive performance.

Finally, the relationship between observed behavior and measurable outcomes is supported by educational performance theory, particularly Biggs' (1996) constructive alignment model and Hattie's (2017) synthesis of learning influences. Biggs emphasizes that actual performance should be aligned with intended learning outcomes and assessment tasks, while Hattie identifies feedback, teacher influence, and student engagement as major determinants of achievement. In this sense, achievable performance is understood as the potential level of success that learners can reach when instructional conditions are

optimized. Silent speech behaviors, as observable indicators of engagement and cognitive processing, may therefore serve as indirect predictors of both actual and achievable performance.

Overall, these theoretical perspectives collectively suggest that silent speech is not merely a peripheral behavior, but an integrated component of cognitive, emotional, and communicative processes in ESP learning. They provide a solid conceptual foundation for investigating how facial expressions, gestures, and posture influence students' academic performance in English language learning contexts.

2.3 Conceptual framework

The conceptual framework of this study is constructed to clarify the relationship between Silent Speech (X) as the independent variable and Academic Performance (Y) as the dependent variable in ESP (English for Specific Purposes) learning contexts. The model proposes that students' non-verbal and internal communicative behaviors significantly influence their cognitive engagement and academic outcomes in English language learning.

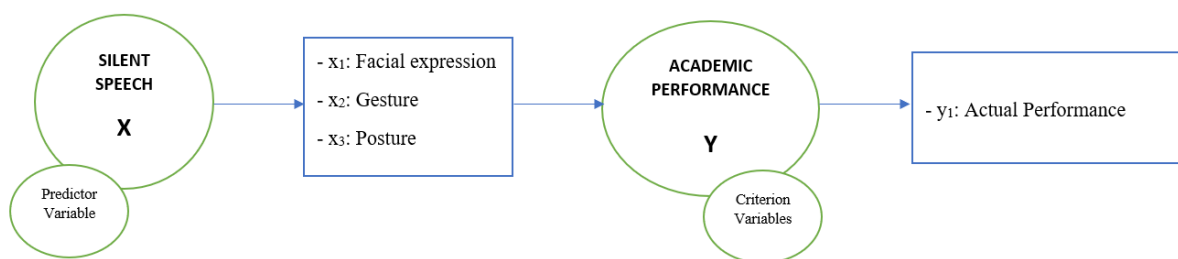


Figure 2.1 Schema showing this study of relationship of the variables

In this framework, Silent Speech (X) is defined as the predictor variable that reflects learners' internal and external non-verbal communicative expressions during the learning process. It is operationalized through three key observable dimensions: facial expression (X1), gesture (X2), and posture (X3).

- Facial expression (X1) refers to the learners' emotional and cognitive reflections shown through their faces, such as attentiveness, confusion, concentration, or anxiety during English learning activities. These expressions often indicate the level of understanding and affective engagement with the lesson content.
- Gesture (X2) represents physical movements such as nodding, hand movements, or body signaling used unconsciously or consciously by learners to support comprehension, express agreement, or compensate for limited verbal participation.
- Posture (X3) refers to body positioning and physical orientation in the classroom, such as leaning forward, sitting upright, or slouching, which may reflect levels of interest, motivation, or disengagement.

These three components collectively represent the phenomenon of Silent Speech, which is considered an important indicator of learners' internal cognitive and affective processes. In this study, Silent Speech is assumed to play a crucial role in shaping how students process information, respond to tasks, and engage in classroom interaction, especially in ESP learning environments where language complexity is higher.

On the other side of the framework, Academic Performance (Y) is identified as the criterion (dependent) variable, representing the outcomes of students' English learning processes. In this study, this variable is focused on Actual Performance (Y_1), which represents the observable and measurable academic results achieved by students, such as test scores, classroom participation, assignments, and performance in language tasks. This dimension reflects real academic achievement in formal assessment settings.

The conceptual model assumes a direct and systematic relationship between Silent Speech and Academic Performance. Specifically, variations in facial expressions, gestures, and posture are expected to influence students' cognitive engagement and emotional state, which in turn affect their actual academic outcomes and potential achievement levels. For instance, positive engagement behaviors such as attentive facial expressions, active gestures, and upright posture may enhance comprehension and participation, thereby

improving cognitive processing and academic results. Conversely, negative or passive silent behaviors may indicate low engagement, reduced comprehension, and weaker academic performance.

Furthermore, the framework is grounded in the idea that Silent Speech functions as an indirect communication channel that reflects learners' internal cognitive and affective states. In ESP learning contexts, where students often face linguistic challenges and communication barriers, non-verbal and internal expressions become particularly significant in shaping learning effectiveness.

Overall, this conceptual framework provides a structured foundation for examining how Silent Speech behaviors contribute to variations in ESP students' Academic Performance. It also guides the empirical investigation by clarifying the variables, their dimensions, and the hypothesized relationships among them.

2.4 Related research

2.4.1 Domestic research

In Vietnam, research on classroom communication, nonverbal behavior, and learner performance in English language learning has increasingly developed in recent years, particularly in EFL and ESP contexts at tertiary level. However, most studies still focused separately on either communication behavior or learning outcomes, with limited integration of internal cognitive processes such as silent speech. Phan et al. (2025) reported that teacher nonverbal cues, including facial expressions, eye contact, and body orientation, significantly affected student attention and participation in English classrooms. Similarly, Nguyen et al. (2023) found that students' nonverbal behaviors, such as posture, eye focus, and hand gestures, were positively correlated with classroom engagement and speaking participation, especially in oral practice sessions. These findings suggested that classroom behavior in Vietnam was strongly influenced by visible interactional cues rather than purely linguistic competence.

In ESP contexts, Luu and Bao (2023) investigated presentation skills among Vietnamese university students and concluded that although learners understood the importance of nonverbal communication in English presentations, their actual performance remained limited due to anxiety, lack of practice, and insufficient exposure to authentic speaking environments. Likewise, Tran and Pham (2022) emphasized that Vietnamese learners often relied heavily on memorization strategies, which reduced spontaneous verbal production and led to limited interactional competence in speaking tasks. In a related study, Le and Nguyen (2023) observed that students' use of gestures and facial expressions tended to increase when they were confident but decreased significantly under exam conditions or formal assessment pressure, indicating a strong relationship between psychological state and behavioral expression.

Regarding learner performance, multiple Vietnamese studies highlighted the significant role of anxiety and emotional factors. Nguyen et al. (2025) confirmed a negative correlation between foreign language anxiety and ESP students' actual performance, particularly in speaking and presentation tasks. This was consistent with findings from Pham et al. (2024), who reported that fear of negative evaluation and lack of confidence significantly reduced students' willingness to communicate in English classrooms. Similarly, Hoang and Tran (2024) showed that students with higher anxiety levels tended to participate less in speaking activities and performed lower in oral assessments, especially in task-based learning environments.

More specifically related to cognitive and internal processing, Nguyễn Phương Linh (2024) argued that learner performance in English classrooms should not be understood only through observable behavior, but also through internal cognitive processes that were often invisible, such as mental rehearsal, silent repetition, and self-directed thinking. She emphasized that learners frequently engaged in internal verbalization before producing spoken output, especially in ESP contexts where accuracy pressure was high. This perspective indirectly supported the existence of silent speech as a cognitive strategy in

Vietnamese EFL learners, although it had not been extensively measured in empirical studies.

In addition, Nguyen et al. (2022) noted that Vietnamese students often experienced a gap between linguistic knowledge and actual speaking performance, which was partly caused by psychological barriers and limited opportunities for real-time language production. Le and Tran (2023) further confirmed that students' communicative performance improved significantly when supportive classroom environments were provided, including peer interaction, reduced evaluation pressure, and guided speaking tasks. However, under traditional teacher-centered instruction, students tended to remain passive, with minimal verbal output and increased reliance on silent thinking processes.

Overall, domestic research consistently demonstrated a close relationship between nonverbal behavior, psychological factors, and English learning performance in Vietnam. However, most existing studies focused primarily on observable behavior and affective variables, while internal cognitive processes such as silent speech remained underexplored. This gap highlighted the necessity of further investigation into how silent speech interacted with learner behavior and contributed to actual academic performance in ESP contexts.

2.4.2 International research

Internationally, research on facial expressions, gestures, posture, and performance had a long theoretical and empirical tradition in psychology, linguistics, and education. Ekman (1992) was widely recognized for establishing the universality of facial expressions, arguing that emotions such as happiness, anger, and fear were universally expressed through consistent facial patterns across cultures. This foundational view was expanded by Barrett et al. (2019), who proposed a more context-based interpretation, suggesting that facial expressions were socially constructed and depended on cultural and situational factors. In gesture studies, McNeill (1992) argued that gestures were not separate from speech but were deeply integrated with thought and language production, while Kita et al. (2017) further emphasized that gestures supported cognitive processing and enhanced

communication clarity during speech. Regarding posture, Argyle (1988) explained that body posture reflected interpersonal attitudes such as confidence or defensiveness, and later studies by Pease and Pease (2017) confirmed that posture significantly influenced social perception and communication outcomes.

In terms of performance, cognitive and educational research provided strong evidence linking psychological and behavioral factors to learning outcomes. Kahneman (1973) explained cognitive performance as the efficiency of mental processes such as attention and memory under cognitive load, while Sweller et al. (2019) further developed this idea through cognitive load theory, showing that working memory limitations directly affected learning effectiveness. In educational contexts, Biggs (1996) defined actual performance as the observable academic achievement measured through tests or tasks, while Hattie (2017) emphasized that achievable performance depended on instructional support and feedback, highlighting the role of scaffolding in maximizing learner potential.

2.5 Research gap

Although in recent years there have been numerous studies investigating factors affecting English learning in ESP contexts, most of them have primarily focused on observable variables such as anxiety, motivation, speaking fluency, and classroom interaction. For instance, many studies have confirmed a negative correlation between anxiety and ESP students' academic performance, indicating that higher levels of anxiety often lead to lower learning outcomes. However, less attention has been given to subtle and non-verbal aspects of classroom communication.

One notable gap in the literature is the concept of *silent speech*, which refers to non-verbal communicative behaviors such as facial expressions, gestures, and posture. Existing studies tend to interpret silence either as a lack of participation or as a psychological/emotional state, rather than viewing silent speech as a structured system of non-verbal communication in ESP classrooms. Although some recent research has acknowledged the complexity of silence in language learning and suggested that it may

reflect learners' internal cognitive processing, these studies are still largely descriptive and have not developed a clear model explaining how silent speech influences academic performance.

In addition, within the Vietnamese educational context, research on silent speech in ESP classrooms remains very limited. Most local studies focus on speaking skills, language anxiety, or classroom participation, while systematic investigations into the relationship between silent speech and ESP students' academic performance are still scarce. In particular, there has been no study conducted at Phan Thiet University that comprehensively examines how facial expressions, gestures, and posture affect students' English learning outcomes in ESP settings.

Therefore, this study is conducted to address these gaps by:

- Conceptualizing silent speech as an independent variable in ESP learning environments
- Examining its impact on ESP students' academic performance
- Providing empirical evidence within the specific context of Phan Thiet University

The findings are expected to contribute a new perspective on the role of non-verbal communication in enhancing ESP learning effectiveness and to expand the research scope of silent speech in English language teaching in Vietnam.

CHAPTER 3: METHODOLOGY

3.1 Research Context

This study is conducted at University of Phan Thiet, a higher education institution located in Lam Dong Province, Vietnam. The university offers a wide range of academic programs in fields such as tourism, economics, engineering, and foreign languages. Among these programs, ESP courses play an important role in equipping students with English competence needed for their academic studies and future careers.

ESP courses at University of Phan Thiet are designed to help students apply English in specific academic and professional contexts. Rather than focusing solely on general English communication, these courses emphasize skills such as reading specialized materials, understanding academic terminology, writing discipline-related texts, and participating in professional discussions. Therefore, students are required to actively use English in various classroom activities, including presentations, group work, and language practice tasks.

The ESP learning environment at the university is generally characterized by uneven levels of English proficiency among students. Most students have studied general English at high school; however, when entering ESP courses, many of them face difficulties in expressing ideas fluently and accurately in English. These difficulties are particularly evident in speaking activities, where students tend to hesitate, remain silent, or rely on non-verbal communication to support comprehension and expression. In this context, behaviors such as facial expressions, gestures, and posture (silent speech) become important indicators reflecting learners' cognitive processes and emotional states during learning.

In addition, teaching practices in ESP classes at University of Phan Thiet are typically implemented through a combination of teacher-centered and learner-centered approaches. Teachers are responsible for delivering specialized knowledge and guiding lesson content, while students are encouraged to participate in pair work, group discussions, and presentations. However, due to limitations in language proficiency or confidence, students

do not always respond verbally. Instead, they often express understanding, confusion, agreement, or hesitation through non-verbal cues such as facial expressions, eye contact, and body posture.

Furthermore, the assessment system in ESP courses includes multiple components such as attendance, class participation, assignments, presentations, and final examinations. This provides a clear basis for measuring students' academic performance, and also allows for the analysis of the relationship between learning outcomes and classroom behaviors, including silent speech.

The selection of University of Phan Thiet as the research site is based on both practical accessibility and academic relevance. The researcher has direct access to ESP classes and students, which facilitates data collection through questionnaire surveys. At the same time, the university provides a realistic learning environment where English is used for academic and professional purposes, making it suitable for investigating the impact of non-verbal communication behaviors on learning outcomes.

Therefore, the context of University of Phan Thiet in Lam Dong Province provides an appropriate setting for examining the relationship between silent speech and ESP students' academic performance in Vietnamese higher education.

3.2 Participants

Altogether, a total of 110 ESP students ($n = 110$) from three economic-specialized classes participated in this study. The participants were purposively selected from three different disciplines, namely Financial Banking (FB1, $n = 37$), Business Administration (BA2, $n = 34$), and Economic Finance (EF3, $n = 39$). The distribution of participants across these groups was relatively balanced, which helps ensure the representativeness and comparability of the sample in terms of academic specialization. All participants were enrolled in a credit-bearing and compulsory ESP course, designed to support their academic and professional language needs in economic contexts.

In terms of gender distribution, the sample was predominantly female, with 88 female students and 22 male students, accounting for approximately 80% and 20%, respectively. This indicates a significant gender imbalance, particularly evident in the EF3 group, where female students largely outnumbered their male counterparts. Such a distribution is consistent with the common demographic pattern in economic-related majors in Vietnam and may have implications for variables such as language anxiety and classroom participation.

Regarding language proficiency, all participants were identified as high beginners in English, suggesting that although they had acquired basic knowledge of the language, they still faced considerable challenges in communicative competence, especially in specialized academic contexts. Most of the students were in their second and third academic years, with ages ranging from 20 to 23 years old, indicating a relatively homogeneous group in terms of academic maturity and learning experience.

With respect to learning and teaching materials, the ESP program employed content-based and task-based instructional approaches, integrating both receptive and productive skills alongside functional grammar and language use. Specifically, students in the Financial Banking and Economic Finance groups used the course book entitled English for Business Studies, which covered key topics such as banking, financial instruments, and accounting practices within a nine-week period. Meanwhile, students in the Business Administration group studied Human Resources from the Market Leader series, focusing on topics such as recruitment, incentives, and employment strategies. The program utilized a comprehensive ESL textbook series published by Pearson Longman, including a student's book, workbook, audio-visual materials, and a Learning Management System (LMS), thereby providing a technologically supported learning environment.

Overall, the characteristics of the sample, including their relatively low English proficiency, specialized academic content, and the structured ESP learning environment, are likely to contribute to the emergence of silent speech behaviors. These conditions may lead students to rely more heavily on internal cognitive processing rather than verbal

interaction, which in turn can influence their academic performance in English language learning. The size of population is dominated by female students rather male ones with a male-female ratio of (male >< female) (Table 3.1).

Table 3.1 Participants' demographic information.

Codes	Grades	Participants	Male	Female	Course Book
FB ¹	Financial Banking	37	7	30	English for Business Studies
BA ²	Business Administration	34	11	23	Human Resources, Market Leaders
EF ³	Economic Finance	39	4	35	English for Business Studies
1+2+3	FB+BA+EF	110	22	88	ESP

3.3 Validity and reliability

Validity and reliability implies appropriateness, meaningfulness, correctness, and usefulness of the inferences (Fraenkel & Wallen, 2009; Horwitz *et al.*, 1986; Aida, 1994). Theoretically, Dörnyei (2010) suggests that four items should have a reliability coefficient alpha of at least 0.70 (i.e., 70 per cent of the items are reliable in terms of measuring the construct) but less than 0.60 is problematic. Similarly, Perry (2011) advises questionnaires tend to have lower reliability coefficients below 0.60; Vogt (2007) states that an alpha of 0.70 is the minimum acceptable and below 0.70 indicates

that the items are not consistent. First, reliability estimate of objective tests, in rating-scale and Likert scale questionnaires, a reliability estimate ranges from 0 (0 per cent reliable) to 1 (100 per cent reliable). A reliability coefficient of 0.90 upwards is desirable, although a coefficient of 1 is rare. In general, a reliability coefficient of 0.70 for a questionnaire is taken to be acceptable (Brown 1996; Dörnyei 2007).

In this study, the reliability of the research instruments was measured using Cronbach's Alpha to evaluate the internal consistency of the questionnaire items. The results, as presented in Table 2, indicate that the overall reliability coefficient for all 40 items reached $\alpha = .801$, demonstrating a good level of internal consistency. Specifically, the silent speech variables, consisting of 30 items, achieved an overall Cronbach's Alpha of .794, which meets the acceptable threshold for reliability.

Further analysis of the sub-components of silent speech revealed that facial expressions ($\alpha = .795$, $n = 10$), gesture ($\alpha = .799$, $n = 10$), and posture ($\alpha = .789$, $n = 10$) all demonstrated satisfactory reliability levels. These results indicate that the items within each construct are consistently measuring the intended aspects of silent speech. Moreover, the performance variable, labeled as actual performance, consisting of 10 items, yielded a Cronbach's Alpha of .821, indicating a high level of internal consistency.

Overall, all constructs in this study exceeded the minimum acceptable threshold of 0.70, suggesting that the instruments used are reliable and suitable for further statistical analysis. The relatively high reliability coefficients across all variables confirm that the questionnaire items are well-constructed and capable of producing stable and consistent

results. Therefore, the research instruments are considered adequate for measuring silent speech and its impact on students' academic performance.

As indicated above, validity is closely related to the accuracy of the findings and depends on the extent to which the research instruments are both valid and reliable (Dörnyei, 2007; Mackey & Gass, 2012; Porte, 2012). Altogether, the established reliability of the instruments provides a solid foundation for testing the research questions and hypotheses in this study, ensuring that the subsequent findings are both credible and dependable. Overall, preliminary statistical analyses revealed high internal consistency for the measures. (Table 32).

Table 3.2 Reliability Statistics of Characteristics of Instruments (RSCI) (N = 40)

Reliability Statistics		
Cronbach's Alpha: .794	Numbers of Items: 30 in total	
Silent speech Variables	Cronbach's Alpha	N of Items
Facial expressions	.795	10
Gesture	.799	10
Posture	.789	10
Altogether	.794	30
Reliability Statistics		
Cronbach's Alpha: .821	Numbers of Items: 10 in total	
Performance Variables	Cronbach's Alpha	N of Items
Actual performance	.821	10
Altogether	.821	30
Overall value	.801	40

3.4 Measurement and research instrumentation of variables

This section presents and describes how the variables in the study were identified and measured. The main instrument used in the study was a two-part survey questionnaire, in which most of the items were appropriately adapted from previous studies (Horwitz et al., 1987; Aida, 1994; Elkhafaifi, 2005; Cheng et al., 1999; Matsuda & Gobel, 2001; Matsuda & Gobel, 2004; Saito et al., 1999) and modified to suit the specific purposes of this research.

Part 1 focused on silent speech (facial expressions, gesture, posture), consisting of a total of 30 items with scale values, part 2 focused on academic performance (actual performance). The study employed a four-point Likert scale (Likert, 1932), ranging from 4 to 1: (4 = strongly agree; 3 = agree; 2 = disagree; 1 = strongly disagree). Participants were asked to indicate their level of agreement with each statement. Unlike the procedure used by In'nami (2006), the researchers made a deliberate decision to replace the dichotomous scale with a four-point scale for two main reasons. First, a four-point scale is an interval scale, which is more likely to produce normally distributed data. Second, it enhances the accuracy of responses compared to a four-point scale.

A three-point mean range scale was utilized to evaluate the degree and classification of participants' silent speech behaviors and academic performance. The data were processed using SPSS to calculate central tendency indicators, which helped identify the direction and intensity of participants' responses. The interpretation of the results followed specific criteria, as illustrated in Table 3.3.

Table 3.3 Mean Range for Determining Levels of Silent Speech and Academic Performance

Mean Range (Mean = X)	Interpretation	Degrees/Levels
	Silent speech	Academic performance
3.68 - 5.00	high	good
2.34 - 3.67	moderate	adequate

1.00 - 2.33	low	poor
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3.5 Data analysis

The data collected for all variables were systematically coded and processed using the SPSS version 25, with an initial significance level set at $\alpha = 0.01$. The differences between the independent variable, silent speech, and the dependent variable, academic performance, were analyzed through descriptive statistics, specifically the Mean (X) and Standard Deviation (SD). Subsequently, the relationships between variables were examined using the Pearson correlation coefficient, while regression analysis was conducted to determine the significance and predictive strength of the findings. For all statistical procedures, the alpha level was adjusted to $\alpha = 0.05$.

In the descriptive phase, the analysis involved coding the data, calculating frequencies, and organizing grouped frequency distributions. Furthermore, the Pearson correlation coefficient was applied to identify significant associations between the independent and dependent variables. The magnitude and direction of these relationships were interpreted based on the Davis's Index Table (DIT), as presented in Table 3.4.

Table 3.4 David's Index Table

Coefficient of Correlation (r)	Relationship Explanation	Description
0.70 or more (0.7 or >)	Very strong	Highly significant (+)
0.50 to 0.69 (0.5 -0.69)	Strong	Distinctively significant (+)
0.30 to 0.49 (0.3-0.49)	Moderate	Slightly significant (+)
0.10 to 0.29 (0.1-0.29)	Low, weak	Less significant (+)
0.01 to 0.09 (0.00-0.09)	Ignore/zero	No significant (-)

According to John W. Creswell (2012), correlational research can be categorized into two main approaches, namely explanation and prediction. In explanatory designs, the

relationship between paired scores of variables is examined through correlation analysis, allowing researchers to interpret and draw conclusions based on whether the variables are significantly related. In contrast, predictive designs focus on using selected variables as predictors to determine the direction of influence, identifying whether the relationships are positive (+) or negative (–).

In statistical terms, the correlation coefficient (r) ranges from -1 to $+1$, representing the strength and direction of the relationship between variables. Values close to $+1$ or -1 indicate a strong association, whereas values near zero suggest a weak or negligible relationship. Specifically, coefficients above 0.9 reflect a very strong correlation; values between 0.7 and 0.9 indicate a high level of association; coefficients ranging from 0.3 to 0.7 suggest a moderate relationship; those between 0.1 and 0.3 represent a low correlation; and values below 0.1 are generally considered insignificant or negligible.

Furthermore, Multiple Regression (MR) analysis was employed to examine the combined effects of three dimensions of the independent variable, namely silent speech, on the dependent variable, academic performance. This technique allows for the simultaneous assessment of the contribution of each predictor to the overall model. In this study, a standard multiple regression procedure was conducted, in which the three predictor variables - symbolically represented as x_1 , x_2 , and x_3 - were entered into the regression model to evaluate their relative influence on students' academic performance.

Table 3.5 Toth parameter of value index table

Criteria/parameters	Interpretation
	Values of measurements
02%-12.99%	Small (S)
13%-25.99%	Medium (M)
26%-above	Large affect sizes (L)

This procedure was employed to determine the extent to which each predictor contributes to the overall model. In particular, the total variance explained (R^2) was used as an indicator of the predictive power of the three independent variables. Additionally, squared partial correlation coefficients were calculated to estimate the unique contribution of each predictor to the explained variance within the multiple regression (MR) model.

According to Tóth (2007, 2011), the magnitude of the obtained effects can be interpreted using the criteria proposed by Jacob Cohen (1988). Based on these guidelines, effect sizes are categorized as small when ranging from 2% to 12.99%, medium when between 13% and 25.99%, and large when reaching 26% or higher, particularly in studies within the behavioral and social sciences.

To further evaluate the relative importance of the predictors of participants' silent speech, both the unstandardized regression coefficients (β) and the squared partial correlation values were examined. These statistical indicators help identify the most influential predictors and clarify their respective contributions to variations in students' academic performance.

Multiple regression analysis was conducted to determine which of the factors (facial expressions, gesture, and posture) best predicts the criterion variable of academic performance (actual performance).

Using standardized data, regression analysis was performed to examine the relationship between the dependent or predicted variable (i.e., Y (y_1) = performance in English language learning) and the independent or predictor variables (X (x_1, x_2, x_3) = anxiety). The former is associated with a set of explanatory or independent predictors (x_1 = trait/personal anxiety; x_2 = state/emotional anxiety; x_3 = specific/situational anxiety), while the latter is represented as (y_1 = actual performance) (Child, 2006; Fox, 1997).

Overall, the use of a quantitative, descriptive–correlational research design ensures that abstract constructs such as silent speech can be operationalized into measurable data. It also enables a scientific examination of the extent to which non-verbal communication

behaviors influence ESP students' academic performance, thereby providing empirical evidence for the study conducted at University of Phan Thiet. The overall framework of the study is illustrated in Figure 3.1

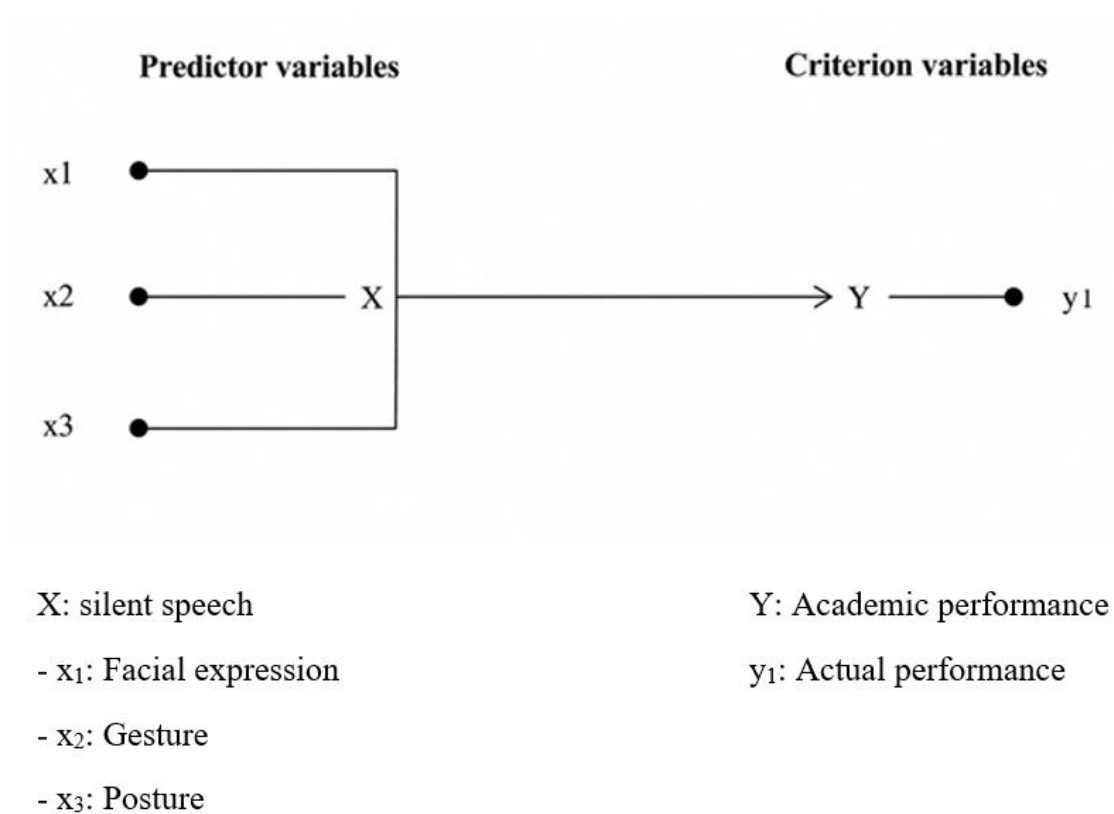


Figure 3.1 Flowchart of relationship between silent speech and performance

CHAPTER 4: RESULTS AND DISSCUSSION

This chapter presents and discusses the findings of the study on the relationship between silent speech and students' actual performance in ESP classrooms. The results obtained from the questionnaire survey were analyzed using SPSS 26.0 through descriptive statistics, Pearson correlation analysis, and multiple linear regression. The chapter is organized into two main sections. The first section reports the research findings, including participants' perceptions of silent speech factors and their actual performance. The second section discusses the results in relation to the research questions and previous studies reviewed in Chapter 2. Through this analysis, the study aims to provide a clearer understanding of how silent speech contributes to students' academic performance in ESP learning contexts.

4.1 Relationship between silent speech and academic performance.

Table 3.6 Correlations between of silent speech and actual performance toward ELL					
Measured Variables		Autual Performanc e	Facial expressions	Gesture	Posture
Facial expressions	r	-.530**	1	-.499**	-.514**
	Sig. (2-tailed)	.000		.000	.000
Gesture	r	-.499**	.328**	1	-.307**
	Sig. (2-tailed)	.000	.000		.001
Posture	r	-.514**	.348**	.307**	1
	Sig. (2-tailed)	.000	.000	.001	
Population (N)		110	110	110	110
**. Correlation is significant at the 0.01 level (2-tailed).					

RQ1: What is the relationship between *silent speech* and ESP students' academic performance in learning English language?

Firstly, three aspects of silent speech, namely facial expressions, gesture, and posture, and one aspect of academic performance (actual performance) in English language learning were analyzed using Pearson's correlation.

To address this research question, correlation analysis via the Pearson correlation coefficient (r) was conducted to determine whether there were any significant relationships between the identified components of silent speech and students' actual academic performance in English language learning. The level of significance was set at 0.01.

Based on Table 6, it can be observed that there are negative and strong correlations between actual academic performance and all three components of silent speech, namely facial expressions ($r = -.530$; $p < .01$), gesture ($r = -.499$; $p < .01$), and posture ($r = -.514$; $p < .01$). All correlations are statistically significant at the 0.01 level, indicating a high level of significance. Notably, among the three variables, facial expressions show the strongest negative correlation with actual performance, followed closely by posture and gesture.

These findings suggest that higher levels of silent speech behaviors—reflected through increased facial expressions, gestures, and posture-related manifestations—are associated with lower levels of actual academic performance in English language learning. In other words, when students exhibit stronger silent speech tendencies, they are more likely to experience reduced effectiveness in their learning outcomes.

Furthermore, the inter-correlations among the silent speech variables themselves are also significant and positive, such as between facial expressions and gesture ($r = .328$; $p < .01$), facial expressions and posture ($r = .348$; $p < .01$), and gesture and posture ($r = .307$; $p < .01$). This indicates that these components are interrelated and may collectively represent a unified construct of silent speech behavior.

Overall, the Pearson correlation matrix reveals that silent speech has a statistically significant and inversely proportional relationship with students' actual academic performance in English language learning. This implies that the more intensively students engage in silent speech behaviors, the more likely their academic performance tends to decline.

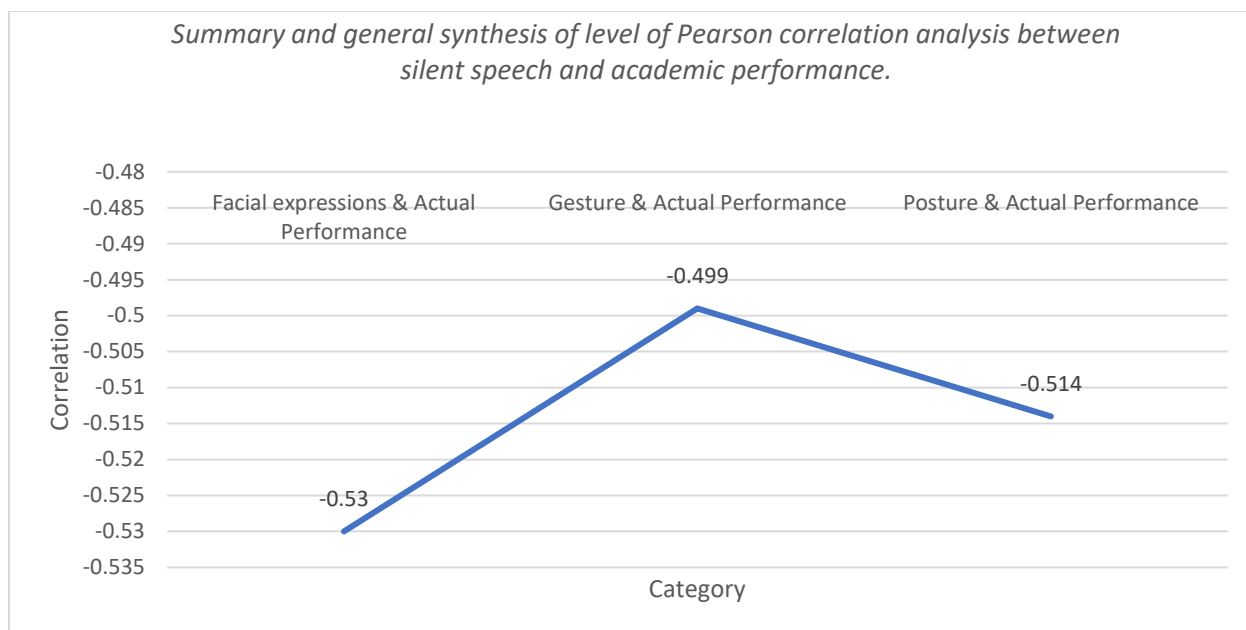


Figure 4.1 Summary and general synthesis of level of Pearson correlation analysis between silent speech and academic performance.

It can be concluded that there exists a negative relationship between ESP students' silent speech and their academic performance in English language learning, ranging from a moderate to strong level (see Fig. 3). The findings indicate that silent speech functions as a significant influencing factor on students' performance ($p < .001$). In other words, as the intensity of silent speech behaviors increases, students' academic performance tends to decline accordingly. This suggests that excessive internal processing and non-verbal manifestations may hinder effective language use and learning outcomes.

These results are consistent with previous studies that highlight the impact of internal cognitive and affective processes on learners' performance (e.g., Liu & Huang, 2011; Fujii, 2021; Dikmen, 2022). Therefore, the null hypothesis (H_0), which states that *there is no significant relationship between ESP students' silent speech and academic performance in English language learning*, is rejected.

4.2 Affecting of silent speech on academic performance.

RQ2: How does *silent speech (facial expressions, gesture, posture)* affect on academic performance?

The regression coefficient of x_1 , x_2 , x_3 , results show that R^2 (R Square or the coefficient determiner) = .465 reveals a percentage contribution of 46.5% suggesting that the three variables (facial expressions, gesture, posture) only explain 46.5% to the variability of y_1 (actual performance-dependent variable). This implies that 53.5% may be attributed to other factors not included in the regression.

The regression equation was arrived at thus:

$$M = Y(y_1) = (\text{Constant}) - X(x_1 - x_2 - x_3)$$

equivalent to below equation:

$$M_1 = -227 + .339 + .323 + .328$$

On the basis of the above equation, it can be said that the obtained regression coefficient of x_1 (facial expressions) signifies that the actual performance scores of student decrease by 33.9 units for every unit increase of x_1 . In the same vein, an increase of every unit of x_2 (gesture) corresponds to a decrease of 32.3 in y_1 . To put it simply, the y_1 scores of students will be lower at the level of 32.8 for every unit increase of x_3 .

Results of the analysis indicated that the value of probability of three variables: facial expressions (x_1) (sig.=.000); gesture (x_2) (sig.=.000) and posture (sig.=.000) are less than p value .05 ($p < \alpha$); thus, they proved to be significantly related to students' actual performance in English language learning (see Table 7).

Furthermore, it can be said, therefore, that among variables considered in this sample, facial expressions is the most predictor of actual performance (see Chart 1)

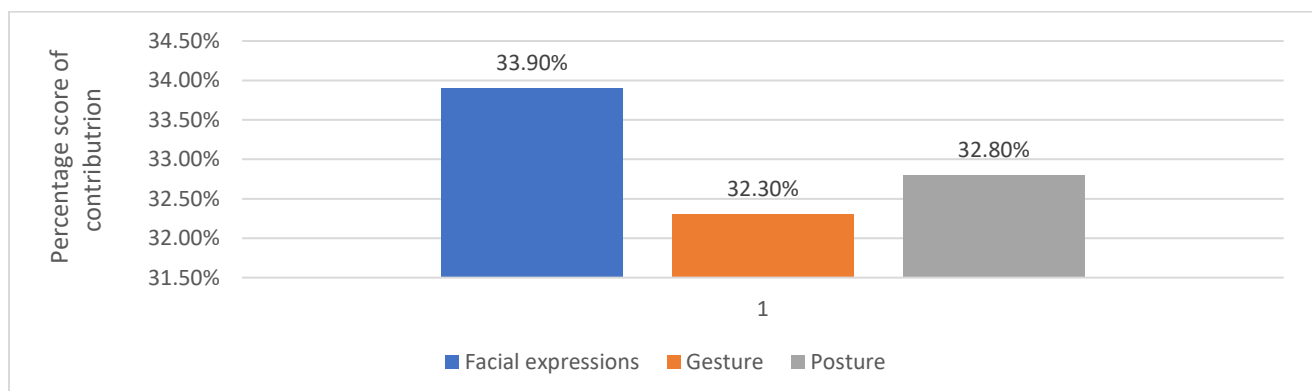


Chart 4.1 Facial expressions as the best predictor among three different silent speech aspects with actual performance

CHAPTER 5: CONCLUSION

5.1 Conclusion

This study was conducted to investigate the impact of *silent speech* (including facial expressions, gestures, and posture) on the academic performance of students learning ESP at University of Phan Thiet. Based on the data collected from 110 students through questionnaire surveys and analyzed using quantitative methods, several key findings were identified.

First, the results indicate that *silent speech* is a common phenomenon in ESP classrooms. Students frequently use nonverbal behaviors such as nodding, eye contact, hand gestures, and changes in posture to express their level of understanding, attention, or confusion during the learning process. This suggests that nonverbal communication plays an important role in supporting learners' comprehension and information processing.

Second, the study reveals that there is a relationship between *silent speech* and students' academic performance. Students who actively engage in both verbal and nonverbal communication tend to achieve better academic results. In contrast, those who exhibit prolonged silence and limited interaction often encounter difficulties in understanding the lesson content and tend to have lower academic performance.

Finally, the findings confirm that *silent speech* is not merely a behavioral expression but also reflects students' cognitive states, emotional conditions, and readiness to learn. Therefore, recognizing and effectively utilizing these nonverbal behaviors in classroom settings can contribute to improving the quality of ESP teaching and learning.

5.2 Pedagogical Implications

In the context of teaching and learning English for Specific Purposes (ESP), *silent speech* including nonverbal communication such as facial expressions, gestures, and posture has increasingly been recognized as an important factor reflecting learners' cognitive states and levels of engagement. Previous studies indicate that nonverbal communication plays a

crucial role in supporting language comprehension and processing, particularly in foreign language classrooms (Goldin-Meadow, 2003; McNeill, 1992). In addition, forms of “meaningful silence” can directly reflect learners’ ongoing learning processes and their level of knowledge acquisition (King, 2013; Nakane, 2007). Therefore, *silent speech* is not merely a behavioral manifestation but is also closely related to students’ academic performance.

First, teachers need to recognize that *silent speech* is a natural component of the language learning process. When learners are not yet ready to express themselves verbally, they often rely on nonverbal cues to indicate understanding or confusion. Research on the “silent classroom” phenomenon suggests that silence and nonverbal behaviors do not necessarily indicate a lack of participation; rather, they may reflect internal cognitive processing (Harumi, 2011; King, 2013). Therefore, teachers should carefully observe and interpret these signals in order to adjust their instructional strategies appropriately and enhance learning outcomes.

Second, promoting interaction and student engagement through meaningful classroom activities is essential. Studies in the EFL field have shown that integrating both verbal and nonverbal communication can significantly improve learners’ expressive abilities and participation levels (Gregersen, 2007; Gullberg, 2008). Moreover, teachers’ nonverbal behaviors such as nodding or using gestures for feedback can positively influence students’ engagement and emotional states in the classroom (Burgoon et al., 2016). This contributes to creating a supportive learning environment, which in turn enhances academic performance.

Furthermore, *silent speech* is closely associated with learners’ engagement and critical thinking abilities. Research conducted in Asian educational contexts has shown that classroom silence is influenced by cultural, psychological, and pedagogical factors (Liu & Jackson, 2008; Nakane, 2007). However, when properly understood and utilized, these nonverbal behaviors can serve as effective tools for learning rather than obstacles.

Finally, students' academic performance is not determined solely by their language proficiency but is also influenced by behavioral and psychological factors in the classroom. As a bridge between cognition and action, *silent speech* can reflect learners' readiness to learn and their ability to process information. Some studies also suggest that prolonged silence, if not properly addressed, may negatively affect language development and learning outcomes (Horwitz et al., 1986; Liu, 2006).

In conclusion, *silent speech* is not only a form of nonverbal communication but also a significant factor influencing students' academic performance. Understanding and effectively utilizing *silent speech* in teaching can help educators create a positive learning environment, enhance student engagement, and improve the overall quality of ESP instruction.

5.3 Limitations

Despite its contributions, this study on "*Investigating the Silent Speech Affecting ESP Students' Academic Performance in Learning English Language: A Case Study at the University of Phan Thiet*" presents several limitations that should be acknowledged.

Firstly, the limitation relates to the scope and representativeness of the sample. The participants were selected from a single institution, namely the University of Phan Thiet, and consisted solely of non-English majored ESP students. Consequently, the findings primarily reflect the characteristics of this specific educational context. Caution should therefore be exercised when attempting to generalize the results to other populations, institutions, or learning environments with different academic, cultural, or linguistic conditions.

Secondly, the study relied heavily on self-reported questionnaire data to measure silent speech behaviors, including aspects such as facial expressions, gestures, and posture, as well as students' academic performance. Although this method is suitable for capturing learners' perceptions and internal processing tendencies, it is inherently subject to certain biases, including individual interpretation, response tendencies, and the inclination to

provide socially desirable answers. As a result, the data may not fully capture the complexity and subtlety of actual silent speech processes or students' real cognitive engagement in English language learning.

Another limitation lies in the restricted range of variables examined in this study. Specifically, the research focused on three dimensions of silent speech (facial expressions, gestures, and posture) and one outcome variable, namely academic performance. However, other influential factors—such as motivation, self-confidence, classroom interaction, prior English proficiency, and learning strategies—were not incorporated into the research model. These variables may also play significant roles in shaping students' learning outcomes. Therefore, the findings should be interpreted as part of a broader and more complex framework rather than as a comprehensive explanation.

Finally, due to the quantitative and correlational research design, the study was able to identify significant relationships and predictive patterns between silent speech and academic performance; however, it was not designed to establish causal relationships. Thus, the results should be interpreted as indicative of associations rather than definitive evidence of cause-and-effect relationships.

In addition to the above limitations, several delimitations were intentionally set to maintain the focus and feasibility of the study. The research specifically targeted ESP students within economic-related disciplines at the University of Phan Thiet, and only selected aspects of silent speech namely facial expressions, gestures, and posture were examined as independent variables. Furthermore, academic performance was chosen as the primary outcome variable to align with the study's objective of exploring learning effectiveness in English language contexts. These boundaries were established to ensure a manageable scope and a clear analytical focus within the timeframe of the research.

5.4 Recommendations for further research

In light of the limitations identified, several recommendations for future research can be proposed. To begin with, further studies should be conducted with larger sample sizes and

across more diverse educational contexts. Expanding the research to include students from different universities, regions, or academic disciplines would allow for more meaningful comparisons and contribute to a broader understanding of how silent speech behaviors influence students' academic performance in English language learning.

Moreover, future research could extend the current model by incorporating additional variables that may interact with silent speech. Factors such as motivation, self-efficacy, classroom environment, prior language proficiency, and learning strategies are likely to play important roles in shaping learners' performance. Including these variables may provide a more comprehensive explanation of how silent speech operates within the overall learning process.

In addition, adopting qualitative or mixed-methods approaches would offer deeper insights into the nature of silent speech. While quantitative analysis helps identify general patterns and relationships, qualitative data such as interviews, classroom observations, or reflective journals could reveal how learners internally process language, express silent speech through non-verbal cues (e.g., facial expressions, gestures, posture), and how these behaviors influence their engagement and performance in real classroom settings.

Finally, future studies may consider implementing intervention-based designs. Rather than merely examining the relationship between silent speech and academic performance, researchers could investigate the effectiveness of specific pedagogical strategies, classroom techniques, or learner training programs aimed at regulating or enhancing silent speech. Such approaches may help reduce unproductive internal processing while promoting more active participation and improved academic outcomes in English language learning.

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APPENDICES

APPENDIX A

Questionnaire for respondents

Dear respondents,

I, the undersigned, am conducting a research study entitled “*Investigating the Effects of Silent Speech on ESP Students’ Academic Performance in Learning English: A Case Study at the University of Phan Thiet*” in partial fulfilment of the requirements for the Master’s Graduation Project in English Language at the University of Phan Thiet. This study aims to explore the role of silent speech behaviors, including internal cognitive processing and non-verbal manifestations, in influencing non-English majored students’ academic performance in English language learning at the University of Phan Thiet.

In line with this, may I request for your cooperation in filling out the survey questionnaire with the needed information.

Thank you very much.

Researcher

Phan Chau Thanh

APEENDIX B

Questionnaire for Respondents

I. PERSONAL BACKGROUNDS

1. The number of enrollment:year/s
2. Gender: Male ☐ Female: ☐
3. Age:
4. Type of grade/Specialization:

II. SILENT SPEECH ENGLISH LANGUAGE LEARNING

Please read the below statements carefully. Indicate your degree of agreement to every statement by putting a check mark (✓) in the box corresponding to your choice.

A	SILENT SPEECH	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
a. Facial expressions					
1	I often frown if I do not understand spoken English.				
2	My facial expression becomes more relaxed once I can follow spoken English.				
3	While reading a difficult English text, I tend to frown and concentrate intensely.				
4	My facial expression softens as I figure out the main idea of a reading text.				
5	I usually look tense before speaking in English.				

6	My facial expression shows more confidence as I speak English fluently.				
7	I sometimes tend to purse my lips or look thoughtful when I run out of ideas while writing in English.				
8	I often show satisfaction through my facial expression after writing a correct sentence in English.				
9	Being called on unexpectedly by the teacher often makes me look confused.				
10	My facial expression changes depending on how easy or difficult in-class tasks or tests are.				
A	SILENT SPEECH	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
b. Gesture					
1	While listening to the teacher explaining, I usually nod to show that I understand.				
2	If I do not understand the listening, I often shake my head.				
3	While waiting for my turn, I often twirl my pen or fidget with my hands.				
4	If I do not understand the lesson, I sometimes turn to either side to ask my classmates.				
5	While reading English, I usually use my finger to follow each line.				

6	When facing a difficult passage, I often use my hand to cover parts of the text to read more easily.				
7	When I cannot find the words, I often twirl my pen or tap my hand while thinking.				
8	When the teacher asks a difficult question, I usually look down or avoid eye contact.				
9	If I am unsure about my answer, I sometimes shrug my shoulders.				
10	I often raise my hand to answer questions when I understand the lesson.				
A	SILENT SPEECH	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
c. Posture					
1	I usually sit upright and look at the board while listening to the teacher.				
2	I often look down at my desk or notebook if I do not understand the lesson.				
3	I often lean closer to the book while reading English.				
4	I sometimes rest my chin on my hand during writing tasks.				
5	I often lean back in my chair when I feel tired or lose focus.				
6	I usually sit upright and move less when I am concentrating on a task.				

7	I often hunch my shoulders or shrink my posture when I feel nervous about answering.				
8	I usually lean toward my classmates during group work.				
9	I often use hand gestures to express myself when speaking English.				
10	I usually sit still and keep my posture steady while waiting for my turn to speak.				

B	ACADEMIC PERFORMANCE	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
Actual Performance					
1	I am ready to work in pairs/groups to get some real learning.				
2	I am always eager to write down what teacher says carefully and keep it in mind.				
3	I am never hesitated to answer question/s as I am called for/required.				
4	I never miss or ignore my class, or tasks given to home (homework) even thru LMS or Richmond E-learning system.				
5	For me, self-study is apart integrating into a main course, so it is so important and worthy to act.				
6	I am never afraid/ashamed of other students laughing at me when I show the				

	foreign language capacity or do some tasks wrong on the board or in oral utterance/presentation, live talks...				
7	For errors/mistakes are not too important to me, I can learn from these, they make me feel stronger and self-confident as many times as I step on them each once.				
8	I always concentrate on my classroom, teacher lectures and I bear in mind carefully to cultivate my I and E knowledge.				
9	I always practise English through my friends inside and outside to make my learning perfect.				
10	I am not a type of submissive or weakly-willed person, I am always dynamic to ask my friends and teacher if I don't understand my lesson or things learnt before.				

Thank you for your time.