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Translating and Understanding Content at the Same Time: A Process Model of Listening Anxiety and Coping Strategies in English-Medium Engineering Programs

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Abstract

Engineering students in English-medium instruction (EMI) classrooms must process spoken English while constructing disciplinary understanding, increasing cognitive demands that may give rise to listening anxiety and hinder learning. Despite growing interest in EMI, listening anxiety in discipline-specific contexts remains underexplored, particularly regarding how it emerges and is regulated. This qualitative study examined listening anxiety among undergraduate engineering students in EMI programs at two public universities in northeastern Thailand. Using purposive sampling, 28 participants with varying levels of listening anxiety were selected from survey respondents. Data were collected through 12 semi-structured individual interviews and three focus group interviews and analyzed using Braun and Clarke's (2006) thematic analysis. The findings identified five situational triggers of listening anxiety: linguistic complexity, accent familiarity, performance-based anxiety, instructional clarity, and contextual barriers. Students managed these challenges through self-preparation, peer support, instructional scaffolding, technology-enhanced comprehension, and motivation-driven listening development. The study proposes an EMI Listening Anxiety-Coping Process Model that explains how listening anxiety emerges from the interaction of situational triggers, cognitive-affective processing, anxiety manifestations, and learner regulation. The process model positions intelligibility as the central mechanism linking linguistic variation, cognitive processing, and emotional responses during disciplinary listening. The study advances a process-oriented understanding of EMI listening anxiety through a process model and offers theoretical and pedagogical insights for enhancing comprehension, participation, and learner regulation in EMI engineering classrooms.

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Introduction

English-Medium Instruction (EMI), commonly defined as the use of English to teach academic subjects where English is not the majority first language, has expanded rapidly across higher education as universities pursue internationalization, global competitiveness, and research collaboration (Dearden, 2014; Macaro & Aizawa, 2024). This expansion reflects growing demand for globally competitive graduates and universities' efforts to enhance international visibility, mobility, research collaboration, and graduate employability within globalized higher education systems (Gronchi & Hopkyns, 2025; Macaro et al., 2018). Consequently, universities across Europe and Asia have increasingly adopted EMI as part of broader internationalization agendas aimed at preparing graduates for participation in global knowledge economies (Dearden, 2015; Macaro & Rose, 2023; Pomat et al., 2022).

In Thailand, EMI has become prominent in STEM disciplines, especially engineering, where English serves as the primary language of research dissemination, technological innovation, and professional communication (Hengsadeekul et al., 2014; Wilang & Nupong, 2022). This expansion aligns with Thailand 4.0 policies and broader regional efforts to promote EMI for workforce development and international engagement (Pomat et al., 2024; Tantiniranat et al., 2024). Engineering students are therefore increasingly expected to access technical knowledge and participate in disciplinary and professional communication through English (Zhang & Pladevall-Ballester, 2023).

Despite its benefits, EMI presents substantial linguistic, cognitive, and pedagogical challenges, especially in engineering, where lectures involve conceptually dense content, specialized terminology, and cumulative explanations (Airey, 2012; Alanazi & Curle, 2024; Kohnke & Jarvis, 2023; McKinley & Rose, 2022). In EMI engineering classrooms, students must simultaneously interpret spoken English and construct disciplinary understanding, creating a dual-processing demand that makes listening essential for this process and may lead to listening anxiety (Macaro et al., 2018; Pomat et al., 2022).

Successful disciplinary learning depends on learners' ability to process spoken input continuously while constructing disciplinary understanding (Field, 2010; Macaro et al., 2018; McKinley & Rose, 2022; Vandergrift & Goh, 2012). Because engineering explanations are sequential and cumulative, even brief comprehension breakdowns may disrupt subsequent understanding and increase processing demands (Wilang & Nupong, 2022).

Multilingual EMI classrooms further increase listening demands because English functions as a lingua franca (ELF), exposing students to diverse accents and speech patterns (Jenkins, 2015; Seidlhofer, 2011; Smith & Nelson, 2019). Although intelligibility rather than native-like pronunciation underpins successful ELF communication (Smith & Nelson, 2019), unfamiliar accents may increase processing demands and hinder lecture comprehension. Recent EMI research, therefore, emphasizes multilingual and multimodal instructional practices that enhance intelligibility (Gronchi & Hopkyns, 2025). In engineering classrooms, reduced intelligibility may disrupt disciplinary understanding and increase listening difficulty (Field, 2010; Vandergrift & Goh, 2012; Zhou & Thompson, 2023).

These listening demands also have important affective consequences, particularly listening anxiety. Research in second language acquisition has consistently shown that anxiety can interfere with language processing and comprehension, especially under conditions of uncertainty, time pressure, and limited control over input (Elkhafaifi, 2005; Horwitz et al., 1986; Tsui & Cheng, 2022). Recent EMI studies similarly suggest that listening anxiety emerges through the interaction among linguistic complexity, cognitive load, and disciplinary demands in real-time classroom settings (Alanazi & Curle, 2024). In EMI classrooms, listening anxiety extends beyond language proficiency, emerging when students struggle to sustain disciplinary understanding while processing spoken English under time pressure. Linguistic complexity, cognitive load, and the need to keep pace with lectures interact to heighten listening anxiety and reduce classroom participation.

Despite increasing recognition of these challenges, EMI research has largely examined linguistic difficulties, classroom experiences, and learner responses separately. However, less attention has

been paid to how linguistic, cognitive, instructional, and contextual factors interact to produce listening anxiety and how learners regulate these challenges during disciplinary listening, particularly in engineering EMI classrooms. Addressing this gap requires a process-oriented perspective capable of explaining not only what triggers listening anxiety but also how it develops, manifests, and is regulated during EMI learning. This perspective provides the conceptual foundation for the EMI Listening Anxiety-Coping Process Model proposed in the present study.

To address this gap, the present study investigates listening anxiety among undergraduate engineering students enrolled in EMI programs at two public universities in northeastern Thailand. Specifically, it examines the situational conditions that provoke listening anxiety and the coping strategies students use to manage listening difficulties during EMI lectures. Adopting a process-oriented perspective, the study investigates how listening anxiety emerges and is regulated through the interaction among cognitive demands, intelligibility, instructional conditions, and learner agency. Building on this process-oriented perspective, the study develops the EMI Listening Anxiety-Coping Process Model to explain how situational triggers, cognitive-affective processing, anxiety manifestations, and learner regulation interact during disciplinary listening in EMI engineering classrooms.

Accordingly, the study addresses the following research questions:

(1) What situational conditions provoke listening anxiety among engineering students in EMI classrooms?
(2) What coping strategies do engineering students employ to manage their listening anxiety?

Literature Review

EMI Engineering Classrooms as High-Demand Listening Environments in Thailand

In Thailand, EMI has expanded particularly in engineering and other STEM disciplines, where English functions as the principal language of scientific communication, technological innovation, and professional practice (Macaro et al., 2018; McKinley & Rose, 2022; Wilang & Nupong, 2022). Engineering programs increasingly employ EMI to prepare graduates for participation in global knowledge economies and international professional communities (Pomat et al., 2022; Zhang & Pladevall-Ballester, 2023).

EMI classrooms are inherently multilingual environments in which English frequently functions as a lingua franca (ELF) among speakers with diverse linguistic backgrounds. In such contexts, successful communication depends primarily on intelligibility rather than conformity to native-speaker norms (Jenkins, 2015; Seidlhofer, 2011; Smith & Nelson, 2019). Nevertheless, variation in accent and speech patterns may increase processing demands for listeners, particularly when speech is unfamiliar or delivered rapidly (Boonsuk, 2025; Kohnke & Jarvis, 2023; McKinley & Rose, 2022; Moncada-Comas, 2022).

These challenges are amplified in EMI engineering classrooms, where lectures often involve dense technical terminology, abstract concepts, and cumulative explanations that require sustained attention and real-time comprehension (Airey, 2012; Boonsuk, 2025; Meenasantirak & Chaiyasuk, 2024). Previous research has shown that students' perceived difficulty in EMI courses is shaped by the interaction of language-related and academic demands, highlighting the importance of examining EMI learning challenges within specific instructional contexts (Canaran et al., 2022). Listening, therefore, becomes the primary means of accessing disciplinary knowledge under conditions of linguistic variability, conceptual complexity, and time pressure. Such conditions create a high-demand listening environment in which intelligibility, lecture delivery, and disciplinary complexity jointly shape students' learning experiences.

Although EMI research has increasingly examined classroom interaction and pedagogy, comparatively little attention has been paid to listening as a situated cognitive-affective process, particularly in engineering classrooms where students continuously process disciplinary knowledge through English under substantial cognitive demands. These demanding listening conditions constitute the situational context from which listening anxiety may emerge during EMI learning.

Foreign Language Anxiety and Listening Anxiety in EFL Contexts

Foreign language anxiety has long been conceptualized as a situation-specific affective response that can interfere with language learning, communication, and classroom participation (Horwitz et al., 1986). Within this broader construct, listening anxiety represents a skill-specific form of anxiety associated with processing spoken input under time pressure and limited control over the speech stream (Elkhafaifi, 2005; Goh, 2000; Vandergrift & Goh, 2012).

Studies consistently identify rapid speech, unfamiliar vocabulary, dense information, limited control over input, and perceived comprehension difficulty as major sources of listening anxiety (Kamaşak et al., 2021; Macaro & Aizawa, 2024; Wilang, 2024; Zhou & Thompson, 2023). These factors reflect the substantial cognitive demands of real-time listening.

Recent research suggests that listening anxiety is more closely associated with perceived comprehension difficulty than with linguistic accuracy alone (Alanazi & Curle, 2024; Zhou & Thompson, 2023). When listening demands exceed learners' processing capacity, uncertainty increases, disrupting comprehension and heightening anxiety. These relationships are likely to be further intensified in EMI classrooms, where language processing and disciplinary learning occur simultaneously.

To cope with listening challenges, learners employ a range of cognitive and metacognitive strategies, including note-taking, inferencing, monitoring comprehension, and reviewing information after listening tasks (Goh, 2000; Macaro & Aizawa, 2024; Vandergrift & Goh, 2012). However, these strategies have largely been examined in general language-learning contexts and are seldom investigated in relation to content-based disciplinary learning.

Although this body of research provides important insights into listening anxiety, its applicability to EMI contexts remains limited. Most studies focus on language-learning tasks rather than on disciplinary lectures that require simultaneous language processing and content learning. Consequently, existing conceptualizations of listening anxiety may not fully account for the complexity of EMI learning environments, where linguistic processing and disciplinary meaning-making occur concurrently. These findings suggest that listening anxiety reflects the interaction between cognitive processing and affective responses, a relationship that may become even more pronounced in EMI contexts.

Listening Anxiety as a Cognitive-Affective Process in EMI Contexts

Listening in EMI classrooms requires students to decode spoken English while constructing disciplinary understanding, creating the "double burden" of EMI learning (Macaro et al., 2018). When these concurrent demands exceed available cognitive resources, comprehension becomes more difficult, increasing cognitive load and giving rise to listening anxiety as a cognitive-affective response rather than a purely linguistic phenomenon (Boonsuk, 2025; Kamaşak et al., 2021; McKinley & Rose, 2022; Meenasantirak & Chaiyasuk, 2024; Pomat et al., 2022; Wilang, 2024).

Within EMI classrooms, intelligibility serves as the central mechanism linking linguistic variation to cognitive processing and emotional responses, as learners are exposed to diverse English varieties that differ in accent familiarity, speech rate, lexical density, and discourse organization. When intelligibility is reduced, learners must allocate additional cognitive resources to speech decoding, leaving fewer resources available for disciplinary meaning construction (Boonsuk, 2025).

This imbalance increases the likelihood of comprehension breakdowns and uncertainty, which may trigger anxiety. Importantly, the relationship is recursive: processing difficulty can increase anxiety, while anxiety may further disrupt comprehension and attention. Listening anxiety in EMI contexts should therefore be viewed as a dynamic process emerging through the interaction of situational conditions, cognitive processing, and affective responses.

Although previous studies have examined cognitive load, intelligibility, listening difficulty, and learner coping, these elements have largely been investigated separately (Macaro et al., 2018; McKinley & Rose, 2022; Vandergrift & Goh, 2012). Consequently, little is known about how situational conditions, cognitive processing, affective responses, and coping

strategies interact during real-time EMI listening. A process-oriented model is therefore needed to explain these dynamic relationships. Understanding these interactions also requires attention to how learners regulate listening difficulties.

Coping Strategies and Self-Regulation in EMI Listening

Beyond understanding how listening anxiety develops, it is equally important to examine how learners regulate listening difficulties through adaptive coping strategies. Previous research has identified cognitive, metacognitive, and social strategies, such as planning, monitoring, inferencing, note-taking, and collaborative learning, that support listening comprehension (Macaro & Aizawa, 2024; Vandergrift & Goh, 2012). Recent research on foreign language anxiety has further demonstrated that learners actively employ a range of coping strategies to manage anxiety-provoking language experiences (Liu et al., 2026), highlighting the importance of examining coping as an integral component of language anxiety experiences.

In EMI contexts, coping extends beyond language comprehension to encompass the regulation of both linguistic and disciplinary demands. Through cognitive, social, and metacognitive strategies, learners manage cognitive load, repair comprehension gaps, sustain classroom participation, and regulate listening anxiety over time (Boonsuk, 2025; Meenasantirak & Chaiyasuk, 2024).

Research on EMI learning has identified strategies such as pre-lecture preparation, peer collaboration, use of visual materials, and technology-mediated learning as important resources for supporting comprehension and reducing learning-related stress (Kamaşak et al., 2021; Pomat et al., 2022). These strategies may operate across different stages of learning, including before, during, and after lectures, helping learners adapt to evolving listening demands.

Despite increased attention to learner strategies in EMI, relatively little research has examined coping as a dynamic, context-sensitive process. Few studies have explored how learners combine multiple strategies across different stages of learning or how these strategies interact with situational triggers, cognitive demands, and emotional responses during disciplinary listening (Boonsuk, 2025; Meenasantirak & Chaiyasuk, 2024). Coping strategies, therefore, constitute a key regulatory component of EMI listening anxiety.

Existing research has identified linguistic complexity, intelligibility, cognitive load, and learner coping as important influences on EMI listening. However, these factors have largely been examined in isolation, providing a limited understanding of how listening anxiety emerges and is regulated during disciplinary learning. This limitation is particularly evident in engineering education, where students process technically dense content through English under real-time lecture conditions. To address this gap, the present study examines the situational triggers of listening anxiety and the coping strategies employed by engineering students. It then integrates these findings into an EMI Listening Anxiety-Coping Process Model, explaining how listening anxiety emerges and is regulated during disciplinary listening.

Methodology

Research Design

This study adopted a qualitative approach to explore how undergraduate engineering students experienced listening anxiety in EMI classrooms, the situations in which anxiety emerged, and the strategies they used to manage listening difficulties. Qualitative research enables an in-depth examination of participants' experiences and interpretations of complex phenomena within their specific contexts (Creswell & Poth, 2018). This approach was appropriate because the study sought to understand the situational and process-oriented nature of listening anxiety and coping in disciplinary EMI settings.

The qualitative study reported in this article formed the follow-up phase of a broader sequential mixed-methods project. Sequential mixed-methods research involves the collection and analysis of quantitative and qualitative data in successive phases, with findings from one phase informing the next (Creswell & Plano Clark, 2018). In the broader project, quantitative data collected using the English-Medium Instruction Listening Anxiety Scale (EMILAS) were first used to identify students' listening anxiety levels and subsequently informed the purposive

selection of participants for the qualitative phase. Semi-structured individual and focus group interviews were then conducted to examine in greater depth the situational triggers of listening anxiety and the coping strategies students employed during EMI lectures. This sequential design was appropriate because the quantitative phase provided an empirical basis for participant selection, while the qualitative phase enabled an in-depth examination of how listening anxiety emerged and was regulated within specific EMI engineering contexts.

Research Context

The study was conducted at two public universities in northeastern Thailand that offer undergraduate engineering programs delivered entirely through EMI. These universities are the only institutions in northeastern Thailand offering full EMI engineering programs, providing sustained exposure to English-medium disciplinary learning. The programs enroll both Thai and international students, creating multilingual classrooms where English serves as a lingua franca. Instruction is primarily lecture-based, requiring students to process conceptually complex content, specialized terminology, and procedural explanations in real time through spoken English. These characteristics make the context particularly suitable for investigating listening anxiety and coping strategies in EMI engineering classrooms.

Participants

Participants were undergraduate engineering students enrolled in EMI programs at two public universities in northeastern Thailand, where disciplinary content is delivered primarily through English.

Table 1 presents the demographic profile of the qualitative participants, grouped by listening anxiety levels identified during the survey phase.

As shown in Table 1, the sample ranged widely in listening anxiety and self-perceived English proficiency. Individual interviews included participants across six anxiety levels, whereas focus groups were organized by high-, moderate-, and low-anxiety levels to facilitate discussion among students with similar experiences.

Purposive sampling was used to select 28 participants from the survey respondents, including 12 individual interviewees and three focus groups. The sample included participants from different academic years, with varying levels of listening anxiety, disciplinary knowledge, and EMI experience. Combining individual and focus group interviews enabled exploration of both personal experiences and shared perspectives.

During the interviews, participants reflected on classroom situations that triggered listening anxiety and described the strategies they used to manage listening difficulties.

Table 1: Participant Characteristics by Listening Anxiety Level (n = 28)

Listening Anxiety Level	Interview Type	Number of Participants	Self-Perceived English Proficiency	Self-Perceived English Listening Proficiency
Very High Anxiety	Individual Interviews	2	Beginner	Beginner
High Anxiety	Individual Interviews	2	Beginner	Beginner
	Focus Group Interviews	6	Beginner	Beginner
Moderately High Anxiety	Individual Interviews	2	Intermediate	Intermediate
Moderate Anxiety	Focus Group Interviews	5	Intermediate	Intermediate
Moderately Low Anxiety	Individual Interviews	2	Intermediate	Intermediate
Low Anxiety	Individual Interviews	2	Intermediate	Intermediate
	Focus Group Interviews	5	Advanced	Advanced
Very Low Anxiety	Individual Interviews	2	Intermediate	Intermediate

Research Instruments

This study employed two instruments: the EMILAS and semi-structured interview protocols. Because this paper reports the qualitative phase, emphasis is placed on the interview protocols used to explore listening anxiety and coping strategies.

English-Medium Instruction Listening Anxiety Scale (EMILAS)

The EMILAS was used in the broader study to identify participants for the qualitative phase and to ensure variation in listening anxiety experiences. The scale was developed specifically for EMI engineering contexts and measures listening anxiety associated with technical lectures, diverse English accents, and rapid speech. The scale demonstrated strong content validity (IOC = .90) and reliability (Cronbach's α = .91).

Individual and Focus Group Interview Protocols

Semi-structured individual and focus group interview protocols were developed to examine the situational triggers of listening anxiety and students' coping strategies in EMI classrooms.

The interview questions were developed based on key constructs from the EMILAS and relevant literature on listening anxiety and EMI learning. The protocols included prompts that encouraged participants to describe their EMI learning experiences, reflect on their listening confidence, and identify specific situations that increased anxiety. The protocols encouraged participants to describe authentic classroom situations involving technical vocabulary, rapid lecture delivery, unfamiliar accents, and the strategies they used to manage these listening difficulties, including instructional and peer support.

To establish content validity, the interview and focus group protocols were evaluated by two experts in applied linguistics using the IOC method. Each question was rated on a three-point scale (1 = clearly congruent, 0 = uncertain, -1 = not congruent) for relevance, clarity, and alignment with the research objectives. The IOC values for the interview questions ranged from 0.50 to 1.00, indicating acceptable levels of content validity in qualitative instrument development. Based on expert feedback, minor revisions were made to improve wording clarity, reduce ambiguity, and ensure appropriateness for undergraduate EMI engineering students.

Following expert validation, the protocols were pilot tested with students who were not included in the main study. The pilot phase confirmed the clarity and flow of the questions, and minor refinements were made to enhance comprehensibility and sequencing.

Individual and focus group interviews were conducted in either Thai or English, depending on participants' preferences, to facilitate more accurate and detailed responses. Interviews conducted in Thai were translated into English for reporting purposes. All sessions were audio-recorded with consent and later transcribed for analysis.

Data Collection Procedures

Data collection followed two sequential stages. An initial EMILAS survey identified participants and informed purposive sampling for the qualitative phase. This paper reports the second stage, in which semi-structured individual and focus group interviews were conducted to explore students' listening experiences. Interviews were conducted in quiet settings, audio-recorded with consent, and transcribed verbatim for analysis. Individual interviews lasted approximately 30-45 minutes, whereas focus group discussions lasted 60-90 minutes.

Data Analysis

The analysis focused on qualitative data collected through individual and focus group interviews. Quantitative results informed participant selection. The qualitative data were analyzed using Braun and Clarke's (2006) thematic analysis. Following their six-phase approach, the analysis involved familiarization with the data, inductive coding, theme development, theme review and refinement, and interpretation of patterns across participants' experiences.

Initial coding was conducted inductively by identifying meaningful data segments related to listening anxiety and students' responses to listening challenges. The initial codes were then grouped into sub-themes. The development of themes followed an iterative and recursive process. Codes were iteratively compared across individual and focus group data, and candidate themes were reviewed and refined to ensure internal coherence and clear distinctions.

The final thematic structure consisted of two overarching domains: situational triggers of listening anxiety and students' coping strategies.

To enhance analytical rigor, the coding and theme development process involved repeated comparison between data extracts and emerging interpretations. The thematic structure was subsequently reviewed by two external experts in applied linguistics, whose feedback informed further refinement of the themes and enhanced the credibility and interpretive coherence of the analysis. The relationships among the final themes were then synthesized to develop the EMI Listening Anxiety-Coping Process Model, illustrating how situational triggers, cognitive-affective processing, anxiety manifestations, and learner regulation interact during disciplinary listening (Section 4.3).

Trustworthiness

Trustworthiness was established in accordance with Lincoln and Guba's (1985) criteria. Credibility was enhanced through iterative coding and external review of the thematic structure. Dependability was established through repeated comparison of data extracts and emerging interpretations, while confirmability was supported by maintaining an audit trail throughout the analytical process. Transferability was facilitated by providing detailed descriptions of the research context, participants, and procedures.

Ethical Considerations

Ethical approval for this study was obtained from the Human Research Ethics Committee of Suranaree University of Technology (Project Code: EC-68-71; Certificate of Exemption No. COE 68/2568). Participation was voluntary, and informed consent was obtained from all participants prior to data collection. Participants were informed of the study's purpose and their right to withdraw at any time without penalty. All data were anonymized during transcription and analysis, and no identifying information is reported in this study.

Results and Discussion

What situational conditions provoke listening anxiety among engineering students in EMI classrooms?

Findings from the individual and focus group interviews were integrated to capture both personal experiences and shared perceptions of listening anxiety in EMI engineering classrooms. The analysis identified five interrelated situational triggers: linguistic complexity, accent familiarity, performance-based anxiety, instructional clarity, and contextual barriers. Rather than operating independently, these factors interacted in real time during lecture processing, increasing cognitive demands and disrupting disciplinary understanding.

Table 2 summarizes the identified themes, their common codes, and descriptions.

As shown in Table 2, the five themes represent interrelated situational conditions that shaped students' listening experiences and influenced their ability to sustain disciplinary understanding during EMI lectures. Their interaction provides the empirical foundation for the EMI Listening Anxiety-Coping Process Model developed later in this study. The following sections examine each theme and explain how it contributed to the emergence of listening anxiety in EMI engineering classrooms.

Linguistic complexity

Linguistic complexity emerged as a major trigger of listening anxiety when students were required to comprehend technical vocabulary, abstract concepts, and rapid lecture delivery in real time. Participants described difficulty processing disciplinary content while simultaneously decoding spoken English, creating substantial cognitive demands during lectures.

One participant with a high level of listening anxiety explained, *"I have to translate and understand the lesson at the same time; it's too fast."* This account illustrates the dual processing demands of EMI, in which students must decode spoken English while constructing disciplinary understanding (Macaro et al., 2018; McKinley & Rose, 2022). These demands are especially pronounced in engineering, where lectures are conceptually dense and cumulative (Airey, 2012).

Another participant commented, *"When there are many technical terms, I cannot process everything at once, so I feel nervous that I miss something important."* Similarly, a focus group participant explained, *"Even if I know some words, when everything comes together quickly, I cannot*

Table 2: Situational triggers of listening anxiety

Theme	Common Codes	Explanation
Linguistic Complexity	Difficulty in understanding technical vocabulary; Struggling to decode language and content simultaneously; Overload from fast-paced, content-heavy lectures	Difficulty decoding spoken English and technical content under time pressure.
Accent Familiarity	Inability to follow unfamiliar or strong non-native accents; Confusion caused by rapid speech and unclear pronunciation; Misunderstanding due to mispronunciation	Difficulty understanding diverse English accents and speech patterns.
Performance-Based Anxiety	Fear of negative evaluation or being judged; Fear of comparing oneself to more proficient peers; Inability to respond due to listening breakdowns	Anxiety arising from evaluative classroom participation under uncertainty.
Instructional Clarity	Lack of visual aids or structured scaffolding; Limited comprehension checks; Confusion due to code-switching	Unclear lecture delivery, insufficient scaffolding, or confusing language switching.
Contextual Barriers	Loss of focus due to peer distractions; Limited auditory clarity from technology or classroom equipment; Lack of individual support in large class settings	Environmental conditions hinder listening and concentration.

connect the ideas." (Focus Group 2). These accounts suggest that listening difficulty stemmed not only from unfamiliar vocabulary but also from integrating technical terminology, continuous explanations, and disciplinary reasoning into coherent understanding. When students could not manage these simultaneous demands, comprehension became fragmented, increasing anxiety about missing essential information.

These findings are consistent with previous EMI research showing that dense disciplinary content, rapid lecture delivery, and technical discourse increase processing demands and disrupt comprehension (Elkhafaifi, 2005; Kohnke & Jarvis, 2023; Rose et al., 2020; Zhou & Thompson, 2023). They also support studies demonstrating that linguistic processing competes with disciplinary learning in EMI contexts (Pomat et al., 2022). In engineering classrooms, where explanations are sequential and conceptually interconnected, missing one explanation may disrupt understanding of subsequent concepts and procedures. Linguistic complexity, therefore, becomes a barrier to disciplinary meaning-making rather than merely a language-related challenge (Airey, 2012; Macaro et al., 2018).

Consequently, linguistic complexity appears to initiate the listening anxiety process by increasing the cognitive demands of integrating spoken English with disciplinary understanding.

Accent familiarity

Accent familiarity emerged as a prominent trigger of listening anxiety when students encountered unfamiliar English accents in EMI classrooms. Participants frequently reported difficulty understanding lecturers and peers whose pronunciation differed from the English they were accustomed to hearing, leading to comprehension breakdowns and heightened anxiety.

One participant with a high level of listening anxiety explained, *"When the teacher has a different accent, I cannot catch some words, so I feel lost."* Another noted, *"If the pronunciation is not clear to me, I have to guess, and that makes me nervous because I'm not sure if I understand correctly."* Similar experiences were reported in the focus groups: *"Sometimes I understand the topic, but I cannot understand the pronunciation, so I miss the details"* (Focus Group 1), and *"When the teacher speaks fast with an unfamiliar accent, I cannot follow, and I just stop trying to understand"* (Focus Group 3).

These accounts indicate that unfamiliar pronunciation disrupted word recognition even

when students understood the underlying concepts. Consistent with ELF research, the findings suggest that intelligibility functions as the mechanism through which accent variation increases cognitive processing demands and contributes to listening anxiety (Smith & Nelson, 2019).

This relationship was particularly evident in engineering lectures, where explanations are sequential and cumulative. As one participant explained, *"If I miss one word because of the accent, I cannot understand the next part"* (Focus Group 1). Another added, *"When I don't understand how the teacher says the term, I cannot connect it to what I know"* (Focus Group 2). These accounts suggest that reduced intelligibility disrupted students' ability to connect spoken input with prior disciplinary knowledge, resulting in fragmented comprehension and heightened anxiety. Similar findings have been reported in EMI science, nursing, and Thai higher education contexts (Moncada-Comas, 2022; Pomat et al., 2022).

Students' limited exposure to diverse English varieties may also have contributed to these difficulties. Because the participating universities are located in northeastern Thailand, opportunities to interact with speakers of different English varieties may be relatively limited, increasing the processing demands associated with unfamiliar accents.

Consequently, reduced intelligibility appears to intensify the listening anxiety process by increasing the cognitive effort required to sustain disciplinary understanding during lectures.

Performance-based anxiety

Performance-based anxiety emerged when students were expected to respond to questions, explain concepts, or participate in discussions before they were confident they had understood the lecture. In these situations, earlier listening difficulties translated into anxiety about classroom participation.

One participant with a high level of listening anxiety explained, *"When the teacher asks a question, I feel nervous because I'm not sure if I understood correctly."* Another similarly admitted, *"Sometimes I want to answer, but I am afraid that I misunderstood the lecture, so I stay quiet."* (Focus Group 2). Participants consistently linked their reluctance to participate to uncertainty caused by rapid speech, linguistic complexity, and unfamiliar accents.

This uncertainty was further intensified by the expectation of immediate responses. As one participant explained, *"I need more time to think, but the teacher expects an answer immediately, so I feel pressure."* (Focus Group 3). Another observed, *"If the teacher speaks fast, I cannot catch everything, so when they ask questions, I don't know if my answer is right."* (Focus Group 1). These accounts suggest that limited processing time prevented students from confirming their understanding before responding, transforming listening uncertainty into performance-related anxiety.

These findings indicate that performance-based anxiety emerged through the interaction of listening comprehension, cognitive load, time pressure, and classroom participation. Rather than arising solely from speaking English, anxiety developed when students were expected to respond publicly despite uncertainty about their disciplinary understanding. As one participant explained, *"I'm not only afraid of my English, but also afraid that my answer is wrong about the content."* (Focus Group 2). This finding extends research on foreign language classroom anxiety (Horwitz et al., 1986; Liu & Jackson, 2008) by showing that, in EMI engineering classrooms, fear of negative evaluation stems not only from concerns about English proficiency but also from uncertainty about disciplinary understanding. Consequently, performance-based anxiety represents a subsequent stage in the listening anxiety process, in which earlier comprehension difficulties evolve into hesitation and reduced classroom participation.

Instructional clarity

Instructional clarity emerged as a key pedagogical factor influencing students' ability to maintain disciplinary understanding during EMI lectures. Participants emphasized that lecture pace, organization, and clarity of explanation shaped their comprehension and, consequently, their listening anxiety.

One participant with a high level of listening anxiety explained, *"When the teacher speaks too fast and changes topics quickly, I cannot follow, and I feel stressed."* Another similarly noted, *"Sometimes the*

explanation is not clear, and the teacher moves on, so I feel like I miss important points." (Focus Group 1). These accounts suggest that rapid pacing and poorly structured explanations disrupted students' ability to follow disciplinary content.

Participants also associated instructional clarity with intelligibility. As one participant explained, *"If the teacher's pronunciation is not clear, I don't know which words are important."* (Focus Group 3). Unclear pronunciation, unfamiliar intonation, and inconsistent emphasis on key terminology made it difficult to identify and connect key ideas during lectures.

In contrast, students reported lower anxiety when instructors organized lectures clearly, repeated key points, and supported explanations with visual aids. As one participant noted, *"When the teacher uses slides and explains step by step, I feel more confident."* (Focus Group 1). Another added, *"If the teacher repeats important points and gives examples, it helps me understand better."* These practices reduced cognitive demands by helping students maintain continuity in disciplinary understanding.

These findings are consistent with previous EMI research, which has highlighted structured delivery, repetition, and multimodal support as important facilitators of comprehension (Airey, 2012; Dafouz & Smit, 2016; Kohnke & Jarvis, 2023). The present study further suggests that instructional clarity depends not only on pedagogical organization but also on intelligibility. In engineering classrooms, where explanations are sequential and cumulative, clear organization, intelligible delivery, explicit signaling of key concepts, and multimodal support facilitated disciplinary understanding, whereas unclear instruction increased processing difficulty and listening anxiety.

Unlike the previous themes, instructional clarity functioned as a moderating condition in the listening anxiety process. Clear and intelligible instruction reduced the cognitive demands associated with disciplinary listening, whereas unclear instruction amplified them.

Contextual barriers

In addition to linguistic and instructional factors, participants identified contextual barriers that intensified listening anxiety during EMI lectures. These included poor classroom acoustics, environmental noise, and large lecture environments that disrupted sustained comprehension.

One participant with a high level of listening anxiety explained, *"Sometimes I cannot hear clearly, especially when there is noise, and I feel anxious that I miss important information."* Students from one university also reported frequent aircraft noise due to the campus's proximity to an air force base. As one participant explained, *"When the airplane passes, I cannot hear the teacher at all, and I miss part of the lecture."* (Focus Group 2). Another added, *"The noise interrupts the lecture, and when I miss one part, I cannot follow the rest."* (Focus Group 3). These interruptions disrupted the continuity of disciplinary understanding, as reflected in another participant's comment: *"If I don't hear one explanation clearly, I cannot understand the next step."* (Focus Group 1).

Participants also reported that large lecture halls made it difficult to recover from comprehension breakdowns because opportunities to seek clarification were limited. As one participant noted, *"In a big class, I cannot ask questions, so if I don't understand, I just stay confused."* (Focus Group 1).

These findings are consistent with previous research showing that environmental distractions, poor acoustics, and limited classroom interaction increase listening difficulty and reduce engagement in EMI settings (Graham, 2006; Kohnke & Jarvis, 2023; Vandergrift & Goh, 2012). The present study further demonstrates that contextual barriers amplified the effects of linguistic complexity, reduced intelligibility, and rapid lecture delivery. When students missed part of a lecture, they had to devote additional cognitive resources to reconstructing the missing information, which increased listening anxiety (Zhou & Thompson, 2023).

Consequently, contextual barriers functioned primarily as amplifiers rather than independent sources of listening anxiety. Environmental conditions intensified existing listening challenges, making comprehension breakdowns more difficult to overcome.

Across the five themes, a clear pattern emerged: listening anxiety developed as a dynamic process

shaped by the interaction of linguistic complexity, accent familiarity, performance-based anxiety, instructional clarity, and contextual barriers. Rather than operating independently, these situational conditions influenced learners' cognitive processing, emotional responses, and classroom participation during disciplinary listening. This process-oriented interpretation provides the conceptual foundation for the EMI Listening Anxiety-Coping Process Model presented in Section 4.3.

What coping strategies do engineering students employ to manage their listening anxiety?

Building on the situational triggers identified in Section 4.1, this analysis examined how students managed listening anxiety in EMI engineering classrooms. Findings from the individual and focus group interviews identified five interrelated coping strategies: self-preparation, peer support, instructional scaffolding, technology-enhanced comprehension, and motivation-driven listening development.

Table 3 summarizes these coping strategies, their common codes, and descriptions.

As shown in Table 3, students actively regulated their listening anxiety through cognitive, social, instructional, and technological strategies rather than passively responding to listening difficulties. These strategies supported comprehension at different stages of learning, including before lectures (self-preparation), during lectures (instructional scaffolding), and after lectures (peer support and technology-enhanced comprehension). These coping strategies represent the learner regulation component of the EMI Listening Anxiety-Coping Process Model, demonstrating how students actively managed comprehension difficulties and sustained engagement throughout disciplinary learning.

Self-preparation

Self-preparation emerged as a proactive strategy through which students reduced the linguistic and

Table 3: Coping strategies employed in EMI contexts to mitigate anxiety

Theme	Common Codes	Explanation
Self-Preparation	Prepare before class through previewing slides and content; Take notes and review materials after class; Build vocabulary through translation and repetition	Learner-initiated preparation to reduce listening demands before and after lectures.
Peer Support	Clarify content through peer discussion during or after class; Collaborate in study groups or peer tutoring sessions; Seek reassurance and emotional support from classmates	Collaborative learning that promotes comprehension and reduces anxiety.
Instructional Scaffolding	Monitor pacing and request repetition when needed; Follow content using multimodal resources (slides, visuals); Use of bilingual explanations to reinforce key content; Participate in engaging or gamified learning activities	Teacher support that facilitates real-time comprehension and lowers listening anxiety.
Technology- Enhanced Comprehension	Translate or define terms using AI tools and dictionaries; Replay audio recordings to reinforce understanding; Watch captioned media or podcasts to improve input clarity	Digital tools that support real-time and post-lecture comprehension.
Motivation-Driven Listening Development	Engage in authentic English-speaking contexts; Set goals and use self-talk to maintain motivation; Develop consistent practice habits through English-only environments	Practices that sustain motivation, confidence, and long-term listening development.

cognitive demands of EMI lectures before class. Participants described previewing lecture slides, reviewing technical vocabulary, and searching for background information before lectures. As one participant explained, *"I try to read the slides before class so I can follow better."* (Focus Group 2). Another added, *"If I know the vocabulary before, I don't need to translate everything during the lecture."* (Focus Group 1).

These accounts suggest that self-preparation activated prior knowledge, enabling students to process spoken English and disciplinary content more efficiently during lectures. In engineering EMI classrooms, where lectures are conceptually dense and terminology-rich, prior familiarity with key concepts reduced the demands of simultaneous language processing and disciplinary comprehension.

These findings are consistent with research on self-regulated learning, which shows that learners prepare strategically to manage cognitive demands (Zimmerman, 2008). They also support EMI studies demonstrating that previewing lecture materials and technical vocabulary facilitates comprehension (Kamaşak et al., 2021; Pomat et al., 2022). Consequently, self-preparation reduced uncertainty during lectures and functioned as an anticipatory form of learner regulation by lowering cognitive demands before disciplinary listening began.

Peer support

Peer support emerged as an important collaborative strategy through which students managed listening difficulties during and after EMI lectures. Participants frequently relied on classmates to clarify explanations, confirm understanding, and fill comprehension gaps. As one participant explained, *"After class, I ask my friends to explain what I didn't understand."* (Focus Group 3). Another added, *"Sometimes we discuss together because each person understands different parts."* (Focus Group 2).

These accounts suggest that disciplinary understanding in EMI classrooms is often constructed collaboratively rather than achieved solely through individual processing. Peer discussion enabled students to clarify misunderstandings, integrate fragmented information, and strengthen their understanding after challenging lectures.

Peer interaction also provided emotional reassurance. As one participant noted, *"When my friends also don't understand, I feel less worried."* (Focus Group 1). This suggests that peer support reduced anxiety by normalizing listening difficulties and increasing students' confidence in their understanding. These findings are consistent with second language and EMI research highlighting the value of collaborative learning and peer interaction for supporting comprehension and reducing anxiety (Kohnke & Jarvis, 2023; Pomat et al., 2022). The present findings further suggest that peer support functioned as both a cognitive and an affective form of learner regulation, helping students reconstruct understanding while reducing uncertainty during EMI learning.

Instructional scaffolding

Unlike instructional clarity, which became a source of anxiety when lacking, instructional scaffolding emerged as a supportive strategy that helped students overcome comprehension difficulties during EMI lectures. Participants frequently referred to lecture slides, diagrams, written notes, and step-by-step explanations as resources that helped them understand. As one participant explained, *"The diagrams help me understand even if I don't catch everything."* (Focus Group 1). Another added, *"When the teacher shows the steps, I can follow more easily."* (Focus Group 3).

These supports reduced reliance on spoken input alone by enabling students to connect verbal explanations with visual and textual information. In engineering EMI classrooms, where lectures involve abstract concepts and procedural explanations, multimodal support helped students maintain disciplinary understanding despite momentary listening difficulties.

Participants also reported that scaffolding compensated for rapid speech and unfamiliar accents. As one participant noted, *"If I miss some words, I can still understand from the slides."* (Focus Group 2). These findings are consistent with EMI research highlighting the value of multimodal instruction and pedagogical scaffolding for supporting comprehension (Airey, 2012; Dafouz & Smit, 2016; Kohnke & Jarvis, 2023). The present findings further suggest that

instructional scaffolding functioned as a regulatory resource, enabling students to compensate for temporary comprehension breakdowns and sustain disciplinary understanding during EMI lectures.

Technology-enhanced comprehension

Technology-enhanced strategies enabled students to continue processing lecture content beyond real-time classroom listening. Participants described using lecture recordings, online videos, translation tools, and AI-based applications to revisit unclear explanations after class. As one participant explained, *"After class, I rewatch the video and summarize what I missed."* (Focus Group 1). Another added, *"If I don't understand, I search on YouTube or use translation to check the meaning."* (Focus Group 3).

These strategies allowed students to revisit difficult content at their own pace, helping them recover from comprehension breakdowns caused by rapid speech, unfamiliar accents, and conceptually dense lectures. By enabling learners to control the pace and repetition of input, technology extended disciplinary learning beyond the classroom and increased their sense of control over the listening process.

These findings are consistent with research showing that digital tools support listening comprehension through flexible access to input and repeated exposure (Vandergrift & Goh, 2012; Zhang & Pérez-Paredes, 2021). EMI studies likewise report that lecture recordings and online resources facilitate comprehension of English-medium disciplinary content (Kohnke & Jarvis, 2023; Pomat et al., 2022). The present findings further suggest that technology functioned as a self-regulatory resource, enabling students to recover from comprehension breakdowns and sustain disciplinary learning beyond live EMI lectures.

Motivation-driven listening development

Some participants responded to listening challenges by investing in the long-term development of their English listening abilities. Rather than avoiding difficult listening situations, they increased their exposure to English through videos, podcasts, and other online resources. As one participant explained, *"If I don't understand, I try to practice more and improve my listening."* (Focus Group 2). Another added, *"I try to listen to English every day to get used to it."* (Focus Group 1).

Several participants also reported becoming more comfortable with different English accents over time. As one participant noted, *"At first, I was nervous when I heard different accents, but after listening more often, I became more comfortable."* (Focus Group 3). These accounts suggest that repeated exposure gradually reduced listening anxiety while increasing confidence in understanding disciplinary English.

These findings support research suggesting that moderate anxiety can foster sustained language development when learners engage in adaptive regulation and continued practice (MacIntyre, 2017; Tsui & Cheng, 2022). The findings further suggest that motivation-driven listening development represents a long-term regulatory strategy through which learners gradually strengthen their listening competence and resilience in EMI contexts.

Consequently, the findings indicate that students actively regulated listening anxiety through complementary cognitive, social, instructional, technological, and motivational strategies. Rather than relying on a single approach, they combined these strategies before, during, and after lectures to maintain disciplinary understanding under challenging EMI conditions. This adaptive pattern of learner regulation suggests that coping is an ongoing process shaped by the interaction between learner agency, instructional support, and contextual resources. These relationships provide the empirical foundation for the EMI Listening Anxiety-Coping Process Model presented in the following section.

A Process Model of EMI Listening Anxiety and Coping Strategies

Building on the findings from both research questions, this study proposes the EMI Listening Anxiety-Coping Process Model, which conceptualizes how listening anxiety emerges, manifests, and is regulated during disciplinary listening in EMI engineering classrooms.

As shown in Figure 1, the proposed process model comprises five interconnected components: situational triggers, cognitive-affective processing,

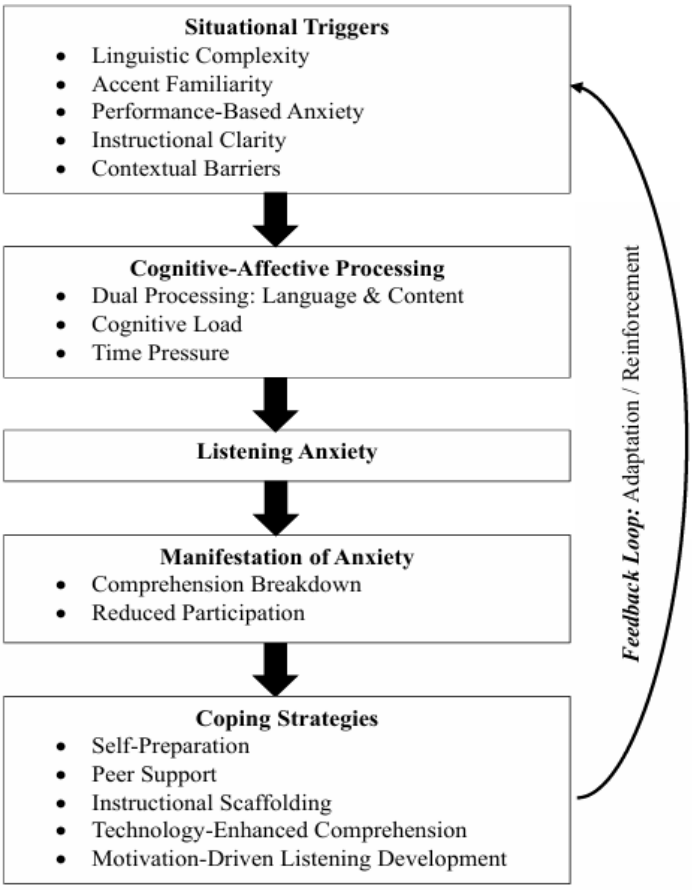

Fig. 1: EMI Listening Anxiety-Coping Process Model

listening anxiety, anxiety manifestations, and coping strategies. Consequently, these components explain how challenging listening conditions develop into anxiety and how learners subsequently regulate these experiences.

The process model extends earlier conceptualizations of foreign language anxiety by viewing listening anxiety as a dynamic process rather than a relatively stable learner trait (Horwitz et al., 1986; MacIntyre, 2017). Unlike previous studies that have examined listening difficulty, language proficiency, or anxiety as separate variables (Elkhafaifi, 2005; Kimura, 2011; Zhang, 2013), the present process model integrates situational, cognitive, affective, and regulatory dimensions within an EMI disciplinary context. In doing so, it complements recent EMI research emphasizing the interaction between language processing and disciplinary learning (Macaro et al., 2018; McKinley & Rose, 2022).

The process model begins with situational triggers, including linguistic complexity, accent familiarity, instructional clarity, performance-based anxiety, and contextual barriers. These conditions frequently interact during lectures, increasing the cognitive demands of disciplinary listening. Consistent with previous EMI research, rapid lecture delivery, technical terminology, unfamiliar accents, and limited opportunities for clarification intensify listening difficulty in English-medium classrooms (Rose et al., 2020; Kohnke & Jarvis, 2023; McKinley & Rose, 2022).

A central contribution of the process model is to position intelligibility as the mechanism linking

situational conditions to listening anxiety. When students encounter unfamiliar accents, unclear pronunciation, or rapid speech, additional cognitive effort is required to decode spoken input before learners can construct disciplinary meaning. Consistent with ELF perspectives (Jenkins, 2015; Smith & Nelson, 2019), the findings indicate that reduced intelligibility increases processing demands, disrupts disciplinary comprehension, and heightens listening anxiety.

The process model further shows that listening anxiety manifests as hesitation, reduced participation, and comprehension breakdowns. Rather than representing endpoints, these manifestations prompt learners to employ coping strategies such as self-preparation, peer support, instructional scaffolding, technology-enhanced comprehension, and motivation-driven listening development. The active role of learners in managing anxiety is consistent with recent research showing that language learners employ multiple coping strategies to manage anxiety-provoking language experiences (Liu et al., 2026). The present findings extend this perspective to disciplinary listening in EMI engineering classrooms by demonstrating that coping forms part of an evolving anxiety-coping process rather than occurring only after anxiety has emerged. From a self-regulation perspective, these strategies function as regulatory resources that help learners restore comprehension, reduce uncertainty, and sustain participation in EMI learning (Kamaşak et al., 2021; Pomat et al., 2022; Zimmerman, 2008). This interpretation positions coping as an integral part of the listening anxiety process rather than merely a collection of learning strategies.

Finally, the recursive feedback loop emphasizes that EMI listening anxiety is an adaptive rather than linear process. Effective coping may improve disciplinary comprehension, strengthen learners' confidence, and reduce future listening anxiety, whereas unresolved listening difficulties may reinforce uncertainty and intensify subsequent anxiety. This dynamic relationship is consistent with contemporary perspectives on language anxiety as an evolving system shaped by ongoing interactions between learners and their environments (MacIntyre, 2017). Consequently, the EMI Listening Anxiety-Coping Process Model integrates situational triggers, cognitive-affective processing, anxiety manifestations, and learner regulation into a single explanatory framework. The process model provides a conceptual framework for future research and pedagogical practice to understand and support listening across diverse EMI disciplines, institutional contexts, and learner populations.

Conclusion and Pedagogical Implications

This study investigated listening anxiety among undergraduate engineering students enrolled in EMI programs at two public universities in northeastern Thailand. The findings demonstrate that listening anxiety is a dynamic, context-dependent process shaped by the interaction of linguistic demands, intelligibility, instructional practices, cognitive processing, and classroom conditions in EMI engineering classrooms.

Five situational conditions were identified as triggering listening anxiety: linguistic complexity, accent familiarity, performance-based anxiety, instructional clarity, and contextual barriers. Rather than operating independently, these conditions interacted during EMI lectures, increasing cognitive demands and disrupting students' ability to construct disciplinary understanding. At the same time, students actively regulated these challenges through self-preparation, peer support, instructional scaffolding, technology-enhanced comprehension, and motivation-driven listening development. These findings demonstrate that coping is an integral component of the listening anxiety process rather than merely a response to anxiety after it occurs.

A major contribution of this study is the development of the EMI Listening Anxiety-Coping Process Model, which conceptualizes listening anxiety as an evolving process linking situational conditions, cognitive-affective processing, anxiety manifestations, and learner regulation. In particular, the proposed process model identifies intelligibility as a key mechanism through which linguistic variation influences cognitive processing and emotional responses during disciplinary listening. By integrating

these dimensions within a single explanatory framework, the proposed process model extends previous EMI research, which has typically examined listening anxiety, intelligibility, and coping as separate phenomena.

The findings also contribute to EMI scholarship by demonstrating that listening anxiety is closely tied to disciplinary learning rather than language proficiency alone. In engineering classrooms, where lectures involve technical terminology, cumulative explanations, and sequential reasoning, even brief comprehension breakdowns can disrupt subsequent understanding and heighten anxiety. These findings underscore the importance of examining listening anxiety within specific disciplinary contexts rather than treating it as a purely language-related phenomenon.

This study has some limitations. Because it was conducted in two public universities in northeastern Thailand, the findings may not be readily transferable to other EMI contexts. In addition, the analysis was primarily based on students' self-reported experiences rather than on direct classroom observations. Future research could examine the proposed process model across different disciplines and institutional settings, incorporate classroom observations, or adopt longitudinal designs to investigate how listening anxiety and coping develop over time.

Based on these conclusions, several implications for EMI engineering pedagogy can be identified. Because listening anxiety arises from the interaction among linguistic demands, intelligibility, instructional practices, cognitive processing, and classroom conditions, pedagogical responses should address not only students' English language development but also the conditions under which disciplinary content is communicated and processed. Effective EMI pedagogy should therefore support students' ability to process spoken English in real time while constructing disciplinary understanding.

One important implication is the need to reduce the cognitive demands of disciplinary listening. Participants described the challenge of processing technical terminology, unfamiliar accents, and conceptually dense explanations simultaneously during lectures. Instructors can support comprehension by segmenting complex explanations, emphasizing key concepts, using strategic pauses, clearly articulating technical terminology, and integrating visual materials with spoken explanations. These practices reduce processing demands and help students construct disciplinary understanding more effectively.

The findings also highlight the importance of supportive classroom interaction. Students' anxiety often intensified when they were expected to respond before they felt confident in their understanding. Allowing adequate processing time, encouraging clarification requests, and fostering a classroom climate in which questions and uncertainty are viewed as part of the learning process may reduce performance-related anxiety while promoting more active classroom participation.

Beyond classroom interaction, institutional support also plays an important role in shaping students' listening experiences. Improving classroom acoustics, providing lecture recordings, and offering supplementary digital learning resources can help students revisit challenging content and recover from comprehension breakdowns beyond the classroom. Such support is particularly valuable in EMI contexts, where students may need to revisit challenging content to maintain continuity in their disciplinary understanding.

The findings further underscore the importance of supporting learner self-regulation. Participants prepared for lectures, collaborated with peers, and used digital technologies to manage listening difficulties and strengthen their understanding. Providing pre-lecture materials, opportunities for collaborative learning, and access to appropriate digital resources can strengthen students' capacity to regulate the linguistic and cognitive demands of EMI learning while fostering greater confidence and independence.

Consequently, these implications suggest that effective EMI pedagogy should move beyond an exclusive focus on improving English proficiency toward developing learning environments that support intelligibility, instructional clarity, learner self-regulation, and disciplinary comprehension. The EMI Listening Anxiety-Coping Process Model can inform this effort by helping instructors and institutions identify

where anxiety may emerge within the listening process and where pedagogical or contextual support may be most effective. More broadly, this study advances a process-oriented understanding of EMI listening anxiety by demonstrating how situational conditions, cognitive-affective processing, anxiety manifestations, and learner regulation interact during disciplinary listening. The proposed process model therefore provides both a conceptual framework for future EMI research and a practical framework for designing learning environments that better support disciplinary comprehension, classroom participation, and learner well-being.

References

1. Airey, J. (2012). I don't teach language. *The linguistic attitudes of physics lecturers in*
2. *Sweden. AILA Review*, *25*(1), 64-79. https://doi.org/10.1075/aila.25.05air
3. Alanazi, K., & Curle, S. (2024, July). Challenges experienced by students studying medicine
4. through English medium instruction. In *Frontiers in Education* (Vol. 9, p. 1364860). Frontiers Media SA. https://doi.org/10.3389/feduc.2024.1364860
5. Boonsuk, Y. (2025). "Oh, this person speaks English in this way; they 'must be Thai'or they 'must be Chinese'": Developing global Englishes awareness among Thai secondary ELT stakeholders. *System*, *133*, 103733. https://doi.org/10.1016/j.system.2025.103733
6. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa
7. Canaran, Ö., Demirkol, T., Bayram, İ. & Doğan, M. (2022). Predicting perceived difficulty of English medium instruction (EMI) undergraduate courses. *International Online Journal of Education and Teaching*, *10*(1). 228-245. https://www.iojet.org/index.php/IOJET/article/view/1782
8. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
9. Dafouz, E., & Smit, U. (2016). Towards a dynamic conceptual framework for English-medium education in multilingual university settings. *Applied Linguistics*, *37*(3), 397-415.
10. https://doi.org/10.1093/applin/amu034
11. Dearden, J. (2014). *English as a medium of instruction-a growing global phenomenon*. British Council. https://www.britishcouncil.es/sites/default/files/british_council_english_as_a_medium_of_instruction.pdf
12. Elkhafaifi, H. (2005). Listening comprehension and anxiety in the Arabic language classroom. *The Modern Language Journal*, *89*(2), 206-220.
13. https://doi.org/10.1111/j.1540-4781.2005.00275.x
14. Field, J. (2010). Listening in the language classroom. *ELT Journal*, *64*(3), 331-333. https://doi.org/10.1093/elt/ccq026
15. Goh, C. C. (2000). A cognitive perspective on language learners' listening comprehension problems. *System*, *28*(1), 55-75. https://doi.org/10.1016/S0346-251X(99)00060-3
16. Graham, S. (2006). Listening comprehension: The learners' perspective. *System*, *34*(2), 165-182. https://doi.org/10.1016/j.system.2005.11.001
17. Gronchi, M., & Hopkyns, S. (2025). Teacher identity in English medium instruction: A scoping review of the literature on EMI in the EU. *Review of Education*, *13*(2), e70074. https://doi.org/10.1002/rev3.70074
18. Hengsadeekul, C., Koul, R., & Kaewkuekool, S. (2014). Motivational orientation and preference for English-medium programs in Thailand. *International Journal of Educational Research*, *66*, 35-44. https://doi.org/10.1016/j.ijer.2014.02.001
19. Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, *70*(2), 125-132.
20. https://doi.org/10.1111/j.1540-4781.1986.tb05256.x
21. Jenkins, J. (2015). Repositioning English and multilingualism in English as a Lingua Franca. *Englishes in Practice*, *2*(3), 49-85. https://doi.org/10.1515/eip-2015-0003
22. Kamaşak, R., Sahan, K., & Rose, H. (2021). Academic language-related challenges at an English-medium university. *Journal of English for*

Academic Purposes, *49*, 100945. https://doi.org/10.1016/j.jeap.2020.100945
23. Kimura, H. (2011). *A self-presentational perspective on foreign language listening anxiety*. Temple University. https://scholarshare.temple.edu/server/api/core/bitstreams/4af4697e-883d-47aa-a599-581d76a5c77b/content
24. Kohnke, L., & Jarvis, A. (2023). Addressing language and study skills challenges in online undergraduate EMI courses. *Education Sciences*, *13*(9), 958.
25. https://doi.org/10.3390/educsci13090958
26. Lincoln, Y.S. and Guba, E.G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications. https://doi.org/10.1016/0147-1767(85)90062-8
27. Liu, Y., Suppasetseree, S., & Chen, J. (2026). Factors contributing to foreign language speaking anxiety and the coping strategies: A case study in China. *International Online Journal of Education & Teaching*, *13*(2), 248-262.
28. https://www.iojet.org/index.php/IOJET/article/view/2331
29. Macaro, E., & Aizawa, I. (2024). Who owns English medium instruction?. *Journal of Multilingual and Multicultural Development*, *45*(10), 4037-4050.
30. https://doi.org/10.1080/01434632.2022.2136187
31. Macaro, E., & Rose, H. (2023). Introduction to the special issue on English medium instruction: Areas of research needing urgent attention. *Studies in Second Language Learning and Teaching*, *13*(2), 257-269. https://doi.org/10.14746/ssllt.38274
32. Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A systematic review of English medium instruction in higher education. *Language Teaching*, *51*(1), 36-76.
33. https://doi.org/10.1017/S0261444817000350
34. MacIntyre, P. D. (2017). An overview of language anxiety research and trends in its development. *New Insights into Language Anxiety: Theory, Research and Educational Implications*, *11*. https://doi.org/10.21832/9781783097722-003
35. McKinley, J., & Rose, H. (2022). English language teaching and English-medium instruction: Putting research into practice. *Journal of English-Medium Instruction*, *1*(1), 85-104. https://doi.org/10.1075/jemi.21026.mck
36. Meenasantirak, C., & Chaiyasuk, I. (2024). EMI classroom practices of international program in Thailand university: A perspective of EFL Thai's students. *International Journal of Sociologies and Anthropologies Science Reviews*, *4*(1), 333-350.
37. https://doi.org/10.60027/ijsasr.2024.3669
38. Moncada-Comas, B. (2022). What students have to say about EMI: Exploring university students' perspectives on changing the learning/teaching language to English. *ESP Today, 10*(2), 263-285. https://doi.org/10.18485/esptoday.2022.10.2.4
39. Pomat, N., Jannok, A., Buripakdi, A., & Wilang, J. D. (2022). Partial EMI nursing program: Insights from students and teachers in Thailand. *Theory and Practice in Language Studies*, *12*(7), 1386-1396. https://doi.org/10.17507/tpls.1207.19
40. Pomat, N., Jannok, A., Buripakdi, A., & Wilang, J. D. (2024). Exploring needs, challenges, and teaching norms in English-Medium instruction programs: Perspectives from university students and teachers. *International Journal of Instruction*, *17*(3), 177-198. https://doi.org/10.29333/iji.2024.17310a
41. Rose, H., Curle, S., Aizawa, I., & Thompson, G. (2020). What drives success in English medium taught courses? The interplay between language proficiency, academic skills, and motivation. *Studies in Higher Education*, *45*(11), 2149-2161.
42. https://doi.org/10.1080/03075079.2019.1590690
43. Seidlhofer, B. (2011). Conceptualizing 'English'for a multilingual Europe. *English in Europe Today: Sociocultural and Educational Perspectives*, 133-146.
44. https://doi.org/10.1075/aals.8.09sei
45. Smith, L. E., & Nelson, C. L. (2019). World Englishes and issues of intelligibility. *The Handbook of World Englishes*, 430-446. https://doi.org/10.1002/9781119147282.ch24
46. Tantiniranat, S., Fitriyah, S. M., & Pérez Gracia, E. (2024). Disentangling the complexities of English language education policies in diverse contexts: A comparative study. *Research in Comparative and International Education*, *19*(1), 112-130.
47. https://doi.org/10.1177/17454999241229650
48. Tsui, A. B., & Cheng, Y. S. (2022). Foreign language anxiety and English medium instruction

classrooms: An introduction. *English Teaching & Learning*, *46*(3), 203-212.
49. https://doi.org/10.1007/s42321-022-00122-9
50. Vandergrift, L., & Goh, C. C. M. (2012). *Teaching and learning second language listening: Metacognition in action* (Vol. 12). New York: Routledge.
51. https://doi.org/10.4324/9780203843376
52. Wilang, J. D. (2024). Exploring the mindsets of Thai undergraduate students: A comprehensive study of general and language-related beliefs. *Sage Open*, *14*(2), 1-17.
53. Shehaj, J., & Fita, E. (2026). Economics of Illicit Financial Activities in the Western Balkans: A Systematic Literature Review. Quality-Access to Success, 27(213), 61
54. Wilang, J. D., & Nupong, S. (2022). Factors affecting EMI attitudes of engineering and nursing students. *Theory and Practice in Language Studies*, *12*(3), 437-446.
55. https://doi.org/10.17507/tpls.1203.03
56. Zhang, D., & Pérez-Paredes, P. (2021). Chinese postgraduate EFL learners' self-directed use of mobile English learning resources. *Computer Assisted Language Learning*, *34*(8), 1128-1153. https://doi.org/10.1080/09588221.2019.1662455
57. Zhang, M., & Pladevall-Ballester, E. (2023). Students' English-medium instruction motivation in three English-medium instruction courses in China. *Frontiers in Psychology*, *13*, 1-14. https://doi.org/10.3389/fpsyg.2022.1077852
58. Zhang, X. (2013). Foreign language listening anxiety and listening performance: Conceptualizations and causal relationships. *System*, *41*(1), 164-177.
59. https://doi.org/10.1016/j.system.2013.01.004
60. Zhou, S., & Thompson, G. (2023). Exploring the role of English proficiency, self-efficacy, and motivation in listening for learners transitioning to an English-medium transnational university in China. *System*, *113*. https://doi.org/10.1016/j.system.2023.102998
61. Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, *45*(1), 166-183. https://doi.org/10.3102/0002831207312909