Language Anxiety and Coping Strategies of Non-English Majors in the Context of EMI Teaching

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Abstract: The widespread adoption of English-Medium Instruction (EMI) among non-English majors in higher education has brought increased attention to the issue of student language anxiety. Based on an empirical investigation, this study explores the specific manifestations of language anxiety in EMI classrooms, such as anxiety stemming from difficulties in listening comprehension and nervousness due to limited fluency in spoken English. Drawing on second language acquisition theory and informed by teaching practice, the paper proposes targeted coping strategies across five dimensions: curriculum design, instructional methods, teacher competence, learning support mechanisms, and assessment systems, aiming to provide practical guidance for alleviating language anxiety among non-English majors in EMI contexts.

Keywords: English-Medium Instruction (EMI); Non-English Majors; Language Anxiety; Second Language Acquisition; Coping Strategies

1. Introduction

As an important initiative in the internationalization of higher education, English-Medium Instruction (EMI) has been implemented across many universities in China for non-English major students. EMI requires instructors to deliver specialized knowledge in English, and students are expected to possess a certain level of language proficiency to keep up with classroom learning. However, due to disparities in English foundations, non-English majors often face dual challenges in language comprehension and expression during EMI classes, resulting in heightened language anxiety. This anxiety not only affects their classroom participation but also hampers their ability to absorb disciplinary content effectively.

To investigate this issue, this study conducted a questionnaire survey and classroom observations involving non-English major students from 10 universities. A total of 1,200 valid responses were collected, along with 300 hours of classroom observation. Based on this empirical data, the study explores the specific manifestations of language anxiety in EMI contexts and proposes practical coping strategies, aiming to provide a foundation for enhancing the quality of EMI instruction.

2. Current Situation of Language Anxiety Among Non-English Majors in the Context of EMI Teaching

2.1 Anxiety Manifestations Across Different Academic Stages

First-year students in EMI classrooms primarily experience anxiety due to unfamiliarity with subject-specific vocabulary. As newcomers to their disciplines, they are often overwhelmed by a large volume of technical terms in English, which makes it difficult for them to follow instructors' explanations. For instance, during a classroom observation of first-year mechanical engineering students, over 60% showed confused expressions when the instructor explained the concepts of *laminar flow* and *turbulent flow* in a course on fluid mechanics.

Second-year students often exhibit anxiety related to classroom interaction. In an EMI class for marketing majors, the instructor asked students to analyze the application of the "4P theory" in product promotion using English. Approximately 70% of the students avoided eye contact by looking down, and those called upon responded with fragmented and hesitant speech, frequently pausing with utterances like "uh" and "um." Their spoken responses often contained grammatical errors, such as "price is very important than product." Post-class interviews revealed that many students refrained from speaking due to fear of making grammatical mistakes or using inaccurate expressions.

Junior and senior students tend to feel more anxious about using English for reading

professional literature and writing academic reports. For example, during an assignment on the "ethics of artificial intelligence," nearly 80% of third-year computer science students reported difficulty understanding complex sentences in English research articles, such as "*the trade-off between algorithmic efficiency and privacy protection in machine learning applications.*" When drafting their reports, students struggled to express professional concepts like *algorithmic bias* in standard English and often revised repeatedly due to concerns over word choice, leading to frustration and discouragement.

2.2 Disciplines Differences in Language Anxiety

Science and engineering students primarily experience anxiety over the precise use of technical terminology. For example, computer science students studying data structures must understand the meanings of terms such as *linked list* and *stack* in English. In one programming class, a student misinterpreted *queue* as *stack*, which led to logical errors in their code.

In contrast, liberal arts students tend to feel anxious about coherence and logical flow in English expression. In a sociology group discussion on *social stratification*, one student struggled with pauses and disorganized sentence structures, saying, "*rich people... they have more... than poor.*" The student was subsequently criticized by group members for unclear articulation and became reluctant to participate further, showing signs of psychological pressure.

Medical students face anxiety over memorizing and correctly using specialized terminology. In anatomy courses, terms such as *humerus* and *femur* are complex and often confusing. In a classroom quiz, over 50% of students made errors in spelling or matching the terms, and some expressed concern that such mistakes could affect their performance in future clinical coursework, thus increasing their anxiety levels.

Table 1. Distribution of EMI Classroom Anxiety Sources Among Non-English Majors in Different Disciplines (N=1200)

Subject Category	Terminology Comprehension (%)	Oral Expression (%)	Literature Readings (%)	Academic Writing (%)	Classroom Interaction (%)
Science	68.3	42.1	56.7	51.2	38.5
Liberal Arts	35.6	72.4	48.9	63.5	67.8
Medical	72.5	45.3	68.2	61.7	40.2

3. Specific Problems of Language Anxiety Among Non-English Majors in the Context of EMI Teaching

3.1 Imbalance Between Language Proficiency and Professional Knowledge in the Curriculum

When designing EMI courses, colleges and universities often prioritize the delivery of disciplinary knowledge while neglecting the integration of English language skills with subject content. Most EMI courses adopt original English textbooks that contain complex sentence structures and numerous technical terms. Without sufficient linguistic preparation, non-English major students find it difficult to adapt quickly. For instance, the textbook *Signals and Systems*used in the *Electronic Information Engineering* program contains abstract English expressions such as, "*the Fourier transform decomposes a function of time into the frequencies that make it up.*" Students must simultaneously grasp theoretical principles and overcome language barriers, which frequently results in heightened anxiety.

Moreover, there is a lack of coordination between content courses and English language instruction. Most English courses still focus on basic linguistic components such as tenses, voice, and general grammar, offering little or no specialized training in the use of English for academic or professional purposes. For example, in an English course for civil engineering students at one university, a significant portion of class time is devoted to teaching the past simple tense, while English expressions relevant to the discipline-such as *reinforced concrete* and *prestress*-are rarely addressed. As a result, students are unable to effectively transfer their language knowledge into practical tools for learning in EMI classrooms.

3.2 Teaching Methods Lack Adaptability to Students' Language Proficiency

Most EMI instructors are subject-matter experts with strong disciplinary backgrounds, but they often lack training in English language teaching methodologies. Some adopt a "one-way delivery" approach, explaining content at a rapid

pace without accounting for students' listening comprehension abilities. For example, in an EMI economics class, the instructor explained the concept of *marginal effect* at a speech rate of 180 words per minute-well above the average student's comprehension threshold. As a result, 75% of the students reported that they could not fully understand the lecture.

During questioning sessions, instructors frequently require students to respond in English, which can create overwhelming pressure for those with limited language proficiency. In a law EMI class, when the teacher asked, "*What is the difference between civil law and common law?*", a student with weak English skills was called upon and became too nervous to speak. After that incident, the student remained silent for the rest of the semester.

In group discussions, students with lower English proficiency often remain quiet if their peers are more fluent, for fear of slowing down the group or making mistakes. For instance, in a management course discussion, one group included a student with an IELTS score of 7.5, while the other three had relatively low proficiency. The discussion was dominated by the high-proficiency student, and the others spoke only a few words. They later expressed reluctance to participate out of fear of being ridiculed for making linguistic errors.

Moreover, instructors rarely clarify or simplify complex English terminology when explaining technical content. For example, they may equate *ambiguity* with *uncertainty* without elaborating on the subtle differences between the two terms in a disciplinary context, which can hinder conceptual understanding.

3.3 Inadequate EMI Teaching Competence Among Instructors

The English proficiency and instructional competence of EMI teachers directly influence students' learning outcomes. Some subject teachers demonstrate non-standard pronunciation and grammatical inaccuracies in their spoken English. For example, a biology EMI instructor mispronounced *mitochondria* as *mitochodria*, forcing students to expend additional effort in decoding the content during lectures, which can lead to cognitive fatigue and heightened anxiety.

Many instructors also fail to recognize or appropriately respond to students' language anxiety. When students exhibit nervousness or hesitation in class, teachers often neglect to offer timely encouragement or support. Instead, they may respond with criticism or pressure. In a history EMI class, for instance, a student paused several times while answering a question, and the teacher simply responded, "*You should prepare better.*" As a result, the student refrained from participating in subsequent class discussions.

Furthermore, teachers often lack the pedagogical awareness to integrate language instruction with disciplinary content. In a marketing course, for example, the instructor introduced the *4P theory* by listing the terms *product, price, place, promotion* in English, but failed to guide students in formulating accurate and complete definitions, such as "*Product refers to the goods or services offered by a company.*" This omission limits students' ability to apply professional English effectively in future learning contexts.

3.4 Incomplete Support System for Students' Self-Directed Learning

Non-English major students often lack adequate support for self-directed learning in EMI contexts. Although many universities have established English learning centres, these typically offer general English resources, such as *New Horizons* textbooks, rather than materials tailored to academic or disciplinary needs. Resources such as major-specific English terminology handbooks or academic reading guides are often unavailable. For example, a chemistry student reported encountering the term *heterogeneous catalysis* while reading an English research article but was unable to find a detailed explanation in the school's English learning center. As a result, the student had to search for information online, which was time-consuming and inefficient.

When students face challenges in English learning after class, it is often difficult to find qualified instructors for support. Consequently, they are left to consult reference materials on their own, which can be inefficient and discouraging. For instance, an environmental science student was uncertain how to properly express "sustainable development" in English while writing a paper. He considered seeking help from a teacher but was unsure whether to approach a subject-matter expert or an English language instructor.

Additionally, university online learning platforms typically offer limited functionality, often restricted to video lecture playback.

Features such as interactive Q&A, personalized feedback, or progress tracking are lacking. On one EMI platform, for instance, students were only able to rewatch recorded lectures, without access to instructor feedback or peer benchmarks, making it difficult to monitor their progress or clarify confusion in a timely manner.

3.5 Unbalanced Evaluation Criteria in Assessing Language Use

The evaluation system in EMI courses tends to prioritize the assessment of disciplinary knowledge while providing insufficient attention to students' English language proficiency. In many final examinations, 80% of the questions focus on subject content, with only 20% addressing language use-and even those are often limited to simple tasks such as vocabulary spelling and sentence translation. For example, in a final exam for physics majors, the English-related section included only the spelling of ten technical terms and the translation of five simple sentences, such as "*Translate 'the law of conservation of energy' into English."* This imbalance causes students to undervalue language learning, often resorting to last-minute memorization of terminology, which does little to improve their overall language competence.

In evaluating classroom performance, instructors tend to prioritize the accuracy of answers to professional questions while overlooking the fluency and grammatical correctness of students' English expression. In a philosophy EMI class, for instance, a student gave an English response that was riddled with grammatical errors and lacked fluency, yet still received a high score. Such practices fail to incentivize students to improve their academic English skills.

Table 2. Proportion of Assessment Content in EMI Courses

Evaluation Content	Subject Knowledge (%)	English Vocabulary & Grammar (%)	Professional English Reading (%)	Professional English Writing (%)	Spoken English in Class (%)
Summative	80	10	5	3	2
Formative	60	15	10	10	5

4. Coping Strategies for Language Anxiety Among Non-English Majors in the Context of EMI Teaching

4.1 Optimizing the Curriculum and Enhancing the Integration of Language and Professional Knowledge

To effectively mitigate language anxiety in EMI settings, higher education institutions should establish interdisciplinary curriculum design teams comprising subject specialists, English language instructors, and educational researchers. These teams are responsible for aligning EMI course content with both the disciplinary training objectives and the linguistic competencies of the target student population[1].

At the outset of the academic term, institutions should offer a preparatory module that systematically introduces students to the English terminology of their respective disciplines, as well as to common syntactic structures and academic reading strategies. For example, in the context of mechanical engineering, this module may include instruction on key terms such as *mechanical design* and *mechanics of materials*, presented through practical case studies to promote contextualized understanding.

During the regular delivery of EMI courses, each session should incorporate a dedicated "language focus" component. This segment allows instructors to explain complex sentence patterns and technical expressions encountered in the lesson. For instance, the conceptual distinction between *stress* and *strain* can be clarified through precise definitions and contextual examples, thereby reinforcing disciplinary comprehension.

Furthermore, the development of bilingual instructional materials is essential. These materials should provide Chinese annotations alongside the English content and highlight lexical features such as synonyms, antonyms, and common collocations of key technical terms. An illustrative entry might include: *velocity (synonym: speed; antonym: slowness; collocation: velocity of flow)*. Such resources serve to bridge the gap between language proficiency and disciplinary learning, supporting students in acquiring both content knowledge and academic language competence.

4.2 Innovating Pedagogical Strategies to Align with Students' Linguistic Competence

To alleviate language anxiety among students, EMI instructors should employ diversified teaching strategies tailored to varying levels of English proficiency. During instruction, teachers are advised to slow their speech rate to approximately 120–150 words per minute,

repeat key information two to three times, and supplement verbal explanations with body language, diagrams, and other visual aids[2]. For example, when explaining the concept of *force* in a physics class, an experiment involving two colliding objects can be used to reinforce understanding.

The "hierarchical questioning" technique can be used to differentiate instruction and scaffold student participation. Students with lower English proficiency can respond to yes/no questions. Intermediate learners can be assigned *wh-* questions. More advanced students may respond to open-ended analytical prompts.

Group discussions should be organized using a heterogeneous grouping model, where 4–5 students of varying English abilities are placed together, ensuring that each group includes one or two more proficient speakers. These advanced learners are encouraged to support their peers, while instructors circulate to offer linguistic guidance and timely encouragement. For instance, in a psychology course discussion, a student with limited English skills struggled to express the concept of *herd mentality*. A more proficient peer suggested the term *conformity* and explained its meaning. Upon observing this exchange, the instructor praised the group, reinforcing a positive and collaborative learning atmosphere.

4.3 Improving Faculty Competence in EMI Instruction

To ensure the effectiveness of EMI, higher education institutions should implement sustained professional development initiatives for faculty, mandating no fewer than 40 hours of targeted training annually. These programs should encompass core areas such as English language proficiency enhancement, second language acquisition (SLA) theory, and intercultural communication. Qualified English language instructors may be invited to deliver oral English training sessions, focusing on improving pronunciation accuracy, fluency, and classroom delivery skills tailored to EMI contexts [3]. Instructors should also be introduced to foundational SLA theories-such as Krashen's Input Hypothesis-to deepen their understanding of how language acquisition processes influence student learning. This theoretical grounding equips EMI faculty with pedagogical insights for adjusting their instructional practices to support language development alongside content mastery better.

To bridge theory and practice, experienced EMI faculty should be invited to deliver model lessons demonstrating effective integration of language instruction within subject teaching. A systematic teaching reflection mechanism should also be institutionalized. Instructors are encouraged to maintain weekly journals documenting classroom language challenges and student anxiety indicators[4]. These reflections can be further explored during biweekly teaching and research seminars, which serve as platforms for professional dialogue, peer feedback, and collective problem-solving. Additionally, interdisciplinary collaboration between EMI instructors and English language faculty should be actively promoted. Joint lesson planning can enhance the linguistic clarity, grammatical accuracy, and rhetorical coherence of instructional materials.

By systematically strengthening EMI teaching competencies through theory-informed training, reflective practice, and interdisciplinary collaboration, institutions can foster more effective and linguistically accessible learning environments.

4.4 Enhancing the Support System for Students' Independent Learning

To facilitate student autonomy in EMI environments, universities should integrate academic resources and establish discipline-specific English learning support systems. Central to this effort is the development of a comprehensive professional English resource library that caters to the linguistic and academic needs of various disciplines[5]. This repository should include English-language textbooks, technical glossaries, handbooks of specialized terminology, video tutorials on academic reading strategies, and writing templates tailored to field-specific genres [6]. For example, the medical section might feature English-language atlases, diagnostic glossaries, and annotated case studies relevant to fields such as anatomy and pathology-e.g., "a case report on myocardial infarction with a detailed English description of symptoms and treatment protocols."

To provide individualized academic support, an EMI Learning Tutoring Center should be established and staffed by both subject-matter instructors and English language specialists working on a rotating schedule, aiming to assist

students in overcoming discipline-specific language challenges[7]. Furthermore, the university's digital learning platform should be enhanced to include an interactive Q&A forum, allowing students to submit both written and voice-based queries. Faculty members should respond within a reasonable time to ensure timely academic support. A data-driven progress tracking system should also be implemented to monitor learners' engagement metrics-such as video viewing duration and assignment completion rates-and generate personalized feedback. Based on this learning analytics framework, the platform should automatically recommend targeted resources to address individual knowledge gaps, thereby promoting more efficient and self-directed learning.

4.5 Refining the Evaluation System to Comprehensively Assess Language Proficiency

To more accurately evaluate students' ability to use English in academic settings, both the content and format of assessment in EMI courses should be restructured to place greater emphasis on language competence[8]. Specifically, final examinations should increase the weighting of English-language reading and writing components to at least 20%.

In-class performance assessments should also explicitly evaluate students' oral fluency and accuracy in using technical terminology. A detailed grading rubric should be developed, incorporating dimensions such as fluency (speaks clearly with minimal hesitation or pauses, 5 points), terminology use (employs appropriate and precise subject-specific vocabulary, 3 points), structure (presents information in a logical and organized manner, 2 points). To promote classroom engagement, students who actively participate in discussions or volunteer to speak may be awarded bonus points (e.g., 0.5–1 point per contribution), which are added to their overall participation score.

In addition to summative assessments, formative evaluation methods should be implemented to provide a more holistic picture of students' progress. These may include classroom exercises, group projects, and periodic quizzes. In-class activities such as *terminology matching* and *sentence translation* reinforce key vocabulary and syntactic structures. Group projects should require students to conduct discipline-specific research and deliver findings in English. Moreover, two to three formative quizzes should be administered each semester to track students' mastery of professional English over time. These quizzes enable instructors to provide timely, targeted feedback and adjust pedagogical strategies to better support learners' language development within disciplinary contexts.

5. Conclusion

Language anxiety experienced by non-English major students in EMI contexts arises from the complex interaction of multiple factors, including curriculum design, pedagogical approaches, instructor proficiency, learning support infrastructure, and assessment practices. To develop more effective interventions, future research should expand the scope of empirical investigation by incorporating larger and more diverse samples, with particular attention to variations in language anxiety across academic levels, disciplines, and gender.

Furthermore, the relationship between language anxiety and students' academic performance in EMI settings warrants closer examination, as language-related stress may directly affect content learning outcomes. Addressing these challenges through systemic reforms can contribute to the sustainable development of EMI for non-English majors. Ultimately, such efforts will help cultivate globally competent graduates who possess both robust disciplinary expertise and the ability to communicate effectively in English across academic and professional contexts.

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