Insights into English as a foreign language students' engagement in English medium instruction classes

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Abstract:

English medium instruction (EMI) has gained significance in English language education; however, research on English as a foreign language (EFL) students' engagement in EMI classes in different contexts, such as Vietnam, has not been extensively explored. This study aims to investigate EFL students' engagement in EMI classes. One hundred and eighty students from various majors were sampled from a higher education institution in Ho Chi Minh city, Vietnam. A quantitative approach was employed, utilising a closed-ended questionnaire for data collection. Data were analysed using SPSS software for descriptive and inferential statistics. The findings demonstrated that EFL students exhibited a high level of engagement in EMI classes across three aspects: behavioural, cognitive, and emotional engagement; however, students showed their cognitive engagement at the highest level, followed by emotional and behavioural engagement. Notably, the study revealed a significant difference in EFL students' engagement in EMI between hard sciences and soft sciences. This study suggests several pedagogical implications for enhancing student engagement in EMI classes at the context of higher education institutions in Vietnam and other similar ones.

Keywords: **engagement, English as a foreign language (EFL), English medium instruction (EMI), hard sciences, soft sciences.**

Classification numbers: **3.1, 3.2, 9.1**

1. Introduction

English, as a globally dominant lingua franca, plays an irreplaceable role in international communication and affects various fields, such as business, diplomacy, and academia. This phenomenon is clearly evident in cyberspace, where the English language can be found throughout online content and worldwide media [1]. Consequently, this linguistic hegemony of English has enabled it to become the primary medium for global communication and to establish policies in numerous cultural settings with different languages. Accordingly, English has become an international language of instruction for those who do not speak it natively. To put it simply, the use of English, which is not the students' first language, is intended to transmit subject content rather than language content. This is referred to as EMI [2], commonly adopted in universities and schools in various contexts as part of internationalisation efforts,

which aim to improve students' English proficiency while delivering subject knowledge [3].

Research on different aspects of EMI in the Vietnamese context has been conducted. For example, H.V. Nguyen, et al. (2022) [4] identified that while EMI could enhance students' English language skills and academic skills, students still encountered a number of pedagogical and cultural difficulties. They highlighted the necessity for contextualised methods that consider students' diverse linguistic requirements. Likewise, T.T.H. Le (2021) [5] conducted a study that found students in EMI classes still faced various challenges related to English language skills and subject knowledge. Additionally, N.T. Hoang, et al. (2023) [6] carried out a study exploring students' challenges in EMI courses and found that while students had positive perspectives on EMI courses, they still faced several challenges (e.g., students' English language

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knowledge, motivation, and lecturers' teaching methods) in taking EMI courses. Nevertheless, the research focus on students' engagement in EMI courses remains underexplored, indicating a need for further investigation.

Within the research context of a higher education institution located in Ho Chi Minh city, both local and international training programmes are delivered in Vietnamese and English, respectively. Regarding the international training programmes (e.g., civil engineering, environmental engineering, mechatronics, international business, marketing, accounting, etc.), English is used as the main language of instruction. Students are required to meet the English language proficiency standards for such training programmes; therefore, they must take general English courses and pass an English language proficiency test. It has been observed that EMI students in this context often face challenges in their studies. The predominant issue for them is that many students struggle with technical terms in English and with subject content delivered in English. Additionally, they are seen to have difficulties engaging in EMI classes due to their insufficient understanding of subject knowledge. Therefore, this study endeavours to investigate students' engagement in EMI classes at a higher education institution located in Ho Chi Minh city. It addresses a pair of research questions as follows:

What is EFL students' level of engagement in EMI classes?

Are there any significant differences in EFL students' engagement in EMI classes in terms of academic disciplines? If so, how?

This research can contribute to the existing body of literature in understanding EFL students' engagement in EMI classes. Moreover, it is hoped to provide insights into EFL students' engagement in EMI classes at higher education levels, which can be practical for stakeholders (e.g., teachers, students, administrators) to adjust teaching strategies, curriculum designs, and language policies.

2. Literature review

2.1. Student engagement in English medium instruction

Student engagement is crucial for improving learning outcomes and is typically categorised into three components: behavioural engagement (participation and effort in activities), emotional engagement (attitudes towards education), and cognitive engagement (mental investment in learning and self-regulation). These dimensions are interrelated and essential for effective learning in higher education [7, 8]. Engaged students are more motivated, persist longer, and demonstrate a deeper understanding of course materials [9]. Collaborative environments also enhance engagement by fostering skills such as communication and teamwork, which are valuable both academically and professionally [10].

EMI is an increasing trend globally, especially in non-native English-speaking countries, where it is used to prepare students for international academic and professional settings [11]. EMI enhances students' English proficiency and helps them navigate globalised academic and work environments. Additionally, research [12] shows that EMI not only improves language skills but also promotes intercultural collaboration and prepares students for success in global markets. In many contexts, EMI is implemented through various strategies, such as offering English for academic purposes courses and directly enrolling students in EMI courses [13].

Students' engagement in EMI classes can vary significantly depending on their academic discipline. In hard sciences (e.g., civil engineering, environmental engineering, mechatronics), students are more likely to exhibit high cognitive engagement but may struggle with emotional engagement if their language proficiency is low [14]. In soft sciences (e.g., international business, marketing, accounting), language plays a central role in learning, leading to greater emotional and cognitive engagement [15]. Previous studies suggested that EMI can boost both language skills and job prospects, but the level of engagement differs across fields, highlighting the need for tailored teaching strategies [16, 17].

2.2. Studies on English medium instruction

Previous research has studied EMI in a variety of circumstances and from a range of perspectives. Likewise, L. Jiang, et al. (2024) [18] investigated students' motivation and active participation in EMI programmes at Chinese universities. They employed a multidimensional approach to modify the motivation and engagement scale data from 696 students across 34 universities. It was found that students reported high levels of motivation and

engagement in EMI classes, and individual variations (e.g., gender, region, grade, major, and institutional prestige and profession) affected students' motivation and engagement in EMI classes. In a similar context, H. Liu, et al. (2024) [19] examined the relationships between language boredom, engagement, and buoyancy by using a questionnaire to collect data from 2,992 Chinese language learners. The results indicated that the factor of boredom strongly and negatively influenced engagement. The factors of engagement and buoyancy acted as mediators in the relationship between boredom and engagement. In the Vietnamese context, T.T.Q. Tran, et al. (2019) [20] explored Vietnamese higher education institutions' views on students' English proficiency and how they prepared students' English proficiency for EMI classes. Using document analysis and purposive sampling at eight universities, their qualitative study found inconsistencies in English proficiency requirements as well as differences in practices across preparatory programmes. Furthermore, T.H. Tran (2024) [21] studied the effects of EMI programmes at a northern university in Vietnam and found that EMI courses could improve students' job prospects, English proficiency, and social skills. Additionally, EMI students faced various challenges, such as learning methods and emotional issues.

Moreover, H.Q. Ngo, et al. (2021) [22] assessed the impact of motivation on student engagement and academic achievement, reiterating that only high-level intrinsic motivation may provide cognitive involvement, with no direct influences from any form of extrinsic motivational characteristics to improve learning outcomes. Subsequently, H.T. Nguyen, et al. (2022) [23] and H.T. Nguyen, et al. (2023) [24] explored EFL students' perceptions of the challenges in EMI classes to support the implementation of EMI classroom practices, using a questionnaire and interviews to collect data from 280 students. They found that students encountered different challenges (emotion, motivation, engagement with learning materials, and English language proficiency) during EMI courses.

The studies collectively underscore the significance of EMI in global education by offering insights into both its potential benefits and challenges across various educational environments. Nevertheless, the research conducted in the Vietnamese context regarding the participation of EFL students in EMI classes has certain limitations. To that end, this study aims to examine EFL students' level of engagement as well as their engagement in EMI classes concerning different majors.

3. Methodology

3.1. Research setting and participants

This study was conducted at a higher education institution in Ho Chi Minh city, where the EMI programmes are designed to cultivate English-speaking and globally minded students. The teaching and learning activities are carried out in English. Students participate in affiliate programs or international standard programs in which English is the primary language of instruction. To pursue such training programmes, students are required to take general English courses (from English 1 to English 6, totalling 18 credits) and pass an English proficiency test. If students already possess international English proficiency certificates indicating band scores of 5.0 or higher, they can enrol in EMI courses without taking general English courses. In EMI courses, all subjects are taught in English by both foreign and local lecturers. Additionally, all exams are administered in English.

A quantitative approach was employed to investigate EFL students' engagement in EMI classes. A total of 180 participants were sampled using the convenience sampling technique. There were 71 (39.4%) juniors and 109 (60.6%) seniors. 84 (46.7%) participants majored in hard sciences (e.g., civil engineering, environmental engineering, mechatronics, etc.), while 96 (53.3%) participants were in soft sciences (e.g., international business, marketing, accounting, law, etc.).

3.2. Research instrument

The questionnaire, which was adapted from the study by T.N. Le, et al. (2023) [25] was employed to measure the students' level of engagement in EMI classes. It consists of two sections: Section 1 seeks the participants' general information, and Section 2 includes 15 items collecting data on students' engagement in terms of behavioural (5 items), cognitive (5 items), and emotional engagement (5 items). A five-point Likert scale was used, ranging from strongly disagree to strongly agree. The questionnaire was piloted, and modifications in terms of language and content were made before it was officially used. Additionally, the instrument was designed in English and then translated into Vietnamese to ensure that respondents did not encounter any language difficulties.

To validate the questionnaire, confirmatory factor analysis was conducted on the 15 items divided into three group factors with a sample of 180 respondents. The results of the model fit showed that $\chi^2/df=2.14$, CFI=0.93, TLI=0.91, RMSEA=0.06, and SRMR=0.05, indicating an acceptable-to-good model fit. All 15 items loaded onto three factors were statistically significant (p<0.001) and indicated standardised factor loadings ranging from 0.62 to 0.80, confirming the construct validity of the questionnaire. The Cronbach's alpha of the questionnaire is 0.92 (behavioural engagement =0.80, cognitive engagement =0.89, and emotional engagement =0.83), which indicates that the reliability of the questionnaire was very high.

3.3. Procedures for data collection and analysis

The questionnaire in Google Forms was sent to students, and it took them around 20 minutes to complete; however, it took approximately four weeks to collect 180 valid responses. The collected data were analysed in terms of descriptive statistics (mean and standard deviation) and inferential statistics. The five-point Likert scale was interpreted as follows: 1-1.80: strongly disagree; 1.81-2.60: disagree; 2.61-3.40: neutral; 3.41-4.20: agree; 4.21-5.00: strongly agree. Intra-rating was used to guarantee the validity and reliability of data analysis. The data were analysed twice by the same researchers. First, the data were analysed, and results were obtained. Then, after three weeks, the same data set was re-analysed by the same researchers to cross-check the results. The same results from both analyses were obtained, indicating that the data analysis was valid and reliable.

4. Results and discussion

4.1. Results

4.1.1. English as a foreign language students' engagement in English medium instruction classes

Table 1 indicates that students displayed a high level of engagement in the EMI classes (M=3.88; SD=0.61) across all three engagement components. Specifically, students reported high levels of engagement within each component: behavioural engagement (M=3.81, SD=0.67), cognitive engagement (M=3.99, SD=0.69), and emotional engagement (M=3.84, SD=0.68). Out of the three types of engagement, cognitive engagement had the highest average score, indicating that students felt most mentally connected to the EMI

course. Behavioural and emotional engagement were slightly lower, with behavioural engagement being the lowest. This suggests that students were most engaged cognitively in EMI classes.

Table 1. English as a foreign language students' engagement in English medium instruction classes.

No.	Engagement	N=180	
		Mean	*SD*
1	Behavioural	3.81	0.67
2	Cognitive	3.99	0.69
3	Emotional	3.84	0.68
	Average	**3.88**	**0.61**

Source: Data from this study.

EFL students' behavioural engagement in EMI classes:

The results in Table 2 reveal that most EFL students agreed that they tried to respond to all teachers' questions (item 5: M=3.93; SD=0.91), completed all their learning tasks (item 3: M=3.90; SD=0.87), and shared their perspectives (item 4: M =3.89; SD=0.90) in EMI classes. They also acknowledged that they participated in all learning activities in EMI classes (item 1: M=3.68; SD=0.97) and made an effort to attend all their EMI classes (item 2: M=3.67; SD=0.88). In brief, students tended to engage behaviourally in completing language tasks in EMI classes at a high level.

Table 2. English as a foreign language students' behavioural engagement in English medium instruction classes.

No.	Behavioural engagement	N=180	
		Mean	*SD*
1	I participate in all learning activities in EMI classes.	3.68	0.97
2	I try to attend all my EMI classes.	3.67	0.88
3	I complete all my learning tasks in EMI classes.	3.90	0.87
4	I try to share my perspective in EMI classes.	3.89	0.90
5	I try to respond to teachers' questions in EMI classes.	3.93	0.91

Source: Data from this study.

EFL students' cognitive engagement in EMI classes:

As seen in Table 3, EFL students asked questions to better understand what they were learning (item 9: M=4.11; SD=0.79) and engaged in learning activities

to gain new knowledge (item 10: M=4.06; SD=0.71) in EMI classes. Additionally, they paid attention to learning activities (item 6: M=3.98; SD=0.86), stayed focused (item 7: M=3.82; SD=0.95), and requested explanations from teachers (item 8: M=3.96; SD=0.82) in EMI classes. In short, students demonstrated a high level of cognitive engagement in EMI classes.

Table 3. English as a foreign language students' cognitive engagement in English medium instruction classes.

No.	Cognitive engagement	N=180	
		Mean	SD
6	I pay attention to learning activities in EMI classes.	3.98	0.86
7	I stay focused during EMI classes.	3.82	0.95
8	I ask for explanations from teachers in EMI classes.	3.96	0.82
9	I ask questions to better understand what I am learning in EMI classes.	4.11	0.79
10	I get engaged in learning activities to gain new knowledge in EMI classes.	4.06	0.71

Source: Data from this study.

EFL students' emotional engagement in EMI classes:

EFL students (see Table 4) reported that they were motivated to take EMI classes (item 12: M=3.91; SD=0.96), interested in acquiring new knowledge (item 14: M=3.76; SD=0.89), and enjoyed participating in learning activities (item 15: M=3.81; SD=0.79) in EMI classes. Additionally, they felt comfortable sharing their thoughts during class discussions (item 13: M=3.88; SD=0.90) and were excited to discuss the topics (item 11: M=3.82; SD=0.88). Generally, EFL students appeared to engage emotionally in EMI classes at a high level.

Table 4. English as a foreign language students' emotional engagement in English medium instruction classes.

No.	Emotional engagement	N=180	
		Mean	SD
11	I feel excited to discuss the topics in EMI classes.	3.82	0.88
12	I am motivated to take EMI classes.	3.91	0.96
13	I feel comfortable sharing my thoughts during class discussion in EMI classes.	3.88	0.90
14	I am interested in learning new knowledge in EMI classes.	3.76	0.89
15	I enjoy partaking in learning activities in EMI classes.	3.81	0.79

Source: Data from this study.

4.1.2. Differences in English as a foreign language students' engagement in English medium instruction classes in terms of academic disciplines

As shown in Table 5, there were significant differences in students' engagement in EMI classes based on their majors. Students majoring in soft sciences tended to be more engaged in EMI classes than those majoring in hard sciences. Students in soft sciences (M=3.94; SD=0.67) exhibited a higher level of behavioural engagement (t=2.030; p=0.044) than those in hard sciences (M=3.74; SD=0.63). Similarly, students in soft sciences (M=3.94; SD=0.63) demonstrated a higher level of cognitive engagement (t=2.575; p=0.011) than those in hard sciences (M=3.68; SD=0.71). Finally, students in hard sciences (M=3.72; SD=0.63) showed a lower level of emotional engagement (t=2.002; p=0.047) compared to those in soft sciences (M=3.90; SD=0.55).

Table 5. Differences in English as a foreign language students' engagement in English medium instruction classes in terms of academic disciplines.

	Soft sciences mean (SD)	Hard sciences mean (SD)	t	Sig.
Behavioural engagement	3.94(0.67)	3.74(0.63)	2.030	0.044*
Cognitive engagement	3.94(0.63)	3.68(0.71)	2.575	0.011*
Emotional engagement	3.90(0.55)	3.72(0.63)	2.002	0.047

*p<0.05. Source: Data from this study.

4.2. Discussion

This study had two key findings. First, the study showed that EFL students actively engaged in EMI classes, with cognitive engagement being the most prominent, followed by emotional and behavioural engagement. This suggests that students were not only actively involved in their learning but also engaged intellectually and developed emotional connections to the content. In terms of behavioural engagement, EFL students demonstrated a high level of engagement in EMI classes. As students in this study were required to have good English language proficiency to take EMI classes, they may have felt eager to engage in these classes to achieve good academic results. Therefore, they tried to engage in EMI as much as possible. This finding partially aligns with that of A.J. Fredricks, et al. (2004) [26], which showed that academic achievement and behavioural engagement were positively correlated.

Concerning cognitive engagement, students were deemed active in engaging in EMI classes for knowledge. They may have been aware of the importance of the knowledge taught in EMI classes, leading them to pay close attention to learning activities, stay focused, and seek explanations for a better understanding of the content. Furthermore, students' active behaviours in class could lead to a high level of cognitive engagement. This finding was supported by N.M.M. Zainuddin, et al. (2020) [27], which revealed that participation in class activities was enhanced by active learning. As for emotional engagement, EFL students were found to engage emotionally in EMI classes at a high level. Within the EMI classes, they felt more excited, motivated, comfortable, and interested in participating in various learning activities for knowledge and content clarification. As discussed above, students exhibited high levels of behavioural and cognitive engagement, which could result in a high level of emotional engagement. This finding is consistent with J. Han (2023) [28] study, which discovered that engaging positive emotions, such as pleasure and joy when working with classmates and professors, as well as interest and curiosity about academic subjects, was beneficial. Students believed that they had strong connections, feeling comfortable sharing their perspectives during EMI class discussions. Consistent with the findings of A.J. Fredricks, et al. (2004) [26], many students felt at ease sharing their perspectives, which strengthened their sense of belonging in the classes.

Second, the study highlighted a significant difference in engagement levels between students in soft sciences and hard sciences. Students in soft science disciplines exhibited higher levels of engagement across all three dimensions (cognitive, behavioural, and emotional engagement) than those in hard sciences. This indicates that the nature of the subject matter and the teaching methods may influence how students engage with the content in EMI classes. Soft science subjects, with their emphasis on discussion and communication, may foster a more dynamic and emotionally invested classroom environment, while hard science courses tend to focus more on technical knowledge, requiring higher cognitive engagement but leaving less room for emotional or behavioural involvement. Moreover, students in soft sciences were more inclined to contribute fully to class discussions, demonstrate intellectual curiosity, and establish an emotional connection to the content. In contrast, hard science students tended to be more passive in their participation, with lower emotional involvement and less intellectual curiosity. This disparity in engagement can be attributed to the distinct characteristics of the subjects.

Additionally, soft sciences may involve more interactive and communicative learning environments, which can promote a more dynamic, emotionally invested, and behaviourally engaged classroom experience. On the other hand, hard science courses, while intellectually stimulating, may place greater emphasis on technical mastery, which could lead to more cognitive engagement but less emotional or behavioural involvement. This may be due to the naturally discussion-driven and participatory approach typical in these subjects, which tends to boost engagement. This finding is supported by S. Hidi, et al. (2006) [29] theory of situational interest. According to this theory, interactive and socially stimulating environments can increase student interest and engagement. Furthermore, students in hard sciences may face difficulties due to the complex technical terms, which may hinder their understanding of the taught content.

5. Conclusions

This study aimed to explore EFL students' engagement in EMI classes and the differences in their engagement in terms of academic disciplines. It found that students exhibited high levels of engagement across the main components (behavioural, cognitive, and emotional engagement) in EMI classes. Remarkably, EFL students' cognitive engagement was the most notable. Moreover, the study revealed that students in soft sciences were more likely to engage in EMI classes than those in hard sciences.

Several implications can be drawn. Firstly, curriculum design should take into consideration the diverse engagement needs of students in EMI classes. More discussion-oriented and interpretative activities can be adopted to boost the engagement and comprehension of soft science students, while hard science students might need additional support in expanding their technical English and participating in group problem-solving exercises to create a more dynamic educational setting. Learning resources should also be prioritised by instructors, as they

have been shown to increase students' motivation and cognitive engagement. Secondly, to address the specific challenges faced in EMI classes, teacher training workshops are crucial. These workshops should focus on equipping teachers with strategies to enhance cognitive engagement, create inclusive environments, and foster emotional involvement. Activities that encourage critical thinking, such as problem-solving and case studies, are essential for improving students' understanding. Furthermore, engaging lessons can be more effective when they incorporate real-world situational applications that are beneficial for students' future careers. Particularly, role-playing, discussions, and gamified exercises are also vital for increasing behavioural engagement for all students, regardless of their subject matter or language proficiency, enabling them to comprehend and benefit from the courses. Last but not least, students' engagement in EMI classes is a crucial factor in fostering their eagerness and interest. When students participate in EMI classes related to their majors, they express more positively that they can acquire knowledge and apply it to activities in class, as language tasks, jargon, and conversational English situations can address specific disciplinary requirements. This, particularly when combined with various digital tools and an online platform, provides flexible opportunities for students to practice improving their English and effectively solve problems in EMI classes.

Although the study highlights students' engagement in EMI classes within a higher education context, it has some limitations that could impact the generalisability of the findings. Firstly, the small sample size and the single study context may limit the applicability of the results. Secondly, this study employed a quantitative approach for data collection, using a self-reported questionnaire, which may lead to biased and inaccurate responses. Therefore, further studies should expand the sample size across various contexts and collect data from multiple sources for triangulation.

CRediT author statement

Thi Gia Linh Nguyen: Collecting data and Writing the article; Quoc Thao Tran: Providing research guidance and Editing the article.

COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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