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Chinese University Students' Perceptions of Transitioning to EMI Through Metaphor Analysis: Insights for Enhancing Language Support for Engineering Students

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This study explores the perceptions of Chinese engineering-major students towards their English learning experience after taking a mandatory English composition course in an EMI college. The investigation centers on first-year students' perceptions of transitioning to EMI, with a focus on how the composition course has assisted students' transition as a primary language support. Data were collected through a metaphor elicitation technique in which students expressed their perceptions of English learning, complemented by a thematic analysis of 86 reflection essays on the composition class. An analysis of the 334 metaphors identified students' enhanced confidence in English, the importance of the English-using environment, positive views of learning communities, and increased agency in the learning process. It also revealed that many students were stressed and unaware of learning strategies, therefore suggesting institutional-level language support. One implication is to promote the culture of the learning community. The findings can be particularly useful for programs that are implementing language support for non-English major students.

Keywords: English learning experiences, EMI, first-year students, engineering students, English composition

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1. INTRODUCTION

The number of courses offered in English in higher education has shown a marked increase worldwide given growing global interactions and interdependence. This phenomenon has been labelled differently according to regions, with North America favoring immersion and content-based instruction (CBI) over content and language integrated learning (CLIL), which is in common use in Europe (Macaro, Curle, Pun, An, & Dearden, 2018). When universities offer academic subjects in English instead of the first language of the majority of their students, however, it is generally called English-medium instruction (EMI) regardless of the region (p. 37). As Macaro et al. pointed out, EMI could internationalize institutions, adding to their prestige with access to recent academic conversations available in English. At the same time, offering courses in English could attract international students and thus contribute to the institution financially (p. 37). Largely thanks to these benefits, EMI is adopted by institutions of higher education in 54 countries worldwide (Dearden, 2015), with a majority of them in Europe and Asia. The rapid growth of EMI across countries, however, has called researchers' attention to the problems that arose in the implementation process (e.g., Coleman, 2006; Galloway & Ruegg, 2022; Graddol, 2006; Jenkins, 2014) from the perspectives of administrators, faculty, and students. Questions are whether students can learn English naturally while studying content in English, and the adequate level of English proficiency needed for students and instructors. Thus, the following concerns include whether language support is necessary for students and if so, what could be areas to address.

China has vigorously promoted EMI in recent decades. According to Rose, McKinley, Xu, and Zhou (2020), the attempts to internationalize its universities began in the late 1990s, with multiple projects from the government (p. 5). A pivotal change related to EMI was the implementation in 2001 of institutional assessment criteria mandating universities to offer 5-10% of their courses in English (Hu & McKay, 2012; Ministry of Education, 2001). This was followed by a series of governmental projects for bilingual education that aimed to enhance the quality of Chinese university education (Rose et al., 2020), leading to an increase in EMI classes. Despite the current boom in China, however, there has been a shortage of research on students' learning experiences in EMI classes for language and the effectiveness of institutional language support programs. In light of the popularity of dual degree programs with American and British universities (also called the "offshore branch campuses of English-speaking countries" in Fang, 2018, p. 33), research in these areas is particularly needed. Therefore, this study examines the transitioning experiences of first-year engineering-major students to an EMI college in China, and their perceptions of the mandatory composition course in an effort to improve institutional support for students' English learning. Beyond China, the implications of this research hold significant relevance,

considering the widespread adoption of English-medium courses in many universities including South Korea, reflecting their endeavors to enhance their global competitiveness.

2. LITERATURE REVIEW

EMI has expanded quickly outside of English-speaking countries, driven by factors such as the increasing importance of English as a means of global and academic communication, and the belief that EMI is linked to internationalization and global competitiveness of universities (Macaro et al., 2018). In particular, the availability of up-to-date information in English has been identified as a significant driver of EMI especially in STEM fields (p. 51). This has led governments to promote EMI at the national level, as seen in Europe and Asia. For example, in South Korea, Han and Kim (2020) documented various financial incentives that 14 universities near Seoul provided to promote teaching in English (pp. 467-468). Although the trend to EMI began to decline after 2015, coinciding with the exclusion of English-medium course numbers from university assessment criteria (Lee, 2022), the presence of more than 5,441 foreign faculty members in Korea (Ministry of Education, 2019), and the expectation for Korean faculty to offer certain credits in English as part of their contracts (Kim, 2019) represent the prevalent EMI practices in Korea. Moreover, many universities mandate that students complete a specific number of English courses for graduation (Kim, Kim, & Kweon, 2018). Besides from the administrative perspective, faculty and students at Asian universities have also recognized the need to shift to EMI to keep up with the growing trend of globalization in academic fields and the advantages of being fluent in English for career prospects (e.g., Chapple, 2015; Macaro, Akincioglu, & Han, 2020). Positive attitudes towards EMI among Chinese instructors and students, who view it as a way to develop English proficiency and provide better career opportunities, seem to be related to the growth of EMI classes in China (Hu & Lei, 2014; Hu, Li, & Lei, 2014).

The transition to EMI in specialized courses has caused tension for both instructors and students who often find themselves unprepared for classes conducted in English. The effectiveness of learning has also been called into question, particularly in situations where students' primary language of education before college differs from the medium of instruction (MOI) in college (e.g., Kim, Kweon, & Kim, 2017). The discrepancy could negatively influence students' understanding of disciplinary knowledge (Galloway & Ruegg, 2022; Jiang, Zhang, & May, 2016) and their interactions with instructors (An, Macaro, & Childs, 2021). Compared to CLIL, the problem of English as the MOI is more pronounced in EMI because instructors tend to focus primarily on content learning, as evidenced by Aguilar's (2015) report on content professors' tendency to prioritize content learning over English language development.

The research found that both instructors and students perceive that the effectiveness of learning in EMI is closely related to English proficiency, while relevant language support seems scarce in many cases. Findings suggest that the primary factor that negatively affects the effectiveness of English-medium courses, which are characterized by a lack of clear language requirements, is the learners' limited proficiency (Macaro et al., 2018; Rose et al., 2020). Students often report experiencing frustration due to their limited proficiency, such as insufficient vocabulary knowledge (e.g., in Turkey, Macaro, Akincioglu, & Dearden, 2016) and poor listening skills (in UAE, Rogiers, 2012). After conducting classroom observations and interviews with college students in China, Galloway and Ruegg (2022) and Zhang (2018) identified instructors' limited proficiency in English, as another primary obstacle to the successful implementation of EMI, for example classroom interactions (Curle, Jablonkai, Mittelmeier, Sahan, & Veitch, 2020).

Learners' concerns about their deficient English skills are shared by instructors in various contexts. For example, in Korea, Choi (2013) and Kim and Shin (2014) found that EMI instructors perceive a significant proportion of students in their classes as having limited ability to fully understand lectures. Likewise, Shao and Rose (2022) reported general concerns of Chinese instructors regarding their students' English proficiency. Interestingly, the same tendency was reported in Sweden, where EMI has been implemented with relatively proficient English speakers for a long time (Airey, 2011). This may indicate the complexity of the situation, more than language proficiency, as shown in a recent study on native instructors' less-engaging teaching in Chinese EMI classes (An et al., 2021). These practical challenges have led institutions to take measures to address them, such as including English requirements in the admission criteria, offering English-intensive programs for first-year or incoming students, and providing incentives and pedagogical support for instructors (Bradford, 2013; Hu & Lei, 2014; McKinley, Rose, & Zhou, 2021; Qiu & Fang, 2019). Despite such concerns and efforts, however, optimal language requirements have received little attention (Rose et al., 2020). The problem of the lack of proper English requirements for EMI and adequate institutional support, which Byun et al. (2011) highlighted over a decade ago, still seems to remain unresolved.

In China, scarce research on institutional support focuses on enhancing instructors' language proficiency and instructional effectiveness, through overseas training and pedagogy workshops (Rose et al., 2020). The authors pointed out that these supports did not involve training experiences in any EMI classes, as supported by more studies (Macaro et al., 2020; Macaro & Han, 2019). Without proper training, a common instructional strategy that many instructors adopt is code-switching to Chinese after delivering disciplinary knowledge in English, which has rarely been subjected to empirical evaluation beyond brief student reports. Inefficient teaching creates an extra workload for students who are already under the pressure due to limited English proficiency, or more importantly, may influence

the quality of content courses (Galloway & Ruegg, 2022; Jiang et al., 2016).

Research on language support for learners has not received sufficient attention, and studies conducted in Asian contexts are also scarce. The little research suggests that the role of individual institutions is vital in helping students transition to the new learning environment of using English as MOI. The institutional role seems particularly significant when students' former educational experience involved the use of their first language. For instance, a recent empirical study reports that a transitional intensive program for low-proficiency incoming students in a science and engineering university was viewed positively (Kim, Park, & Baldwin, 2021). Specifically, the study found that the program was effective in preparing students for a smooth transition to EMI, as perceived by all the parties involved, including the students, language teachers, and content area instructors. The study concludes by stressing the need for further studies on language support programs for incoming students. It should be also noted, however, such a support program requires huge investments to be successful (also Wilkinson & Walsh, 2015) particularly in majors not designed for language (Shao & Rose, 2022). The need adds to urgency since some EMI instructors are either unaware of their learners' levels of proficiency (Guarda & Helm, 2016) or of the view that support for language development is not part of their responsibilities (e.g., Aguilar, 2015; Dearden, 2015).

Therefore, it would be worthwhile to investigate the institutional measures of language support through the voices of first-year students adjusting to their university life. Informed by this need, this study attempts to answer the following questions based on elicited metaphors and reflection papers collected from engineering-major students in the Chinese EMI context:

1) How do first-year Chinese engineering students' perceptions of English learning change after a semester in an EMI college?
2) How do first-year Chinese engineering students view learning English through the mandated composition course?

3. METHODOLOGY

3.1. Participants and Setting

A total of 176 first-year students enrolled in a joint institute in Western China, between a Chinese and an American university participated in this research. In the program, it is common for students to pursue 2+2 or 3+1 programs, transfer to another American university, or apply for graduate programs outside China. This trend indicates the shared demand for English proficiency among students, as a significant portion choose the institute with the

intention of studying abroad. All students had graduated from local high schools and entered the international college of engineering through the national university entrance exam, which meant that their former education had all been in Chinese. In contrast, the institute used English as MOI in all of its classes. It was not unusual, though, to see interactions in Chinese when students talked to Chinese instructors and staff. Thus, English was officially the language of teaching materials, instruction, and assessment, while Chinese was the language of communication outside the class. The institute had concerns about students' persistent use of Chinese, which led to multiple verbal and written reminders to the staff and signage on walls in the hallway.

The language support at the institute, which was at the discretion of the program director, changed over the years determined by available resources, budget, and feedback from the partner university in the US regarding the performance of transferred students. For the cohort of 2021 (starting their programs from fall 2021), the support measures included a sequence of two mandatory English composition courses in the first year (one course per semester, three credits each) and a one-credit speaking and listening workshop in the second semester (excluding the extra TOEFL preparatory course that the Office of Study Abroad provided). Furthermore, students belonging to the bottom 15% out of about 200 students (35-40 students) on the placement test from Cambridge took an extra prep course focusing on listening, reading, and writing skills before they started the composition course. Students' performance on the placement test was unavailable to the researcher.

For the first composition course (Composition 1), students wrote a narrative, analytical, and argumentative essay, with 1,000, 1,250, and 1,500 words, respectively. There also was a requirement of visiting the Writing Center on campus a minimum of ten times for a 30-minute consultation each. Consultations could take place at any stage of writing, from brainstorming and organizing ideas, to reviewing the thesis and structure. These consultations provided additional feedback from readers other than their instructors, and ideally, opportunities to practice communicating in English. Students could choose the consultant from four professors with PhDs (one Chinese), two full-time staff (one Chinese), and ten upper-level students (all Chinese).

The composition classes focused on analytic thinking skills and such aspects of English writing (e.g., thesis, structure, coherence, transition) rather than sentence-level issues or language skills. Building on the analytic thinking and writing skills from Composition 1, Composition 2 was to focus on writing for research, including skills for searching and reading academic sources, paraphrasing, synthesizing multiple sources, and acknowledging them in an academic style.

Although students with fundamental language-related difficulties were advised to have a tailored consultation at the Writing Center, no guidelines were available to serve such students. It can thus be stated that there was no clear institutional support for students'

English proficiency or to ease their transition into EMI. The two writing courses were designed to develop students' academic English skills rather than their general language proficiency.

3.2. Data Collection and Analysis

This study employed Elicited Metaphor Analysis (EMA) due to the unique features of metaphors that enable understanding the nature of human language and its cognitive systems. As writers can use familiar words or concepts to describe something abstract, analyzing metaphors provides an alternative way to understand participants' genuine perspectives (Lakoff, 1993, p. 202), in this case, regarding English learning before and after entering an EMI college. Furthermore, literature represents metaphor as a linguistic device commonly employed in everyday linguistic practices that reflect how and what people act in daily lives. As Lakoff and Johnson (1980) state, "metaphors are fundamentally conceptual in nature; metaphorical language is secondary" (p. 272). Therefore, EMA allows examination of the conceptual system that becomes automatic in people's daily actions. For instance, the metaphor "argument is war" demonstrates how language for argument is influenced by those for war, such as "attack, defense, counterattack" in English-speaking contexts (p. 455). Although argument and war are different, the metaphoric structure in language represents how the concept and action of argument are metaphorically structured and represented in ways people think, speak, and act.

For this study, two sets of data were collected in February 2022, during the beginning of students' second semester: 343 metaphors on language learning collected at the beginning of Composition 2 (nine sections) and 86 reflection papers from the end of five sections of Composition 1. The primary data were the metaphors that 176 students wrote about their English learning experiences before and after entering an EMI college. After an introductory orientation on metaphors using popular examples like "Life is a box of chocolates" from *Forrest Gump*, the students completed two sentence frames in English, adapted from Fang (2015): "Learning English before I entered this college was (like) _____ because _____." and "Learning English at this college is (like) _____ because _____." A total of 334 metaphors, excluding the 9 that were incomprehensible (i.e., 168 for before and 166 after college entrance), were subjected to analysis. To triangulate the metaphor analysis, 86 reflection papers detailing the students' experiences of learning English in Composition 1 were examined.

According to Jin et al. (2014), there are three elements to examine in metaphors: a target domain (argument), a source domain (war), and entailment (writers' explanation for the choice of their source domains). In the given prompts for this study, the phrases following "because" are entailments. To measure changes in the students' perceptions of learning

English, the analysis focused on categorizing and comparing source domains of the two sets of metaphors. For example, metaphors describing experiences in EMI as learning of one kind or another, such as "learning together," "learning something new," "learning in a natural or foreign way," or "study abroad," were grouped into the category of *learning*. When the implied meaning varied, such as boating, sailing, or swimming, their entailments were reviewed to determine the category. Therefore, descriptions of boating or sailing as a hardworking process in the metaphors for English learning in high school became part of *work*, while descriptions of them as guided activities created a new category, *water activities* for EMI, as shown below:

> Excerpt 1.
> English learning was like sailing on the oceans, and only those who have the willingness can they finally reach the shore. Because English learning is always filled with difficulties and oceans also have many difficulties and dangerous things, for those who are learning English, they have to overcome difficulties so that they could finally success, just like sailors have to overcome the storm and they could reach the bank. [1]
> Learning English at [this college] is like having a captain on the boat sailing on the oceans, because [the college] provid[e] us various English learning resources and also English learning mentors, just like having a[n] experienced captain who can guide us and encourage us. (Shao) [2]

To examine participants' perceptions of their EMI experiences, the themes and entailments from the second set of metaphors were reviewed. This stage focused on the ones that revealed participants' perspectives on EMI features, such as enforcing the use of English, whether they be positive or negative, and also what they have learned in the composition course. As entailments were sometimes not indicative of particular perspectives, participants' reflection essays were analyzed to gain a clear idea of what they did not elaborate in their metaphors, for example, what they meant by "guided" and "supported," and what kinds of support they experienced.

4. FINDINGS

4.1. Perceptions of Learning English in High School

[1] Grammatical mistakes are not corrected to maintain the authenticity of the students' writing.
[2] All names are pseudonyms.

This section provides an overview of students' perceptions of their general English learning experience before and after college[3]. In addition to the four categories of source domains about English learning as journey, work, leisure/pleasant activities, and necessity (reported in Table 1 with frequency), the earlier analysis identified positive (86 or 51%), negative (50 or 30%), and ambiguous (32 or 19%) attitudes of students. Positive perspectives included describing English learning as an enjoyable experience of acquiring something new and highlighting a sense of accomplishment. Many students acknowledged the benefits of learning English, while referring to it as a challenging and hard-working process. Some noted that they were building a foundation for further study and expected long-term benefits for personal and professional growth, which motivated them to continue. In contrast, students with negative attitudes focused on the immediate demands and did not see the value in the time and energy required. They cited irrelevant and tedious teaching methods for exams and a lack of opportunities to use English for communication as reasons. The ambiguous attitude category but informed students' experiences of English learning in high school as memorizing vocabulary and grammar, rather than comprehensive development of the four language skills (listening, speaking, reading, and writing).

4.2. Comparison of Perceptions in High School and EMI

The differences in perceptions towards learning between high school and college center on teaching and learning methods, language-use environment, and expectations for self-directed learning. In addition to the metaphors comparing English learning to work, journey, leisure activities, and necessary behavior for living, Table 1 identifies three new categories (with an asterisk) that emerged from metaphors about experiences in EMI: learning, water activities, and challenges. The learning category includes metaphors related to acquiring new knowledge, learning with others, and receiving guidance. Compared to the pre-college set, the EMI metaphors used more aquatic activities (15 versus 3 times), often referring to the ocean or sea as an endless and overwhelming space. Many metaphors acknowledged the assistance and support available in college. The challenges category includes four source domains that described English learning or being in EMI as emotionally challenging and unpleasant.

Table 1 also highlights two primary themes: the facilitation of an English-speaking environment (italicized) compared to drills and memorization, and the feeling of being directed and supported in college (underlined), representing a sense of community and belonging naturally created among students. Professors' guidance and being with classmates were frequently mentioned.

[3] Analysis of students' metaphors about English learning before college was reported in Ahn (2022).

TABLE 1

Metaphors of Learning English in High School and EMI College

Categories	High School (168)	EMI College (151)
Journey	1. Walking along the endless road because we never know when is the end of it. 2. An unknown exploration because you never know when difficulties will come. 3. An exciting journey because I learn new words and try to use new grammars everyday. (30 times)	4. A tour with some kind tour guide because you can get help when you feel puzzled or confused. At the same time, you can get a full feeling of satisfaction during the process of learning English. 5. A splendid travel because there are many teachers who are like patient guides leading to find the way. (20 times)
Work	6. Finish work in a factory because we had many tasks include reading a passage then answer following question, fill in the blank, and write composition about the same topic. Sometimes I feel I was only a worker in a busy factory and my boss sent me too much work to do without take care of my thoughts. (69 times)	7. Building a skyscraper with the professional guidance because there is *a great English environment for us to improve faster*. 8. A running competition, because everything gose so quickly that you have to catch up with, or you will fail the game and fall behind. (28 times)
Leisure/ pleasant activities	9. Trying to get along with a strange person. When you have the same interest with him/her, you can getting along with him/her quickly. Learning English needs your patience and interests. 10. The process of picking seashells by the sea, because they are both the process of looking for something wonderful. (35 times)	11. Panning for gold with a tressure map, because I have a more clear target for that. 12. Opening an unknow package because you never know what the teachers have prepared for you. (28 times)
Necessity	13. Eating boiled vegetables without salt because it can not arouse my interest but benefits me a lot. 14. Having Chinese drug, because the taste is not good but you have no choice. (20 times)	15. Eating cookies with complicated manner. 16. Drinking lemonade, since it tastes a little sour but a little sweet at the same time. 17. Drinking water, because you need to do it ceaselessly. (13 times)
Learning*	18. Being led to get out of a maze because *we all are in the class with only English* for the first time while professors are endeavor to lead us to learn. 19. Living in America because *we all speak English here*. (33 times)	
Challenges*	20. A challenge because I don't [know] what will happen in the future. 21. A risk because I should adopt a completely new learning environment. 22. Being attacked by enemy unexpectedly because it gives me to lots of hard tasks while I'm not used to English writing. 23. Staying on an island alone, because you cannot leave it easily and you need to face many unknown difficulties personally. (4 times)	
Water activities*	24. Boating on a rushing river towards a destination because I need to work hard to reach my goal. 25. A ship at sea guided by a lighthouse, never loosing its direction, because with the outstanding professors assisting beside, we will hardly loose our hope	

towards the goals and are bound to create something different.
26. Swimming in the swimming pool, because we can learn it delighted, qulckly and safe.
27. Boating because you never fall, water moves you ahead. (15 times)

4.2.1. EMI college as a facilitating and supportive community

The college served as a facilitating and supportive community that enforced the use of English. The italicized phrases in Table 1 demonstrate that many students perceived this requirement positively, as it facilitated natural and faster English learning. The dataset revealed 56 instances supporting this claim, such as "the institute created an English learning and speaking environment," "I should learn English every day just like I should drink water every day," and "because every day, you need to speak English and learn English, therefore your English level will improve." These examples highlight the importance of using the language daily to improve their skills and contrast with their experiences in high school, where they only prepared for exams without opportunities to use English for communicative purposes. It discloses students' perceptions of learning faster in EMI. Descriptions of learning in high school as working in an assembly line or factory supported this difference.

In addition, students felt a sense of guidance and support in the EMI community, where everyone worked towards the same goal. Writing instructors were mentioned most frequently, described as tour guides who were kind, patient, passionate, and professional. This perspective is demonstrated in some pairs of metaphors that used the same source domains, as shown in the following sets of examples:

Excerpt 2.
2.1. (High school) … was like climbing a mountain, because you need to [be] persistent with it. If you give up, you will never see the beautiful scenery from the top of the mountain.
(EMI college) … is like climbing mountain with a stick, because [the institute] created an English environment so this will make learning English easier. (Huang)
2.2. (High school) … was like exploring a cave, because there are always abundant things waiting for you ahead.
(EMI college) … is like exploring a cave with friends, because there is always someone by your side supporting you and giving you instruct[ion]. (Lu)

Both sets used the same source domains of difficult activities, "climbing a mountain" and "exploring a cave." The difference was that in college, they had assistance to go through the

process, while they felt that they had to confront challenges by themselves in high school. English learning is equally challenging, yet "support" and "instruction" made it easier in college. It could also be deduced from such phrases as "panning for gold with a treasure map," "water moves you ahead," and "guides leading to find the way" in Table 1. These entailments emphasize the sense of direction, in addition to the academic and emotional support the students perceived.

Another recurring concept, the purpose-driven attitude was evident in the phrases indicating direction towards a destination and associating English with current and future studies. In addition to phrases such as "a more clear target" and "never losing its direction" (from Table 1), "the end," "the result," or "the destination" were repeatedly mentioned, implying the relation of English to their goals. Often, students did not elaborate on what their goals were in their metaphors, but the nature of the institute and the analysis of reflection essays implied one of them as studying abroad. Thus the short-term goals included achieving good grades in their courses for transfer or graduate program applications, and passing standardized tests like TOEFL or IELTS. Although the goals were still related to exams and grades, it appears that many students perceived them differently from the ones in high school, where they studied for the university entrance exam. Students who primarily considered English as a means to study abroad also perceived achieving a certain level of proficiency significant and being in EMI beneficial. After one semester in EMI, they had a better understanding of the proficiency needed for classes and interaction with professors in English-speaking countries. One metaphor that reflects this instrumental perspective says English learning "is like preparing a bag, because I know it will be my reliable tool." This perspective is also supported by the set of metaphors:

> Excerpt 3.
> (high school) … like the key to the American universities because without English, we cannot learn in the American universities.
> (EMI college) … like making keys in a famous shop because in here I can improve my English skills better. (Zhang)

4.2.2. Learning from interactions

Regarding the types of support, the analysis found that students valued personal experiences with professors outside the classroom, as well as opportunities to speak to senior students (mentioned 9 and 3 times respectively) via Writing Center consultations. During these individual interactions, students learned about writing (e.g., "the main structure and the skills on how to make a good essay") and also "how to communicate with professors." One student noted a change in his perception of professors, whom he initially perceived as

"always serious and far from me." Through consultations, he realized that "professors were all very nice and patient." Such recognition could allow some students to develop a rapport with professors, who might be seen as authoritative figures otherwise. Three students also appreciated interactions with senior students, as they could discuss "some useful experience about studying in college and studying abroad."

The metaphor of "swimming in the sea" versus "sailing on the sea by ship" represents the recognition of a protected environment for growth in the EMI college. While the student felt like he was swimming alone before, he found himself on a ship in college. What was once a challenge when he was by himself became manageable with the help of professors, classmates, and the Writing Center (mentioned 9, 4 & 48 times). The metaphor of "Swimming in the swimming pool" compared to "swimming in the sea" is another example that shows a perception of EMI as a safe learning space. It seemed psychologically important for students when they were placed in a new context, feeling that they were not adequately prepared through high school education (mentioned 18 times). Other examples include "walking with a wise man," "boating in the right direction," and "exploring with a compass." It shows that many students appreciated personal interaction with knowledgeable community members, as an excerpt says:

> Excerpt 4.
> … it is only me and the TA or professor in the writing center meetings. In this way, I can get information that I need to get according to my own essays, and I can have more chances to ask what I concerned. (Yu)

Knowing that they could always discuss concerns through consultations at any point may have contributed to the culture of the learning community. Secondly, being "together" with friends or classmates was mentioned 25 times out of 151 metaphors for EMI. Emotional support from peers seemed to help alleviate their perceived lack of English proficiency and the pressure to be perfect. Also importantly, there was a constructive competition that made many students feel motivated. One student who used "a trip with friends" as his/her source domain said, "[in this college] we have many classmates and friends to study together, which makes the trip more interesting and encourages us to go further." Another example shows a repeated reference to friends who would "help you when you fall down." More detailed information on how students helped each other was not elaborated beyond the following excerpt: "Teammates' ideas are always helpful since we are in the same age and live together so that we can understand each other well." These examples demonstrate the importance of companionship and available resources in dealing with the challenge of studying in English.

It should be noted, however, that being in EMI also made some feel overwhelmed. Two of the metaphors in *Challenges* revealed the students' negative experiences regarding the

regulation enforcing English use. The latter two represented stronger moods in phrases such as “being attacked” or “being completely alone,” perhaps watching others doing well. While one attributed the feeling to the difficulties of English writing specifically, the other implied broader aspects, probably happening at the student’s personal level. Examples from other categories, such as “eating cookies with complicated manner” and “a running competition,” disclosed students’ unpleasant perceptions, even though they did not use words like struggles or challenges. For them, a very simple act like eating cookies became a complicated task in this environment due to the new rule of doing everything in English. The analysis of entailments found that at least 26 students experienced stress, as reflected in examples such as feeling like they were in “a constant race.” These students had a fear of falling behind at any moment, despite their efforts to catch up. One student who used “competition” elaborated on the difficulties of understanding professors and expressed concern about her ability to succeed in studying abroad later on. English language proficiency had a significant impact on students’ everyday performance, and some students who did not experience this problem before could struggle in EMI.

4.3. Perceptions of the Mandated English Composition Course

The English composition course was mostly frustrating initially, yet enhanced students’ confidence and motivation in learning English, as well as taught the key features of formal English writing. Some students appreciated learning higher-order thinking skills more than learning English as a means to study abroad. Few students further showed increased awareness of autonomy and self-directed learning attitudes. Finally, instances of perceived mistakes and plans to improve revealed the need to provide support on English learning strategies at the institutional level.

4.3.1. Increased confidence and autonomy beyond English writing

Many students (32 times in reflection) wrote that their level of confidence in both writing and overall English learning rose after writing long essays, a length they had never imagined they could write. One student cited specific skills learned from the essay assignments, such as describing mental voices and facial expressions in narrative, writing clearly and specifically in analysis, and writing persuasively and incorporating quotations in argumentative essays. Regardless of their grades, the completion of the three essays led students to feel a sense of achievement. They took pride in addressing the challenges of choosing topics appropriate to long essays, building a solid structure with a clear thesis, elaborating with details, supporting with evidence, and, most importantly, writing in another language. The excerpt below shows how proud a student was when s/he finished the

narrative essay.

> Excerpt 5.
> To be honest, it is really challenging to find a proper topic and start. I can still remember how painful I was when I had to write 1,000 words for my first narrative essay. However, I felt proud the moment I finished it. I really appreciate these experiences. These writing experiences not only help me improve my writing skills but also help me strengthen my mind. (Tao)

Perhaps it needed to briefly note writing aspects addressed in the dataset. In reflection essays, for example, students mentioned the importance of the target audience, structure, coherence, clarity, evidence, transitions, and appropriate citations. The two most frequently mentioned were sentence-level improvements and structural accuracy (mentioned more than 10 times each). It reflects the students' constant attention to sentence-level mistakes, given their awareness of limited proficiency in the basic skills required to express their ideas.

The sense of achievement seemed to have a relation with the strong agency of students, who enjoyed the autonomy they had for writing and became self-directed learners. Unlike teacher-controlled learning in high school, some students particularly liked being at the center of their own learning in college. Addressed tasks that students had control are from "finding a proper topic" and "thinking of the topic sentences and the main ideas" to developing "your own ability to solve problems" or having "full freedom" to finish their assignments, though not all of them enjoyed the complete autonomy. The list indicates students' recognition that they could not rely solely on what teachers prepared, as they had in high school. In other words, everything had to be done by the writer, as the following excerpt says: "… like being a boss of my own company, here I can choose the topic I am interested in and search for information through the Internet and Writing Center. I can also discuss my ideas with classmates and professors to revise my essay." Being able to write about what he liked was important for this student, as it made the process of reading sources and talking about his ideas enjoyable. In some ways, students expressing agency shared similarities with those who indicated their willingness to further invest in English learning. For these students, English learning meant more than a requirement to go to prestigious universities; it enabled them to further their learning in whatever they were interested.

4.3.2. Limited awareness of strategies

The students' reflection essays shed light on what they had learned, including their weaknesses and plans for improvement. Ironically, the most frequently mentioned needs and strategies were still related to memorizing vocabulary and studying grammar, which were

blamed in metaphors for learning in high school. However, the goal has shifted based on different needs as one student commented, “I need to expand my vocabulary and try to express the same meaning in different kinds of expressions, which is difficult for me.” Rather than memorization for exams, students emphasized using words correctly in context and avoiding repetitive expressions that make their writing “boring and monotonous.” The comment indicates that the perceived need for more vocabulary was driven by a desire to express themselves effectively. Furthermore, what students identified as areas for improvement discloses their awareness of English writing, for example logic, thesis, organization, structure, and effective transitions, which require constant practice. However, it was incompatible with students’ perceived strategies to achieve them, as they mentioned the identical methods from high school, “reading some English books,” “reading more classical books,” “reciting words,” and “watching more English videos to create more English environments.” These references show a lack of awareness of learning strategies and resources that could be used beyond composition classes.

5. DISCUSSION

The majority of students in this study perceived being in EMI in a positive way, primarily because it facilitated the use of English for practical purposes, unlike teacher-centered drills and memorization for exams back in high school. This finding highlights the role that authenticity plays in students’ motivation and engagement in similar approaches, such as CLIL (Uemura, 2017). In this context, authenticity refers to the need to use English as the primary medium for academic purposes (Kim et al., 2021). In all classes, students read texts in English, listen and talk to professors in English, and write in English. Therefore, the pressing need to use English enhanced the authenticity of the context. Another aspect of authenticity for students who had a determined plan to study abroad was gaining a sense of academic life in English-speaking contexts (Kim et al., 2021). This experience provided an authentic reference for determining their long-term academic plan. One reason for the positive perception of EMI could be the common desire for English improvement, not just as a means to understand the content but also as a necessity for the job market (as reported by Japanese students in Chapple, 2015, also in China by Hu & Lei, 2014), or even English learning as a primary goal in EMI programs (Galloway, Kriukow, & Numajiri, 2017).

One meaningful feature of engineering-major students’ perceptions in EMI college was that many of them related English to their learning, enjoyed the learning process, and expected positive rewards for their careers. This observation represents non-English major students’ intrinsic motivation and personal enrichment in English learning, which was reported from a group of graduate-level, English-major students (Littlewood, 2021). The

potential of English learning for their everyday performance and long-term academic growth was evident to many students, keeping them motivated despite efforts it required. For various purposes, not just limited to instrumental reasons, students reported willingness to further invest in their English learning. However, the awareness seemed not to be assisted by institutional support, as indicated by students' limited understanding of learning strategies, which may lead to reverting to old and boring methods later. From an institutional perspective, it is important to maintain initial positive attitudes from the early years, instead of letting students go through the overwhelming process by themselves and being discouraged. This might also be applicable to the case reported in this study, where students were required to complete two composition courses during their program. This suggests an area where EMI programs could further assist in with resources for self-guided learning after the initial language or English writing course requirements.

In this study, a significant number of students became more confident and became aware of areas for improvement after the composition class, even with no language-specific support. This development is meaningful, yet there were indicators that support the need for language assistance. As research has consistently shown (e.g., Aguilar & Munoz, 2014; Byun et al., 2011; Kim et al., 2021; in China, Rose et al., 2020), signs of anxiety and stress arising from using English affect students' academic performance in content courses or social experiences (Lei & Hu, 2014; Shao & Rose, 2022). Coupled with the stress of adjusting to college life, language issues could create significant tension for students with low proficiency adversely affecting their learning. Furthermore, students' limited understanding of learning strategies suggests that students of various levels could benefit from systematic language support (e.g., Navés, 2011). It does not mean that more language courses are necessary, which is not ideal in many technical and professional degree programs (Shao & Rose, 2022). Few studies suggested offering the preparatory course(s) for students with limited English proficiency (Kim et al., 2021; Macaro, 2018), yet this study suggests utilizing sources like Writing Center and promoting the culture of a learning community with more experienced members.

Although the composition class and consultations raised students' awareness of higher-level thinking skills, many students still need to practice English writing and using English outside classrooms. Thus, two learning strategies students mentioned, memorizing vocabulary and grammar, inform one aspect that institutional support could address: teaching relevant vocabulary and learning strategies. The emphasis on vocabulary corresponds to what Kim et al. (2021) reported, both students' and content professors' positive perception of teaching discipline-specific vocabulary in advance, given the primary role of vocabulary that influences listening and, consequently, course understanding. This study proved that language support was essential for students whose English proficiency differs from their academic capabilities. In a similar vein, discussing learning approaches with senior students and faculty could help first-year students find effective ways and

understand academic expectations from the institute.

Facilitating naturally-occurring psychological support within the community is another implication. Students found being with their Chinese classmates and having consultations at the Writing Center beneficial. It reassures students that a lack of proficiency was not something to be ashamed of, and they could consult experienced members for any concerns they have. Such awareness is meaningful in China, or in some Asian contexts, where saving face is highly valued (Su, 2008). Using the Writing Center might deserve further discussion since it could play more diverse roles than just providing feedback on students' writing. At the Writing Center, students could practice speaking, learn from senior students and professors, and understand academic expectations and college life. The social aspect that stood out from students' reflections suggests the value of creating a sense of learning community that could address English-learning related challenges at the institutional level. The application should consider practical concerns such as encouraging students to visit, hiring qualified consultants and training them, and using L1 in consultations.

The findings support that the writing courses are unlikely to be the primary language support, given their emphasis on higher-level skills such as analytic thinking, finding reliable evidence, synthesizing, and more. Those were necessary skills in college, particularly for students who want to study abroad; however, the lop-sided focus does not leave room to handle other language skills in classes. Without language training, however, it is unrealistic to expect students develop all skills equally and naturally, as the literature has found. There was a development of receptive skills, such as listening and vocabulary acquisition (Aguilar & Rodriguez, 2012; Dalton-Puffer, 2007) and recently of writing after writing classes (Jexenflicker & Dalton-Puffer, 2010). Likewise, engineering students with CLIL in Spain did not show significant improvement except in listening, compared to students who completed a 60-hour intensive language program (Aguilar & Munoz, 2014). Expressive skills, particularly speaking require purposeful guidance.

Last but not least, the institute examined in this study lacked clear language goals, such as a rationale for expectations of English use and required language proficiency for both faculty and students (Galloway et al., 2017; Rose et al., 2020), and as a result, there were no pedagogical suggestions for classroom teaching besides using English. Like many other EMI programs, the institute provided a rather ad hoc system (Rose et al., 2020, p. 25), which has led to constant issues over the years after sending students to the US. Incoming students were expected to meet the language requirement by themselves, which is related to the unrealistic expectations of student outcomes based on the mythical assumption about language benefits of being in an immersive environment (p. 7). These problems are due to the implementation of top-down policies (for example, in Asia Pacific, Walkinshaw, Fenton-Smith, & Humphreys, 2017), requiring careful discussion among policymakers, and collaboration between content and language instructors (Kim et al, 2021; Shao & Rose, 2022). The finding

in this study, students' highly motivated attitudes toward English learning without language support have to be interpreted carefully given the uniqueness of the student population with a specific career plan.

6. CONCLUSION

The present study examined the English learning experience of first-year engineering students in an EMI college in China through elicited metaphors and reflection essays. Overall, first-year students perceived the English-using environment positively, regardless of the demands it required. The great sense of achievement that many students experienced in the composition class not only informed students about English writing, but also motivated them. Being in EMI was challenging, yet being with other students who came from the same background, and probably with the same goal for study abroad, comforted students psychologically, in addition to the extra guidance from faculty and Writing Center consultants. It represented a sense of belonging and the learning community that EMI programs could facilitate in different forms. Also, students' limited knowledge of methods for self-guided learning and reported struggles indicated the need for offering directive language assistance for the students who were in the transitioning phase into EMI.

Even though the present study provided insights into the engineering students' English learning experience, there are a few methodological suggestions for future research. First, data could be collected in various forms and settings that students feel comfortable with. Since the metaphors and reflection essays for this study were collected in classes, it was possible that students might find it difficult to be honest as they knew their instructors would read what they wrote. Interviews through a third party (not students' instructors) or class observations could help understand students' genuine experiences better. Secondly, additional matching data, such as students' grades and interviews with instructors, could better illustrate the setting. Supported by information about students' levels and performance in other classes, future research could address specific areas that would facilitate students' learning in EMI. Lastly, it should be noted that students' awareness of certain aspects (particularly items students mentioned in reflection) does not indicate their ability to achieve them in writing. Thus, collecting data that could triangulate students' awareness through written products could be meaningful in examining what students learned from multiple sources.

Applicable level: Tertiary

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