



## Contrasting Views of English-Medium Instruction by Korean Professors and Students: Towards a Negotiated Language Policy

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This study examines the comparative attitudes of students and professors toward English-medium instruction (EMI) policies at Korean universities. Specifically, it investigates these stakeholders' experiences with EMI implemented in science and engineering universities, the main facilitators of EMI and the internationalization of Korean higher education. Within a mixed method framework, questionnaire surveys were administered to 523 students and 37 professors from three leading science and engineering universities, and supplementary interviews were conducted with nine professors. The results of the analysis show that both professors and students believe that EMI should be continued. With respect to their motivations to engage in teaching and learning subjects in English as a foreign language (EFL), the majority of both groups were involved in EMI due to their university's policy, with lower satisfaction in EMI classes than in Korean-medium classes. More students than professors were unconvinced of the effects of EMI on their English ability. Notably, despite the inadequacy of their English ability, many students were not enthusiastic about enhancing their levels of English language proficiency. These contradictory views are discussed to propose ways to explicitly promote English language instruction as well as EMI-related professional development for subject professors at EFL higher education institutions.

**Keywords:** comparative attitudes, English-medium instruction (EMI), internationalization of higher education, professional development, English as a foreign language (EFL)

### Introduction

English-medium instruction (EMI) in higher education has been a growing phenomenon in Asian higher education over the last two decades (Walkinshaw et al., 2017). This growing trend in higher education (HE) is not inseparable from the spread of English in HE worldwide; According to Dearden (2014), out of the 55 countries surveyed, more than 90 per cent provided instruction in English in HE. In implementing EMI, Asian institutions have coped with context-specific challenges mostly due to the limited pragmatic roles of English in those societies - English as a foreign language (EFL). Those

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challenges have been described two-fold: students' insufficient English ability and professors' inadequate teaching capability for EMI (Evans & Morrison, 2011; Vu & Burns, 2014). Evans and Morrison (2011), for example, investigated EMI in a Hong Kong HE institution. Many undergraduate students felt that they lacked the necessary English proficiency for EMI, and the institution's existing English language courses were not adequate in preparing them for EMI classes (Evans & Morrison, 2011). EMI instructors at another Hong Kong institution also saw a need for extensive teacher training to develop their language abilities and pedagogy (Corrigan, 2015).

For solutions to these problems in relation to EMI, researchers have proposed various types of language and pedagogical support. A study of a Vietnamese university suggested scholarly visits of language instructors to English-speaking countries, institutional investment in English materials and technology, and adequate English entry requirements for students (Vu & Burns, 2014). Other studies focused on encompassing a local language in a hybrid type of EMI (Chang et al., 2014; Fujimoto-Adamson & Adamson, 2018). Fujimoto-Adamson and Adamson (2018), in their study of EMI in a Japanese HE institution, highlight that first language (L1) use provides scaffolding for students of different English levels. In this study, the Japanese undergraduate students recognized the importance of translanguaging between English and students' first language (L1) in the EMI classroom, rather than a top-down monolingual approach (Fujimoto-Adamson & Adamson, 2018). Meanwhile, EMI has been viewed to better fit such disciplines as science and economic studies than in humanities and social sciences, which tend to be more closely related to cultural meanings carried by L1 (Chang et al., 2014). In a study of EMI in a Korean HE context, J. Kim and colleagues (2018) indicate that disciplinary differences should be considered for the sake of systematicity of an EMI implementation. Added to those challenges, Asian HE is expected to handle increased diversity and complexity in student population. For example, as the majority of the graduate students in Singaporean universities are non-Singaporean students with various English abilities and backgrounds, EMI classes need to be offered with appropriate measures to deal with such diversity (Bolton et al., 2017).

Given the stated difficulties and support needed to maximize the effectiveness of EMI, an increasing number of Asian institutions have begun to explicitly instruct the English language while teaching subjects in place of EMI, namely content and language integrated learning (CLIL). While EMI concentrates on content learning with English used as the medium of instruction, CLIL has a dual focus on both content and language learning (Smit & Dafouz, 2012). With its goal being to explicitly develop students' English ability alongside content, CLIL has been proposed for Asian institutions implementing EMI (Yang & Gosling, 2014). A CLIL curriculum offers content matters through modified lessons that are "meaningful and understandable" to second language English learners (Kareva & Echevarria, 2013, p. 239). Provided with content materials tuned into explicit instruction of English language skills, students with lower English proficiency may be able to participate in class activities and better acquire knowledge in EMI classes (Chapple, 2015). As shown in an Indonesian study (Floris, 2014), successful CLIL, like EMI, depends on language and pedagogical training and support provided by individual institutions.

Korean universities began actively pursuing EMI in the mid-2000s and have dealt with a range of problems that include central administration's compulsory implementation of EMI without regard for students' and professors' English proficiency and without sufficient faculty support systems (Byun et al., 2010). K.-R. Kim (2011) reported that most of the participating students and professors from Korean comprehensive universities agreed on the necessity of EMI. However, the majority of students were opposed to EMI in major courses because they felt that understanding their major subjects was more important than developing their English skills through such courses. Not only was students' insufficient English proficiency one of the main problems for EMI, but professors also felt that their low English proficiency hindered EMI (Chang et al., 2014; Chun et al, 2017). According to M. Kim (2015), EMI classes may be beneficial for older – second- and third-year – students; presumably, they have acquired greater amounts of content knowledge than first-year students. Other factors related to EMI include students' foreign language anxiety and disciplinary characteristics which may not appropriate a foreign language as a major instructional language (Chun et al, 2017; J. Kim et al., 2018). Chun and colleagues

(2017) showed that English language anxiety played a key role in Korean students' negative attitudes toward and avoidance of EMI classes. This increased negativity was vividly expressed against teaching academic disciplines of humanities and social sciences (J. Kim et al., 2018). Professors of these disciplines believed that the use of students' native language was crucial for their learning of humanities and social sciences subjects.

A number of studies have examined Korean students' and faculty's perceptions of EMI and provided useful information on areas of support for effective EMI. However, there is a paucity of contrastive investigation on different perspectives that these two major stakeholders bring to an HE context. In order to fill the gap in research, the present study focuses on EMI situations at science and engineering universities that have been the main facilitators of EMI among Korean universities. It aims to elucidate the comparative attitudes of students and professors toward their university's EMI policy. The findings are to contribute to the negotiation of different views on EMI which will help to ensure its sustainability in an EFL HE context

## Methods

### Research Questions

This study attempts to represent the views of two groups: professors teaching humanities, social sciences, or arts (HSA) at Korean science and engineering universities; and students enrolled in one or two HSA courses. A mixed method of quantitative and qualitative study was used to explore the following research questions.

1. How do professors teaching HSA and students studying science and engineering perceive EMI policies and instruction?
2. How do they think EMI in an EFL context should be improved?

### Context of the Study

The study was conducted at three leading science and engineering universities in South Korea, namely institutions I, II, and III. Institution I is the largest of all, both in terms of student population (about 3,800 undergraduates and 6,700 graduate students) and full-time faculty (639), as of 2019. Institution II has the fewest students (about 1,400 undergraduates and 2,200 graduate students) and faculty members (283). Standing in the middle in size, Institution III has about 2,900 undergraduates and 1,900 graduate students and 455 faculty members. Despite their curricular foci on science and engineering education, these institutions offer diverse HSA subjects that emphasize the integration of knowledge in HSA and science. HSA curriculums thus aim to cultivate global leadership through interdisciplinary programs as well as up-to-date HSA-specific education.

To elucidate the mandated EMI in each institution, Institution I adopted a full-scale EMI policy in 2006, which was the first among Korean universities. Under continuous criticism regarding a lack of professors' and students' English abilities and limited English support measures, the university maintains EMI in 84 per cent of undergraduate classes as of 2019. As this institution is likely to uphold the current-level or enhanced EMI policies, its future vision includes creating a Korean-English bilingual campus. Institution II adopted an optional EMI policy in 2004 and EMI classes were recommended for professors with incentives. The university gradually expanded EMI; consequently, by 2011 the percentages of the EMI courses reached up to 90 per cent of the undergraduate classes. The proportions, however, have decreased to 80 per cent, as of 2019.

Institution III has implemented the most stringent EMI policy among the three universities. It has required all credit courses, including required and elective subjects, to be conducted in English since 2009.

The use of Korean in the classroom is prohibited, and the university is in the process of adopting English as its official language. All university documents are drafted in English, and most official emails are written in either English or English and Korean.

## Data Collection and Analysis

The study adopted a mixed method, a research method useful to incorporate qualitative and quantitative approaches. Effective in triangulating and validating different datasets, this method is referred to as a critical exploratory methodology (Creswell & Plano Clark, 2018). Based on an exploratory sequential mixed method (Creswell & Plano Clark, 2018), the research design was sequenced into the two phases of data collection and analysis: a quantitative survey study (students and professors) and a qualitative study of follow-up interviews (professors). First, in order to investigate students' perceptions of their university's EMI policy and classes, a questionnaire survey was constructed based on previous studies on EMI (Chun et al, 2017). Consisting of four main areas, the survey included 25 questions: 5 on basic demographic information; 8 on EMI versus Korean-medium instruction (KMI); 6 on EMI methods; and 6 on English language ability and English language education. To increase the internal validity of the survey data, the student participants were limited to freshmen and sophomores enrolled in one or two HSA classes at each institution, 523 in total (Table 1).

TABLE 1  
*Demographic Information of the Survey Participants (Students and Professors)*

		Frequency (%)	
		Students (N = 523)	Professors(N = 37)
Institution	Institution I	228 (43%)	14 (38%)
	Institution II	92 (18%)	12 (32%)
	Institution III	203 (39%)	11 (30%)
Gender	Male	378 (72%)	15 (41%)
	Female	125 (24%)	22 (59%)
	No-gender specified	20 (4%)	0 (0%)

A faculty questionnaire survey was conducted a month after the student survey was completed. The survey included 34 questions on professors' perception of EMI policies and classes: 8 on individual information such as gender and English language ability; 5 on professors' experience of teaching EMI classes; 3 on their school's EMI policy; 5 on their English teaching ability and methods; 6 on their students' English ability; and 7 on the necessity of EMI. The participants were 37 full-time (tenure-track and non-tenure track) professors teaching HSA subjects at the universities: 14 out of 29 (48.3%) of the HSA faculty at Institution I; 12 out of 22 (54.5%) at Institution II; and 11 out of 16 (68.8%) at Institution III.

In answering some of the questions in the questionnaires, the survey participants were allowed to choose more than one answer. They were also asked to provide text responses to open-ended questions. The surveys were conducted during the same weeks across all three universities, which helped reduce the effects of other confounding variables. For the analysis of the survey results, one of the researchers ran both descriptive and inferential statistics, using SPSS program. Given the percentages and frequencies of respondents' choices, the researchers attempted to infer and discuss what those numbers mean and imply for a larger population of students and professors at the universities.

After the questionnaire surveys, the researchers recruited faculty members for follow-up interviews through emails. Among the volunteers, nine professors (four male and five female professors), with four or more semesters of EMI experience, were invited for a one-on-one interview. Semi-structured interviews were conducted in Korean for 30 to 50 minutes, and the interview items included questions on their opinions of their university's EMI policy, EMI in HSA courses, and the use of Korean in EMI classes. For the analysis of the interview data, content analysis was used, which incorporates coding

contents into themes (Saldana, 2015). The audio-recorded interviews were transcribed and compared with the results of the questionnaire surveys. The coding method of qualitative data was applied to find principal themes. The major codes identified were (1) internationalization of universities; (2) students' English proficiency; (3) disciplinary differences; and (4) support for the implementation of EMI. The final list of codes was compared with the statistical results. The interview data and short-essay answers in the surveys were translated into English by one researcher and verified by another researcher.

## Results

### Professors' and Students' Perceptions of EMI Policies and Classes

The first research question as to professors' and students' perceptions of EMI has engendered five major areas of interest regarding EMI: (1) motivation for EMI; (2) English ability to learn or teach a subject; (3) EMI effect on improving students' English ability; (4) comparative effectiveness of EMI in learning against Korean-medium instruction; and (5) EMI implementation.

#### Motivation for involvement in EMI

The survey results showed that the most frequent reason that the students and professors were involved in EMI was due to their university's policy. The vast majority of the faculty responses (70%) indicated that they offered EMI because it was mandated by their university (45%) and to keep pace with their university's internationalization endeavors (25%) (Table 2).

TABLE 2

*Professors' Reason(s) for Offering EMI (N = 28)*

Answer choices (multiple choices possible)	Frequency (%)
It is mandated by the university policy	24 (45%)
To keep pace with the university's internationalization efforts	13 (25%)
For my own scholastic growth	6 (11%)
English is comfortable	4 (8%)
To help improve students' English language ability	2 (4%)
To enhance students' knowledge	2 (4%)
Others	2 (4%)
Total	53

Similarly, the majority of the student responses (51%) showed that they took EMI classes because it was mandated by their university (Table 3). In addition, 17 per cent of the student responses indicated that they took EMI classes for the improvement of their English ability, while only 4 per cent of the professor responses showed that they offered EMI to help improve students' English ability, showing that many more students were concerned and hopeful about the development of their English ability through EMI classes.

TABLE 3

*Students' Reason(s) for Taking EMI Classes (N = 512)*

Answer choices (multiple choices possible)	Frequency (%)
It is mandated by the school policy to take EMI classes	328 (51%)
They may be helpful for improving my English ability	111 (17%)
Due to scheduling conflicts	52 (8%)
English is comfortable	33 (5%)
I have never taken an EMI class	7 (1%)
Others	116 (18%)
Total	647

It is not surprising to obtain this homogeneity in the major motivation for EMI. Both groups found it to be inevitable when an EMI policy has been adopted top-down by the universities' central administrations.

### English ability for EMI

Regarding professors' teaching ability in English and methods, both groups of students and professors felt them to be more sufficient (35 and 28%, respectively) than insufficient (18 and 16 %, respectively) (Table 4). The students were more satisfied with their professors' classroom teaching via EMI than their professors themselves. It is noticeable, however, that variance among the professors' proficiency levels was found to be more significant by the students (36%) than the professors (25%). These differences, thus, may be a more significant factor to be considered prior to EMI implementation.

TABLE 4  
*Professors' English Proficiency and Teaching Methods*

Answer choices	Frequency (%)	
	Students (N = 516)	Professors (N = 32)
Professors have good ability and methods	182 (35%)	9 (28%)
Professors lack good ability and methods	93 (18%)	5 (16%)
Different by professors	185 (36%)	8 (25%)
I don't know	56 (11%)	6 (19%)
Others	0 (0%)	4 (13%)

Often times, students clearly expressed their concern with EMI out of their experiences with classes taught by professors whose English was less than expected. As shown in the following response to a survey item, students related the practicality of EMI to their professors' levels of English mastery:

*Professors who feel uncomfortable using English should teach in Korean. It will be for the benefits of both the professor and [his/her] students. (Survey S428)*

In the subsequent part regarding students' English proficiency level for EMI, a much higher percentage of the professors (67%) than the students (36%) felt that students' English ability was insufficient, indicating professors' possible frustration over the inadequacy of students' English ability.

### EMI effects on students' English ability

As for the effects of EMI on students' English ability, we examined those items regarding the contribution of EMI to the improvement of students' English ability and specific English skills expected to improve via EMI. The results showed that 48 per cent of the professor responses showed that EMI should be helpful for the improvement of students' English ability, but only 22 per cent of the student responses concurred. Many more students (29%), than professors (4%), felt that EMI was 'not helpful' for their English ability (Table 5). In other words, by taking EMI classes, more students had been hopeful of developing their English skills than the professors, but they felt that their expectations were not met.

TABLE 5  
*EMI's Effects on Students' English Ability*

Answer choices (multiple choices possible)	Frequency (%)	
	Students (N = 519)	Professors (N = 27)
Helpful	119 (22%)	13 (48%)
Not helpful	159 (29%)	1 (4%)
I don't know	130 (24%)	2 (7%)
It depends on each class	139 (25%)	9 (33%)
Others	6 (1%)	2 (7%)
Total	553	27

For specific English skills improved by EMI, only those who have taught or taken courses via EMI responded to the item of relevance. The largest percentages of the student and professor responses (35 and 30%, respectively) show that students improved their listening skills (Table 6). However, the lowest percentage of students (11%) felt that their speaking skills improved, whereas the lowest percentage of professors (18%) was convinced that students' writing skills improved due to EMI.

TABLE 6  
*Students' English Skills Improved by EMI*

Answer choices (multiple choices possible)	Frequency (%)	
	Students (N = 171)	Professors (N = 19)
Listening	109 (35%)	13 (30%)
Reading	98 (32%)	10 (23%)
Writing	58 (19%)	8 (18%)
Speaking	35 (11%)	11 (25%)
I don't know	6 (2%)	0 (0%)
Others	2 (1%)	2 (5%)
Total	308	44

### EMI vs. KMI

Overall, both groups were found to prefer KMI over EMI. The majorities of the students (64%) and the professors (61%) felt that Korean-medium classes were more interactive. Only one per cent of the students and four per cent of the professors said that there had been more interactions in EMI classes. Likewise, much higher percentages of the students (55%) and the professors (39%) showed greater satisfaction with KMI classes than with EMI classes. The students and professors who found EMI classes more satisfactory were only three and four per cent, respectively.

Surprisingly, despite these disapproving opinions of EMI, the majorities of the students (58%) and professors (71%) said that their university should continue with EMI. This may be incongruous but explicable. In either the answers to the open-ended question of the survey or the interviews, the professors, for instance, said that EMI was necessary for the enhancement of their university's competitive edge, for the attraction of foreign students, and for the improvement of students' English language ability. One professor specifically pointed out the practical contribution of EMI to students' acquisition of subject knowledge and English writing.

*EMI is needed naturally because we have many international students.... Also, there are benefits of EMI for Korean students. Especially in the fields of science and engineering, students are required to use discipline-specific terms that are in English. Our graduate students write papers in English; they say it is more difficult to write in Korean because all their main or technical terms are in English. (Interview P3)*

This comment clearly reflects that the professor (P3) is well aware of the need for EMI, particularly in the disciplines of science and engineering. This is intriguing because as a professor teaching a subject on humanities or social sciences he can clearly relate to his students' academic needs while studying science

and engineering. Likewise, students made positive observations regarding the needs for EMI with respect to their disciplinary backgrounds, which are well reflected in their text responses to open-ended questions of the survey:

*It looks as if taking classes in English does more harm than good, but in the long term it will be very beneficial for advanced studies of one's major area. (Survey S455)*

*It is better to take engineering-major courses in English. Such courses are rooted in Europe, and it is very inconvenient to translate so many terms into Korean. (Survey S490)*

On the other hand, many students had harsh criticisms against their university's uncompromising EMI policy mostly due to a difficulty with acquisition of fundamental knowledge as to math and science:

*I wish the university offered Korean-medium classes for students lacking fundamental knowledge of the basic courses. (Survey S204)*

*I often feel that it is so inefficient to take all classes in English. English is necessary for my graduate or doctoral studies, but I feel I've been missing out essential, fundamental knowledge of sciences. (Survey S88)*

## Implementation of EMI

Given that the majorities of the student and faculty groups agreed that EMI classes should be maintained, we examined the participant perspectives of the ways in which EMI is to be implemented. Intriguingly, most of them, in both groups, objected to indiscriminate implementation of EMI by university administration. Only five per cent of the students and 13 per cent of the professors believed that all classes should be taught in English. Also, merely five per cent of the students and seven per cent of the professors thought that all students should take EMI classes, and even smaller percentages of the students (1%) and professors (2%) believed that all professors should teach in English. The largest percentages of the students (4%) and professors (61%), instead, believed that only those who prefer to do so should take or offer EMI classes. These show that many students and professors were dissatisfied with their university's current EMI policy and believed that EMI should be maintained but as an optional instructional method.

The analysis of the qualitative data revealed the conspicuous common problem among these three universities in relation to the implementation of EMI. There has been a lack of consensus-building processes in and shared goals of EMI implementation among the faculty, students, and administration. Professors and students alike argued particularly for the importance of reflecting the characteristics of individual disciplines and fields in implementing EMI:

*EMI should be offered according to the needs of individual departments and fields. That is, its implementation should be more flexible. There are differences in the ways of implementing EMI between major courses and liberal-arts courses. Many of undergraduate students are from science high schools. They tend to lack background knowledge in liberal arts, so they may feel lost in EMI classes. (Interview P1)*

*I don't believe that all courses should be taught in English .... Only those professors who feel comfortable teaching in English should offer EMI classes. It is not desirable for their insufficient English proficiency to hamper students' learning .... Also, students should have choices. For liberal arts courses, they should be able to choose between classes taught in Korean and in English .... I've been teaching several years now, but haven't taught any classes in Korean. There are students*



*who want to take my courses but haven't because they feel that they don't have sufficient English skills. (Interview P2)*

Some students expressed their frustration about the implementation in in the survey responses:

*I have no idea why I have to take classes in English when there are no international students. I've been attending the school for seven years and have taken many classes .... English is the main culprit that lowers the overall instructional quality and ruins the nice ambience of a class and impedes communication and students' participation. (Survey S450)*

*I can understand my major subjects taught in English, but it is so difficult to understand liberal-arts courses .... I do not speak English well, and there should be more Korean-medium classes. (Survey S139)*

It is evident that both groups of professors and students in general were against their university's indiscriminate EMI policy. They also strongly believed that choices should be given to them concerning EMI classes according to their disciplines, preferences of EMI or KMI, and limitations in English ability.

## Improvement of EMI

In the latter part of the survey and subsequent interviews, we asked both groups as to their thoughts on how to improve teaching and learning via EMI in each HE environment. Their responses are presented mainly on two different types of support: educational programs and hybrid EMI tailored to an HE context.

### Improvement measures

In order to increase their participation in EMI, the professors wanted their university to provide incentives (28%), help increase their awareness of the necessity of EMI (19%) and help to enhance their teaching ability in English (16%). For the specific ways to further develop their teaching ability in English, the professors expressed the need of English teaching methods (21%), ways to share information on EMI classes (21%), and programs of English language development in such areas as pronunciation correction and classroom idioms (20%).

For the improvement of students' English ability, 76% of the professors believed that their school should augment English language education, but only 38% of the students agreed (Table 7).

TABLE 7  
*English Education for EMI*

Answer choices	Frequency (%)	
	Students (N = 510)	Professors(N = 29)
Yes	195 (38%)	22 (76%)
No	130 (25%)	2 (7%)
I don't know	161 (32%)	2 (7%)
Others	24 (5%)	3 (10%)

Students' additional comments, classified into other responses, however, showed their fear of the increased workload that additional English language education would bring. Moreover, some students commented that the existing English language education had not been effective. With these concerns in mind, students' English ability could be improved without creating additional burden through language assistance within EMI classes. Only 28% of the professors, however, said that they had provided feedback on or corrected students' English language problems in their assignments or presentations. This may be due to their understanding of EMI as content instruction, not language instruction, and their lack of expertise in providing linguistic assistance, which would require collaboration with language specialists.

## Use of students' first language

For the types of language use in EMI classes, 88 per cent of the students and 64% of the professors said that students' L1, Korean, should be used when necessary. It follows that a much higher percentage of the professors (32%) preferred English use only than that of the students (7%) (Table 8).

TABLE 8  
*Language Use in EMI Classes*

Answer choices	Frequency (%)	
	Students (N = 523)	Professors (N = 28)
English only	34 (7%)	9 (32%)
Korean to be used when necessary	461 (88%)	18 (64%)
Others	28 (5%)	1 (4%)

With regard to the specific ways of L1 use, the largest percentages of the students (38%) and the professors (40%) favored Korean to be used when difficult materials are to be presented (Table 9).

TABLE 9  
*When to Use Korean in EMI Classes*

Answer choices (multiple choices possible)	Frequency (%)	
	Students (N = 488)	Professors (N = 26)
For class introduction at the beginning	120 (10%)	1 (2%)
For summaries at the end	209 (18%)	9 (21%)
When the content is difficult	443 (38%)	17 (40%)
For homework assignments	161 (14%)	3 (7%)
For exams	209 (18%)	8 (19%)
Others	11 (1%)	4 (10%)
Total	1153	42

Most of the interviewed professors believed in the utility of Korean in class: the spectrum of their opinions goes from an argument for a bilingual class of Korean and English to the use of Korean as a support device to help students' understanding of English materials. Some intriguing, hybrid type of language uses in an EMI class was suggested:

*I believe that international students should use Korean in class as much as Korean students use English so that it will be a bilingual class .... It's a nonsense to say that class should be conducted in English even when there is only one international student .... International students must make effort to learn Korean and adjust to Korean life .... As some of them want to work for a Korean company after graduation, they need to learn Korean. (Interview P1)*

Students' uses of Korean was strongly supported not only for the acquisition of subject knowledge, but also for the sake of improved interaction including discussion-related activities:

*I give a 10-minute summary in Korean towards the end of class. After that, I hold a Q and A session, where students can ask questions in Korean. Moreover, in discussion activities, I allow them to use Korean. (Interview P2)*

*You know students fall asleep in class. About 40 minutes into class, everyone dozes off. To wake them up...sometimes I use Korean to give a summary and provide explanations on difficult concepts. Previously, I gave a summary in Korean at the end of class, but saw students depending on it too much. They were not paying attention to the main parts of class; thus, I have stopped doing it. (Interview P3)*

*Examples become real and intimate [when using Korean]. For example, using Korean will be much more real when talking about episodes around constructing a university building or a university-wide festival. Or else, on the students' part, Korean should be helpful for a class interaction like discussion or debate. (Interview P5)*

Students supported the use of Korean in EMI classes on various grounds. For example, L1 use was proposed as great assistance to help understand unclear, difficult materials and concepts that are introduced first, as shown in the following survey responses:

*Basically, classes should be conducted in English. It will be nice if professors add Korean explanations on unclear contents. It is a fact that we feel such difficulty because of English...An appropriate amount of Korean should be mixed with English. (Survey S212)*

*First, Korean-medium instruction should be given to help students understand class contents, and then EMI is given for a review of what they have learned in Korean. (Survey S194)*

*For additional explanations of even easy materials, Korean should be used, and also test items should be written in Korean. (Survey S2)*

L1 use was also advocated for increasing their enjoyment of and motivation for learning. This is significant considering the roles of motivation in the processes and outcomes of learning. One of the students responded to an open-ended question as in the following:

*Learning class contents can be very boring, since some professors just read through Powerpoint slides. If the professor shares an interesting story in Korean once in a while, it will heighten our interests in the course. (Survey S214)*

These responses in favor of the use of Korean in EMI classes essentially prioritize the issue of facilitating learning. This crucial point regarding EMI implementation is discussed in the following section.

## Discussion and Conclusions

Since EMI was introduced to Korean science and engineering universities on a large scale in 2006, few studies have assessed multiple stakeholders' views on its efficacy. This study is the first of its kind to contrastively examine the experiences of students and professors and their views of its roles. This comparison is important particularly where English is taught and learned in a classroom environment exclusively, as in many Asian EFL societies. It thus provides HE institutions with crucial information regarding how best to modulate EMI for its major stakeholders

The findings of this contrastive investigation underscore the importance of grounding EMI in a unanimous perspective among professors and students. Many more students than professors felt that EMI was unhelpful to their English ability, which indicates that students bring higher expectations of developing their English skills to an EMI class. These groups also differed in their views on two skills related to language production, speaking and writing. The lowest percentage of students felt that their speaking skills improved, whereas the lowest percentage of professors were convinced that students' writing skills improved due to EMI. Moreover, in contrast to the results of previous studies which found Korean professors' insufficient English proficiency a major impediment to EMI (Byun et al., 2010; M. Kim, 2015), professors, as well as students, tended to positively assess their own teaching abilities through English. It is conjectured that the professors from HSA disciplinary backgrounds feel proficient in their use of English regardless of an EMI policy. However, as shown in the findings, the students,

predominantly engineering majors, were much more aware of variance among their professors' English abilities across disciplines. It is thus very likely for students to be frustrated and disengaged when they witness their professors fail to meet their expectations. These moments of frustration and disengagement should pose a crucial challenge to any institution considering to adopt an EMI program.

Given the divergent perceptions of EMI efficacy, EFL HE institutions have been advised to adopt consensus-building processes and to establish negotiated goals of EMI implementation among the faculty, students and administration (e.g., J. Kim et al., 2018). Our investigation shows that most of the participants either took or taught EMI classes because it was mandated by their university. This top-down approach to language policy seems to be a primary source of the negative perspectives towards the policy. As detailed in previous studies, systematic support for faculty and students in EMI has been scarce (Chun et al, 2017; Floris, 2014). In the current study, both groups of students and professors felt that EMI classes were less interactive and less satisfactory than KMI classes, perhaps because many felt that they had limited language ability for EMI. Intriguingly, whereas students were reserved about additional English language education, professors expressed stronger need for systematic instructional and linguistic support available at the three universities. Given the different input from professors and students, this study advocates for negotiation processes between them (Corrigan, 2015; Vu & Burns, 2014). Through the processes, different views will be shared and negotiated, which will help design a better support program for EMI.

Some possible solutions to enhancing English education in an EMI classroom may be found in adopting a new teaching methodology, such as CLIL (Smit & Dafouz, 2012); as well as in ample training for EMI-specific teacher feedback (Kim & Kim, 2020). As CLIL enhances content learning through language instruction and vice versa, it necessitates collaboration between content instructors and English language specialists (Smit & Dafouz, 2012). Policy makers and educators alike need to deliberate its introduction and assess its efficacy in order to mitigate the linguistic issues in the typical EMI setting. The other solution can be found in providing professional development for EMI-specific teacher feedback on language as well as content. Effective feedback on both areas is crucial to increased student engagement in using English and should be explicitly noted in a professional training (Kim & Kim, 2020). These two possible solutions may help mitigate the common challenge of EMI, a lack of evidence of improvement in English.

Remarkably, despite these disapproving opinions, the majority of participants said that their university should continue with EMI. Its maintenance was found to be vital for both the enhancement of their university's competitive edge and the attraction of international students. This contradictory reaction to EMI highlights the spectrum of the influences of internationalization pitched by EMI onto Korean universities in general. It is thus of paramount importance to draw attention to the improvement measures proposed by both groups of the present study. To begin with, HE institutions in an EFL society need to adopt more flexible EMI policies. Heavy-handed, centralized approaches to the implementation of EMI have caused conflicts and dissatisfaction among faculty members and students. Professors and students should instead be encouraged to participate with incentives and shared goals (Byun et al., 2010), and granted more autonomy within their EMI programs.

One important way to exert flexibility is to properly contextualize L1 during EMI. The results exhibit the necessity and importance of L1 use in EMI classes. Both groups recognized such a need, especially when dealing with difficult lessons. Studies have shown that L1 can be used effectively to clarify, emphasize, and repeat important content; to build and solidify rapport between the teacher and students who speak the same L1 (Ko, 2008); and for classroom management (Ferguson, 2009). Researchers have also affirmed students' use of L1 in favor of collaborative, interactive learning (e.g., Lin, 1996; Probyn, 2001). For classroom instructors, L1 has been found to help to build social and cultural connections with students (Lin, 1996). Intriguingly, the present study has revealed different needs for Korean language between the groups. Whereas the professors' need for Korean was mostly concerned about the level of difficulty with teaching content, students expressed the increased need for L1 in every aspect of learning (e.g., introduction at each class time). This input regarding these constructive functions of code-switching to L1 is to be explicitly noted by instructors and used properly in the EMI classroom (Fujimoto-Adamson & Adamson, 2018; Probyn, 2001).

Finally, there should be an EMI research consortium with a focus on the effectiveness of EMI for students and professors in various disciplines. The repeated comments by the HSA professors and the students corroborate the importance of disciplinary characteristics in adopting EMI in a classroom (Bolton et al., 2017; Kuteeva & Airey, 2014). As interdisciplinary studies are gaining more significant ground in HE, it is important for researchers and educators from different disciplines to work in collaboration and design curriculum. As found in this study, the design should cater to students' and professors' English proficiency levels, academic disciplines and, most significantly, finely defined functional characteristics of L1. All these efforts will respond to the needs for systematic, collaborative research efforts for the future of EMI.

It should be noted that this study examined the perceptions of undergraduate students and professors in the areas of HSA at three Korean science and engineering universities. The study was limited in its methodological design to the two groups from different academic disciplines, HSA faculty versus science and engineering students. For more comprehensive views of members at Korean universities, we hope that further studies will be conducted with larger populations that include graduate students, professors in various academic fields, and school administrators who are influential in implementing EMI policies. It is also hoped that additional studies will be conducted for a more thorough understanding of the current status and future outlook of EMI in Asia and other parts of the world.

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