

IMPEDIMENTS TO EMI AND ESP IN AN ASIAN CONTEXT

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Abstract. *In recent years, across Asia, the number of programs at the tertiary level that teach English through content has been increasing, and much of the focus has been on EMI (English as Medium of Instruction) classes rather than CLIL or ESP/EAP. However, in many of these Asian contexts, there are often natural impediments that make integrating content and language difficult. Many Asian languages, such as Korean or Japanese, are syllable timed, or mora-timed, and consequently, the sound systems of such languages differ substantially from English. Learners coming from syllable-timed or mora-timed languages often lack a natural understanding of suprasegmental phonology, impeding comprehension. As such, such learners have undeveloped listening skills and have difficulty understanding naturally enunciated English. They struggle to comprehend extended streams of connected speech that they would otherwise understand were it written down on paper. And yet, many of these content approaches do not address these issues. Policy makers set goals of introducing integrated content into their curriculum, without much regard for the possible problems that might occur. Different learners bring different sets of linguistic difficulties to each teaching context, and the problems associated with phonological interference need to be addressed if integrating content into Asian English classes is going to be successful. Given that many European languages are stressed timed and generally match the phonological rhythms of English, to date such problems have not garnered much attention. This paper presents a preliminary study that was undertaken with second year university students at a Japanese science university, where sheltered content was taught. The paper will outline some of the difficulties that students encountered.*

Key words: *phonological interference, listening comprehension, EMI, ESP/EAP*

1. INTRODUCTION

Acting effectively within an increasingly interconnected world requires a certain amount of global competence. Such competence includes being conversant in a language other than your own, being knowledgeable of other cultures, being understanding of differing perspectives, being willing to engage with people from different ethnic, religious or racial backgrounds and being disposed to work together with other people to attain a common good. Acquiring such competence demands that students be both knowledgeable and curious about the world outside their own.

In global rankings, Japan is the third largest economy in the world, accounting for 4.26% of global GDP. Japan developed its economic power by having a strong manufacturing sector. However, over the past 30 years Japan has had to face a variety of economic

challenges that have forced it to look more outside its borders. The rise of the yen during the 1980s and 1990s created new sets of problems for Japan's manufacturing sector. Higher labor costs pushed Japanese companies to relocate their manufacturing base outside Japan to China, Thailand, Vietnam and other low wage countries.

Another challenge facing Japan's is its aging and falling population. In 2015, one third of Japan's citizens were over 65 years old, and, according to forecasts by the *National Institute of Population and Social Securities Research*, this will rise to 40 percent by 2050 (IPSS, n.d.). Compounding this is the fact that since 2010, Japan's population has been falling, and has now begun a period of sustained population decline. Consequently, Japan's share of world GDP is also set to decline. These economic realities are pushing Japan to look outside its borders to ensure its continued prosperity.

Faced with such looming challenges, Japan is continuing to put forth an educational policy of *internationalization*, which is a "process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education." (Knight, 2003: 2) In a global world where economic success increasingly depends on connections with the rest of the world, Japan has little choice but to deepen its involvement with people from other countries. *Kokusaiika*, (internationalization) is a common term that is heard in discussions of educational reform at all levels of society. And, in Japan, internationalization starts with the process of developing the English abilities of its working population in order to communicate more effectively with the outside world.

Businesses in Japan have welcomed measures to improve the English skills of university graduates in Japan. In 2003 *Keidanren*, the Japan Business Federation released a policy proposal called *Japan 2025*. In this document, Keidanren called on Japan, "to lead the way to forming a free economic sphere in East Asia." (Keidanren, 2003: 3) Such efforts to look outside its borders will require "reform of Japan's schools and broader acceptance of foreign specialists and engineers in its academic institutions and companies" (Keidanren, 2003: 5)

To facilitate reform, the government has launched a number of funding initiatives aimed at internationalization. In 2011, the *Re-Inventing Japan Project* was instituted. (MEXT, n.d.) The aim of this program was to help Japanese universities build collaborative programs with universities outside of Japan. According to MEXT, the *Japanese Ministry of Education, Culture, Sports, Science and Technology*, a centerpiece of this program was conducting classes in English to facilitate collaboration.

In 2012, the *Go Global Japan Project* was launched. Its aim was to help overcome a tendency among Japan's younger generations to be *inward looking* and to cultivate a generation of university graduates with wide, global perspectives who can tackle challenges and excel within the international arena. Educational programs were adopted that would "strengthen students' global adaptiveness via education aimed at fostering people capable of aggressively challenging global issues and playing active roles on the global stage." (JSPS, n.d.) Concurrent with these goals was the goal to expand the English proficiency of Japanese university students.

There were two strands to the *Go Global Japan Project*, one was a university-wide program, the other was a faculty-specific program. Eleven universities took part in the university-wide program and thirty-one universities took part in the faculty-specific program. The program provided extra funding for schools that instituted programs aimed at cultivating global human resources through enhanced English proficiency and an expanded global knowledge reserve.

In 2014, MEXT launched its *Top Global University Project*. Funding was provided to help top-ranked Japanese universities link up with top-ranked universities outside Japan. And again, English proficiency was very much a cornerstone of this project.

The help achieve these goals of enhanced English proficiency, many schools have begun to implement classes where English is the *medium of instruction*. These EMI programs have taken many forms and differ from the methodology of ESP and CLIL, in that EMI classes feature no linguistic focus on form. While all three have the learning of content as a goal, they differ with respect to the amount of linguistic support that is offered. EMI has goals that are limited to the teaching and learning of the offered content. That is, while CLIL and ESP are dual purpose concepts, EMI is more focused on content learning. Policy makers perhaps assume that students will develop their English proficiency as an incidental and felicitous by-product of offering classes in English. However, classes do not offer any focus on linguistic form to help students understand the content. Language learning itself is largely left to develop on its own.

Thus, EMI does not have any expected linguistic outcome, per se. Classes focus solely on content and ignore any linguistic deficiencies as being external to the course. Tests and evaluation typically limit their focus to seeing what and how much of the content that each student has learned. An underlying assumption of this EMI approach is thus that language is best picked up incidentally and that explicit instruction does not contribute to language development, which is an assumption that runs counter to decades of research into second language acquisition. The vast majority of research into second language acquisition supports that idea that making students aware of teachable linguistic features aids acquisition. (see for example Doughty and Williams, 1998; Schmidt, 1995)

CLIL and ESP classes differ from EMI, in that they also include a linguistic focus. Thus, CLIL and ESP have much more in common with each other than they do with EMI. While there are differences between CLIL and ESP/EAP, such differences largely depend upon how broadly one defines both ESP/EAP and CLIL. Typically, distinctions are drawn based on the balance between their dual focus of content and linguistic form, with ESP/EAP often being regarded as having more of a focus on linguistic form than CLIL.

Given that many EMI classes do not include any linguistic support, is it reasonable to assume that all students are able to understand the content of all that is presented in the class? In order to actively comprehend and participate in EMI classes, students need to be able to read and understand the academic materials presented in the class. They need to be able to listen and comprehend academic lectures. They need to be able to listen and comprehend academic discussions. They need to be able to express ideas and concepts with precision. They need to be able to summarize. They need to be able to compare, contrast and synthesize. However, in order to do such tasks adequately, students need to be somewhat proficient in the language.

To function effectively in an academic environment, the ability to comprehend lectures and discussion is absolutely essential. Good productive skills depend on having good receptive skills. Thus, being able to understand the language input in a given academic context is a fundamental and crucial skill. Inadequate listening skills can severely hamper one's chances of academic success. And yet, students in many of these EMI programs are simply assumed to have adequate listening skills.

However, in Asian contexts, it is not uncommon to find learners of English who struggle to hear words that they know. Many learners have difficulty comprehending spoken language that they would otherwise understand were it written down. That is, there are demonstrable phonological impediments to integrating content and language that need to be better understood.

Many Asian languages, such as Korean or Japanese, are syllable timed, or mora-timed, and consequently, the sound systems of such languages vary substantially from English. Learners coming from syllable-timed or mora-timed languages often lack a natural understanding of suprasegmental phonology, impeding comprehension. As such, many Asian learners suffer from undeveloped listening skills and have difficulty understanding naturally enunciated English. They struggle to comprehend extended streams of connected speech that they would otherwise understand were it written down on paper.

English, unlike most Asian languages, reduces substantially in connected speech. Unstressed syllables that come between stressed syllables tend to be reduced in order to accommodate an even rhythm between stressed syllables. Known as *isochrony*, this tendency to have salient words stressed at even intervals results in syllables being stretched out, syllables being compressed, vowels weakening, sounds disappearing and so on.

And yet, most EMI programs do not address such issues. Policy makers set goals to introduce integrated content without identifying possible problems. All other factors being equal, the world is not equal. Different learners bring different sets of linguistic difficulties to each teaching context, and the issue of phonological interference is not an issue that has been given its due consideration.

In European contexts, phonological interference might not be an important consideration, given that many European languages are stressed timed and generally match the phonological rhythms of English. Although anecdotal, the evidence seems clear when you look at a map, and realize that the most proficient speakers of English as a second language all seem to come from stressed-timed phonological backgrounds.

If there are phonological impediments that need to be overcome, this suggests that policy makers in Asian contexts might be better off implementing CLIL classes or ESP/EAP classes that have as a core, a focus on linguistic form to help students better understand the content.

2. PURPOSE OF STUDY

In a previous study done into student reactions to a curriculum that included an explicit focus on phonological form, (Graham-Marr, 2015), the author found that students overwhelmingly indicated that having a knowledge of the phonological features was beneficial to helping them improve their listening comprehension.

As noted, students in EMI courses are typically not given any instruction about language, while CLIL courses or ESP/EAP courses teach both language and content. Given the difficulties that learners coming from syllable-timed or mora-timed backgrounds have with comprehending naturally enunciated English, an inquiry into whether or not students feel that a focus on stress-timed phonology was useful within an ESP/CLIL context seems warranted. As many programs all around Asia are moving towards including more content in their English curricula, it is important to elucidate if this focus on content should be done concurrently with a stepped-up focus on phonological form. That is, we need to ask whether CLIL or EAP/ESP might be better suited to the needs of the students in many Asian undergraduate programs than EMI.

3. PARTICIPANTS

The participants in the study were 32 second year university students studying English as a required course in the engineering faculty at a well-regarded science university in Tokyo. All students were majoring in Industrial Chemistry. Entrance to the school is competitive, and students must pass an entrance exam which includes English as a core subject. Students at this university, generally have a good passive knowledge of English. However, they often lack fluency and they struggle to comprehend spoken language that they would otherwise understand were it written down.

The classes at the school are not divided up by proficiency level, as the entrance exam tends to level the students. Most students in the study could be said to be at a CEFR A2 or B1 level of English proficiency.

Although their proficiency levels are not terribly high, most of the students see English as a part of their future and are somewhat motivated to study English. Most of the students see themselves as one day, being good English speakers.

4. CLASS PROCEDURES

The class was a full year course, meeting once a week, 15 times in the spring term and 15 times in the fall. Each class was 90 minutes long and was taught by a native English speaker, the author.

The class had an EAP orientation, although the topics were not too difficult. Typically, the class dealt with topics and issues that the students were well familiar with. Topics included: international trade, population growth, unmanned space missions, anthropology, oceanography, psychology, education and so on.

In most classes, students had to listen to lectures, and then summarize these lectures in groups. In addition, every 90-minute class also included a short five to ten-minute *focus on phonological form* which drew student attention to some of the difficult phonological features found within each lecture. Typically, these activities were done as either class warm-ups, reviewing the previous class' lecture, or as post-lecture deconstruction exercises.

Students were then encouraged to listen repeatedly to the lectures in their own time as homework. The instructor encouraged students to follow a cycle of listening while reading the scripts, followed by listening only. Students were told to repeat this process until they were able to comprehend 100% of the lecture, that is, they were encouraged to practice listening to the lectures until they could hear all the *in-between*, highly reduced pronunciations of the prepositions, articles, pronouns, auxiliaries and so on. The teacher referred to this practice as *perfect listening*.

Every week students had some of the more difficult phonological features of the lectures pointed out to them.

5. INSTRUMENTATION

A questionnaire was administered at the end of the course. In addition, students were encouraged to make further comments in either English or Japanese. Relevant to this study, the following questions were asked:

1. How difficult was the focus on natural English?
2. How useful was the focus on natural English?
3. Do you think your listening has improved this school year?
4. Did you do extra listening outside of class?
5. If you could understand more easily when you listen to English, would you study more?

6. RESULTS

Most of the students felt that their listening skills had improved over the course of the year, with 29 out of 32 students responding positively, either *yes* (3) or *a little* (26), and 3 out of 32 students responding *not really*. Student responding positively had comments such as “having to listen and understand the content of the lectures in order to summarize them was good practice”, or that they “were now able to hear the prepositions and articles better.” This suggests that students felt that the listening tasks, in combination with the linguistic focus on phonological form resulted in some sort of improvement.

As to the question of whether or not an explicit focus on phonological form was beneficial, 23 out of 32 responded positively to the question: *How useful was the focus on natural English?* Seven students said that it was *very useful* and 16 said it was *useful*. Concurrently, 25 out of 32 students said that this focus on phonological form was either *difficult* or *very difficult* with the remaining seven saying that it was *easy*. Comments from students who had rated these activities as difficult included, “the lectures were too fast, and that they were only able to pick out the key words”, or that “the pronunciation of the in-between words was difficult”.

To get a general idea about in-course and out-of-course effects, the students were asked if they did extra listening outside of class on their own accord, and the results were split, with 50% answering that they’d done some extra listening outside of class and 50% responding that they had not done any extra work. Most of the students who said that they weren’t able to do extra listening outside of class cited homework and having to write reports as the reason they were not able to study more. This suggests that any improvements that the students felt they had made were likely a result of the materials covered in class. And in fact, many students mentioned that they felt that they had improved from being able to practice once a week.

Lastly, students were asked a hypothetical question about whether they felt they might study more, if they could more easily understand the language that they were listening to. Ninety-one percent of the students, or 29 out of the 32 students, said that they would study more if the language were more accessible. This suggests that diminished listening comprehension skills can have a negative effect on student motivation to do self-study out of class.

Learning a language requires thousands of hours of engaged time-on-task, where students are processing meaning in order to understand or communicate a message. If students lack an ability to understand an incoming message, thousands of hours of language learning opportunities could be lost.

Breaking down the results as being either positive or negative, the student responses to the questions are summarized in Table 1 below.

Table 1

1. How difficult was the focus on natural English?	Easy: 22% (7)	Difficult: 78% (25)
2. How useful was the focus on natural English?	Useful: 72% (23)	Not useful: 28% (9)
3. Did your listening has improve this school year?	Yes: 91% (29)	No: 9% (3)
4. Did you do extra listening outside of class?	Yes: 50% (16)	No: 50% (16)
5. If you could understand more easily when you listen to English, would you study more?	Yes: 91% (29)	No: 9% (3)

From these results it seems clear that students felt that having some focus on the phonological forms of English was helpful. A more detailed breakdown of the results is given in table 2.

Table 2

1. How difficult was the focus on natural English?	very easy: 0	easy: 7	difficult: 24	very difficult: 1
2. How useful was the focus on natural English?	very useful: 7	useful: 16	not so: 9	not at all: 0
3. Did your listening has improve this school year?	yes: 3	a little: 26	not really: 3	no: 0
4. Did you do extra listening outside of class?	yes: 2	a little: 14	not really: 5	no: 11
5. If you could understand more easily when you listen to English, would you study more?	strong yes: 11	yes: 18	no: 3	strong no: 0

Although follow up studies are needed to verify if student perceptions of any gains in their listening comprehension skills are both real and attributable to having student attention focused on the phonological features of English, these results suggest that:

- a. CLIL or ESP/EAP course should be instituted rather than EMI, and that
- b. in Asian contexts, CLIL or ESP/EAP classes should include instruction on the phonological features of connected speech.

7. DISCUSSION

This study supports the finding of a previous study done with an oral communication class, (Graham-Marr, 2015) that suggested that students benefit from explicit phonological instruction.

Furthermore, these findings support the many previous studies that have found an association between the teaching of phonological form and subsequent gains in listening comprehension. Vandergrift (1997), concludes that “there are cognitive, efficiency, utility, and affective advantages for focusing on listening in language learning/teaching, that metacognitive strategies are crucial to success in listening comprehension, and that these strategies can be taught.” (Vandergrift, 1999: 174) Other studies that have found an effect for the teaching of phonological form include, Goh and Taib (2006) who studied a group of primary school students in Singapore and found that raising learner metacognitive awareness positively correlated with better listening skills, and Goh (1999) who found in a study of student learning journals that “when students become fully aware of the various aspects of second language listening, they will be well placed to become more autonomous

listeners.” Wong et al. (2016) in a study of Chinese speaking students of English at a Hong Kong university found that the ability to perceive reduced pronunciation variants was an important for L2 aural comprehension. This suggests that phonological awareness-raising activities should be integrated into content classes to help students better understand.

In Japan, universities associated with special funding projects, such as the *Go Global Japan* project, measure progress towards their goals of internationalization by setting up milestones. These milestones are often just student scores on the TOEFL iBT. In order to ensure accountability, targets for graduation were set, such as achieving a score of 80 or 85 on the TOEFL iBT. Students are then expected to work towards these goals. The schools support the students by having them enroll in EMI classes and encouraging them to study abroad. However, the majority of students struggle to meet these targets. The main reason for this struggle is that for typical students coming out of the Japanese high school system, the standard of getting an 80 on the TOEFL iBT is quite high. For example, Chiba University and Tohoku University, two of the universities that have received special funding, reported respectively that only 19.0% and 13.2% of their graduates reached the prescribed goals in 2015. (JSPS, n.d)

While policy makers assume that their students’ English abilities are best developed by immersing students in EMI programs, the results from this study suggest that perhaps more support is needed.

The problem, however, is not with the programs themselves, but rather that EMI might be beyond the abilities of the majority of students, given that most of the students coming into these programs have lower levels of English proficiency. According to a 2015 survey by MEXT of students in their third year of high school, only 31.9% of students had exceeded a level of English beyond a CEFR A2 level. That is, only 31.9% of students had passed or had an equivalent qualification for the pre-2nd level of the ministry’s *EIKEN* English exam, (MEXT 2015) which is equivalent to a CEFR A2 level. With such low starting points, perhaps a dual-purposed CLIL or ESP/EAP approach might be better suited to the needs of lower-level students.

Programs that exclusively focus on content do have inherent shortcomings that firstly need to be recognized, and secondly addressed. If most of the students coming out of the high school system are coming out at a CEFR A2 level, they simply do not yet have sufficient language proficiency to follow along and actively participate in full-on content classes. In order to understand academic lectures on topics that are somewhat familiar, a basic proficiency equal to a CEFR B2 level is considered minimal, which is far more advanced than A2. If topics are unfamiliar, it is recognized that even higher levels of proficiency are needed.

The CEFR levels are based on thousands of hours of research and are widely accepted around the world. If we accept these CEFR descriptions as accurate, it is no wonder that many students in Japan have had difficulty comprehending academic content. In order to achieve proficiency gains up to a CEFR B2 level and therefore benefit more fully from these content based courses, students should be given another 400 hours of guided learning before entering these content courses. Given that each year of high school has on average about 160 guided hours of study, it would seem that students are being thrust into these programs a few years early.

While the end goals of producing global citizens are indeed laudable, perhaps more realistic intermediate goals should be set up. At the undergraduate level, Japan’s universities should move towards instituting CLIL programs or ESP/EAP programs rather than EMI. At an undergraduate level, EMI programs should be thought of as a goal, rather than a means.

Table 3 Common Reference Levels: self-assessment grid (Listening)

A1	I can recognize familiar words and very basic phrases concerning myself, my family and immediate concrete surroundings when people speak slowly and clearly
A2	I can understand phrases and the highest frequency vocabulary related to areas of most immediate personal relevance
B1	I can understand the main points of clear standard speech on familiar matters regularly encountered in work, school, leisure, etc.
B2	I can understand extended speech and lectures and follow even complex lines of argument provided the topic is reasonably familiar
C1	I can understand extended speech even when it is not clearly structured and when relationships are only implied and not signalled explicitly.
C2	I have no difficulty in understanding any kind of spoken language, whether live or broadcast, even when delivered at fast native speed, provided I have some time to get

By adopting a CLIL or ESP/EAP approach that takes into account the requisite proficiencies defined in the European Common Framework, more realistic targets can be set up. Having goals based on research seems much more preferable than goals based on hope.

7. CONCLUSION

The results from this limited study support previous findings, and are in accord with current research findings in the field of SLA, that at lower levels, students benefit from having content classes that also include linguistic support and a focus on linguistic form.

Top-down policy directives from the ministry that are instituted through funding initiatives, that are then pursued and followed by policy makers at individual universities seem more based on societal needs and idealistic goal setting rather than the needs of the students in the classroom. The results from this study suggest that the dual approaches of CLIL or ESP/EAP might be more beneficial to students than the current EMI approach. EMI classes, with their sink or swim *non-focus* on linguistic form, seem more likely to send students straight to the bottom of the pool.

Obviously, there are obstacles to be overcome. Firstly, policy makers at all levels need to be more aware that often these EMI programs do not fully meet the needs of the students coming out of Japanese high schools. Secondly, policy makers should reference the CEFR before instituting curriculum changes and make curriculum decisions that are based on actual student proficiency levels. Thirdly, if such needs were more fully recognized, teachers in the classroom need to have sufficient expertise to teach both the content of the classes and to help students with any linguistic difficulties, including helping students to improve their listening comprehension by pointing out the many phonological features of naturally enunciated English.

The ramifications are that CLIL or ESP/EAP classes need to be treated as language classes that are taught through the presentation of content. That is, for lower level learners, content is a vehicle for teaching language. For upper level learners an EMI approach where language is the vehicle for teaching content might be appropriate. However, for lower level learners, more linguistic support is needed.

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