

# 琉球大学学術リポジトリ

EFL環境における内容中心の教授法(CBI)の効果について：

英語による英語の授業は日本人学習者の語彙産出の向上につながるのか 呉屋 英樹

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## Content-Based Instruction in an EFL Writing Class: Is English Medium Instruction (EMI) Effective for Productive Development of L2 Lexes among Japanese EFL Learners? <sup>1</sup>

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### Introduction

Content-based instruction or CBI has been a global trend in foreign language education around the world (Brown & Bradford, 2016). Generally speaking, CBI is a way to conduct lessons designed to teach content matter through the target language. In recent years, the Ministry of Education, Sports, Culture, and Technology (MEXT) in Japan has been searching for ways to help foster communicative skills in English among Japanese English learners in grade schools. This is because a fierce criticism has widely spread through our society, without any careful empirical investigation (Torikai, 2018), accusing formal English education of failing to equip English learners with an adequate level of communicative competence. A key point in this criticism, enthusiastically proposed in a growing number of practitioners, is the English medium instruction (EMI) outlined in the current version of the Course of Study (MEXT, 2009). Plainly speaking, all English lessons at senior high schools are required to be carried out through the target language, namely English. However, a huge question remains unanswered; Would EMI lessons develop learners' communicative competence from teaching English in English? Up to date, gaining full development of communicative competence through EMI lessons might be too audacious to hope when considering existing evidences in the field (e.g., Ament and Prez-Vidal, 2015). The present interdisciplinary study aimed to

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investigate a possible interpretation that English as a foreign language (EFL) learners might develop their lexical competence, the most fundamental but essential component for communicative competence (Canale, 1983), as an outcome of EMI. Given that a new Course of Study will additionally require a few more thousand words than it does with the current guidance to learn in grade schools in Japan (MEXT, 2018), an expected research outcome of the present investigation will lend support to the full implementation of the new Course of Study coming in 2022.

## **Research Background**

### **Educational Changeover in Japan**

In 2009, MEXT addressed an avenue for a huge pedagogical reformation measurement regarding a new foreign language teaching polity. In particular, the present Course of Study announced the necessity of increasing opportunities for output activities in English classes, aiming to encourage the students' foreign language use in pursuit of the acquisition of foreign language communicative competence (i.e., English) at all senior high schools in Japan (MEXT, 2009). More specifically, the 2009's Course of Study requires the exclusive use of the English language in English classes so that our students will assumingly acquire communication skills in English. Such redirection of English language pedagogy was based on a heavy reliance on grammar-translation method (or GTM) in lessons from the past, which was recognized to have a notorious impact on students' communicative competence development (Torikai, 2014). Furthermore, many criticized that such methods did not help learners become communicatively competent after six years of prolonged English language learning experiences at grade schools (Torikai, 2017). In other words, because many high school graduates are not fluent in oral communication in English, English teachers have been blamed and were instructed to carry out their English lessons exclusively in English. It was believed that their students would therefore develop their communicative competences under the current Course of Study.

Despite such reinforcement of the target language use policy, there seems to be a

gap between the goals of the Course of Study and teachers' practices in their classroom (Stewart, 2009; Tahira, 2012). The MEXT annual survey (2018) shed light on to what extent English teachers conduct their lessons from a viewpoint of EMI. According to the report (MEXT 2018), 60.4% of English teachers at Japanese high schools taught in English for more than 50% of the time in Communication English 1 lessons in 2017. In upper level courses, such ratio tends to decrease; In Communication English 3, the teachers only spoke in English about 42.0% of the time in lessons. Students also used English language for 48.3% of the time in various forms of activities (MEXT, 2018).

On the other hand, English lessons at schools are not the only time English learners engage with studying English; they might also engage in various forms of learning activities by themselves. The Benesse corporation (Benesse, 2014) surveyed the realistic view of students' use of English language since students may use English when studying it in and out of the classroom. The survey found that, including all English learning opportunities, the participating students (junior and senior high school students in Japan ( $N = 6294$ )) only wrote or spoke about what they were thinking in English 34.8% and 26.3%, respectively (Benesse, 2014). In contrast, students devoted nearly 80% of their time in English learning doing translation exercises and working on grammar books. In short, learners still suffer from a lack of opportunities for output in a foreign language while studying it according to the survey.

Nevertheless, taken together, what is illuminated in these surveys is that under the reinforcement of teaching English through the English language, many instructors have been contriving ways to promote successful English lessons for students at grade schools (Tsukumoto & Tsujioka 2013).

### **EMI and Development of Language skills**

Given that second language (L2) learners would benefit from learning through the target language in lessons, as is announced in the Course of Study, it is essential to determine what skills L2 learners would develop as an outcome of such a pedagogical policy shift. In fact, some studies empirically investigated whether EMI would have any

learning impact on overall English proficiency. Generally speaking, some studies showed that students learning through L2 outperformed their counterparts in various L2 skills (Admiraal, Weshoff, & de Bot, 2006; Jimenez Catalan & Ruiz de Zarobe, 2009); Students in EMI lessons could achieve native-like proficiency in receptive skills (i.e., reading and listening) but not in others (i.e., writing and speaking, pronunciation, vocabulary). In more recent studies, Cosgun and Hasirci (2017) carried out a study at a Turkish university to determine the possibility of linguistic development in terms of four skills. They found that receptive skills such as reading and listening, but not writing, had developed in a longitudinal pre-post design for two to four years of their learning. Likewise, Ament and Prez-Vidal (2015) examined the similar point of investigation at Catalan University. They also observed noticeable changes in receptive skill related tasks but not productive skill related ones. Based on these findings, many hold a view that EMI lessons can only be effective to develop receptive skills such as reading and listening.

However, a few studies hold a somewhat different view on an effect of EMI: It might be partially effective on productive skill development. For instance, in line with Cosgun and Hasirci, Storch (2009) investigated the change in the learners' academic writing after one semester of study and confirmed little improvement on accuracy and complexity of L2 use; however, the study did observe the improvement of productive skill and knowledge such as structural knowledge, writing invention, and formality observed. Similarly, Knoch, Roushad, Oon and Storch (2015) found fluency improvement in their participants' language use but not accuracy or grammatical and lexical complexity. No changes in the scores of student writing exam were found in their three-year long study.

As seen above, although many studies observed an adequate level of receptive skill development in EMI lessons, to what extent such instruction would affect learners' productive skill development in an EFL context and what part of those skills improve is still unknown, especially development of productive skill among EFL learners.

### **Productive Knowledge of L2 Vocabulary**

Having acknowledged the little development of productive skill in EMI lessons (Storch, 2009), some studies further looked into the components of productive skills in a foreign language. Namely, the productive use of L2 vocabulary. One study (Goya 2016) looked into the lexical bands in EFL learners' vocabulary use at a Japanese university. The data was collected in the forms of TOEFL writing, and the measures used in the study were tokens, types, TTRs, K1-K3 word use, and K4-K25 word use. The lessons were organized through EMI over one semester (i.e., 16 weeks). Its findings collectively hold a view that EMI lessons in a writing course equally impacted participants' productive knowledge development of L2 words regardless of their proficiency levels. More specifically, participants gradually developed their lexical use in L2 and used more various types of words, especially difficult words.

What was left out from the previous investigation is that productive knowledge includes not only how much vocabulary L2 learners can use in their writing but also how complex their use of L2 vocabulary are, which deserves empirical attention. Another study (Goya, Cai, Ding, & Fecher, 2011) examined such lexical aspects through L2 English learners' writings in an ESL context. Particularly, Goya et al., (2011) investigated in what way advanced ESL learners' vocabulary usage in writing changed. Five graduate-level ESL learners wrote one essay per week over an eight-week period responding to a given topic at each time. The essays were analyzed in three aspects, following Laufer (1991): Language Density (LD), Language Sophistication (LS), and Language Variety (LV). The results suggested that mid-advanced learners' LD tends to remain low and spike randomly, while the LD of high-advanced learners remain high and static. In terms of LV, both groups of learners showed little change over the eight weeks. However, the high-advanced learners showed more changes across the eight weeks in LS than the mid-advanced group.

### **Research Questions**

Based on the findings in the previous studies, EFL learners would seemingly improve

their productive knowledge of L2 vocabulary through EMI lessons to some degree. However, what aspects of productive knowledge of L2 vocabulary have developed as an outcome of EMI implementation still remains inconclusive. Thus, the present study was compelled to examine the following research questions.

RQ1: Does lexical competence among L2 learners at a college-level EFL in Japan change by being exposed to EMI lessons in a writing course?

RQ2: If so, in what way does EMI lessons seem to affect EFL learners' vocabulary use in writing?

## **Method**

### **Participants**

All participants ( $n = 14$ ) were college students (3 males and 11 females) at a local university in Japan and were learning English as a foreign language at the time of investigation in addition to taking courses in their majors. Their ages ranged from 18 to 21 years old, and their majors were English with focuses varying from linguistics, literature, communication, and English education. All of them were native speakers of Japanese, and none of them were highly advanced in English in terms of productive skills. According to a survey given prior to the writing course, a mean score of their self-reported TOEIC was 638.57 ( $SD = 108.28$ ). In order to seek possible effects of language proficiency level, the present study divided the group into two; One group had higher scores ( $M = 713.75$ ,  $SD = 65.01$ ) than the other ( $M = 538.33$ ,  $SD = 58.88$ ). Their overall proficiency levels were statistically different according to an independent  $t$ -test,  $t(12) = 5.194$ ,  $p < .01$ , and  $d = 2.83$ .

### **Course Description**

Fifteen participants enrolled in an EFL writing class to satisfy prerequisite for a undergraduate degree. The course was designed to help sophomores majoring in English work on their own writing projects for a semester, and the students learned basic academic English writing skills taught through English by the researcher as well as five

native speakers of English. The native speakers visited the class five times during the semester. Each session lasted for 90 minutes. The students were heavily involved with group discussions on relevant topics facilitated by the instructors. In their project, individuals explored local issues such as Okinawa's globalization in the economy, politics, and peace-related activities. The native speakers and the instructor continuously encouraged the students especially on identifying a possible topic, sharing different viewpoints, organizing their ideas, paragraphing, and essay writing exclusively in English.

### **Materials and Procedure**

Writing task prompts were adopted from the writing section of the Test of English as a Foreign Language (TOEFL). The present study chose three prompts from Goya (2016), including "Opinion towards children's household tasks," "Preference of possible changes in life," and "Comparison of transportations for travel."

Students wrote three essays in Week 5, 9, and 13. All of the writing prompts were given to the participants through an online site. As soon as the students clicked on a button, a writing prompt appeared on the screen and a timer started to record the duration. When the students completed the task, they were directed either to submit the essay or wait until the task was automatically terminated. After submission, students were no longer able to edit their writings. At the 20-minute mark, the writing program terminated and automatically submitted the incomplete essay without asking students for submission.

The study used several programs available on the Complete Lexical Tutor website (<http://www.lextutor.ca>), an online analysis tool that is particularly designed for text description and analysis in terms of vocabulary. The site generates various types of lexical indices: tokens, types, type-token ratios (TTR), and lexical frequency bands from K1 to K25. A token refers to the number of words without considering their derivations, although those derivations belong to the same word family. Types refer to the number of words appearing multiple times but counted once. The total number of token nouns, verbs, adjectives, and adverbs were listed separately and calculated as content words.



Any items listed as academic word list (AWL) refer to sophisticated words. According to Nation (2001), TTR can be calculated by dividing the number of word types by the number of tokens, which indicates how various words are used in a text.

## **Analysis**

To investigate EFL learners' productive knowledge of L2 vocabulary, the study compiled learners' corpus which included all students' essays. The study ran the VocabProfilers listed in Lexical Tutor to calculate five lexical indices: the total number of words, the number of tokens, the number of types, the number of content words, and the number of advanced tokens or academic words (AWL).

Subsequently, by following Laufer (1991), the study manually calculated the Lexical Variation (LV), Lexical Density (LD), and Lexical Sophistication (LS) based on indices from VocabProfilers in Lexical Tutor. As definitions, LV shows the tendency of the learner to repeat the same word multiple times (Laufer, 1991), which is analogous to TTR. A high LV score indicates a participant had little change in his or her vocabulary choices. Laufer (1991) defined LD as the percentage of lexical words in the writing. A higher LD score is indicative of large vocabulary knowledge. LS is defined as the percentage of sophisticated words in the text (Laufer, 1991). A higher score in LS shows that the participant has mastered and is able to use a large amount of academic words. LV is calculated through dividing the total number of types by the number of tokens. LD is calculated through dividing the number of content words by the number of tokens. LS can be calculated by dividing the number of sophisticated words by the number of content words. All of the above indices were subjects for a Two-Way Analysis of Variance (ANOVA) repeated measure. Subsequent pairwise comparisons were carried out to seek statistically significant differences.

## **Results**

As mentioned earlier, the total number of the participants was 14; however, four

participants were excluded from further analyses due to absent at any of data collections. Figure 1 presents the means and standard deviations (SDs) of frequency bands of vocabulary used in essays (e.g., K1, K2, K3, and K4-K25) ( $n = 10$ ) according to Essay types (Week 5, 9, 13) and proficiency levels (Advanced or Intermediate). The mean numbers of K1 vocabulary in Week 5, 9, and 13 were 144.25 ( $SD = 89.78$ ), 186.00 ( $SD = 46.02$ ), and 202.75 ( $SD = 44.05$ ) among advanced participants and 116.50 ( $SD = 32.80$ ), 123.50 ( $SD = 58.73$ ), and 166.00 ( $SD = 42.25$ ) among intermediate participants. The mean numbers of K2 in Week 5, 9, and 13 were 4.00 ( $SD = 2.16$ ), 10.25 ( $SD = 5.85$ ), and 8.25 ( $SD = 2.06$ ) among advanced participants and 5.67 ( $SD = 4.59$ ), 7.00 ( $SD = 4.38$ ), and 6.00 ( $SD = 4.00$ ) among intermediate participants. The mean numbers of K3 in Week 5, 9, and 13 were 11 ( $SD = 7.74$ ), 1.5 ( $SD = 1.29$ ), and 2.75 ( $SD = 2.06$ ) among advanced participants and 12.83 ( $SD = 6.82$ ), 2.50 ( $SD = 1.64$ ), and 1.67 ( $SD = 1.86$ ) among intermediate participants. Lastly, the mean numbers of K4-25 in Week 5, 9, and 13 were 1.67 ( $SD = 1.53$ ), 1.25 ( $SD = 1.26$ ), and 1.75 ( $SD = 2.22$ ) among advanced participants and .67 ( $SD = 0.82$ ), 1.33 ( $SD = 1.03$ ), and 2.00 ( $SD = 1.10$ ) among intermediate participants. Figure 1 illustrates the mean frequency bands mentioned above.

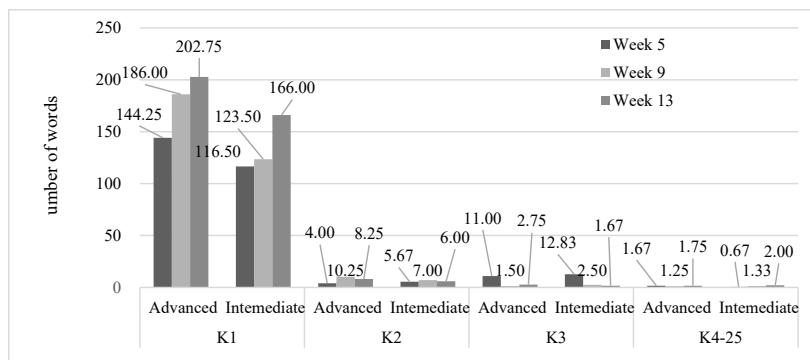


Figure 1. Means of each frequency band of vocabulary used in essays

The present investigation also looked at the complexity of vocabulary use among participants as well. As for the mean tokens in Week 5, 9, and 13, they were 164.25 ( $SD = 101.08$ ), 202.25 ( $SD = 42.84$ ), and 218.75 ( $SD = 45.40$ ) among advanced participants and 138.00 ( $SD = 43.17$ ), 137.50 ( $SD = 66.01$ ), and 182.83 ( $SD = 44.57$ ) among intermediate participants. The mean types in Week 5, 9, and 13 were 86.00 ( $SD = 40.05$ ), 107.25 ( $SD = 10.90$ ), and 106.50 ( $SD = 13.96$ ) among advanced participants and 77.67 ( $SD = 16.13$ ), 75.33 ( $SD = 26.55$ ), and 91.00 ( $SD = 11.30$ ) among intermediate participants. Figure 2 illustrates the above indices.

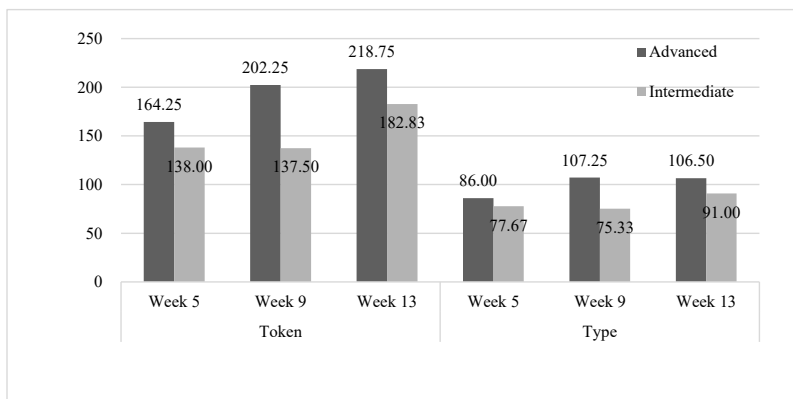


Figure 2. Mean tokens and types according to essays and proficiency levels.

Similarly, the means of LVs, LDs, and LSs between weeks according to proficiency levels were as follows: .59 ( $SD = .15$ ), .54 ( $SD = .06$ ), and .49 ( $SD = .05$ ) for LVs among advanced participants and .58 ( $SD = .06$ ), .58 ( $SD = .09$ ), and .51 ( $SD = .07$ ) for LVs among intermediate participants; .47 ( $SD = .05$ ), .48 ( $SD = .03$ ), and .45 ( $SD = .03$ ) for LDs among advanced participants and .53 ( $SD = .03$ ), .49 ( $SD = .03$ ), and .48 ( $SD = .05$ ) for LDs among intermediate participants; and .09 ( $SD = .04$ ), .04 ( $SD = .04$ ), and .03 ( $SD = .03$ ) for LSs among advanced participants and .11 ( $SD = .04$ ), .04 ( $SD = .05$ ), and .02 ( $SD = .01$ ) for LSs among intermediate participants. Figure 3 illustrates the above

indices.

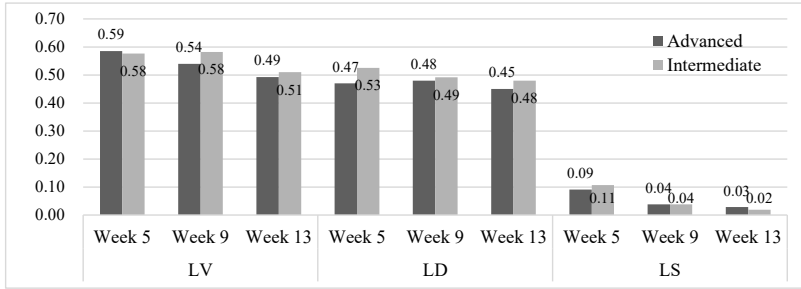


Figure 3. Mean LVs, LDs, LSs of essays according to proficiency levels

The mean number of sentences in each of the essays and the mean length of the sentences are indicated in the figure below. The Sentence Counts means were 8.75 ( $SD = 3.59$ ), 16.00 ( $SD = 4.24$ ), and 14.00 ( $SD = 2.45$ ) among advanced participants and 9.67 ( $SD = 3.20$ ), 11.17 ( $SD = 6.74$ ), and 15.33 ( $SD = 3.98$ ) among intermediate participants, while the mean length of sentences were 17.10 ( $SD = 4.88$ ), 12.78 ( $SD = 2.39$ ), and 15.44 ( $SD = 1.46$ ) among advanced participants and 12.68 ( $SD = 1.35$ ), 13.08 ( $SD = 2.27$ ), and 11.79 ( $SD = .93$ ) among intermediate participants. Figure 4 illustrates the above indices.

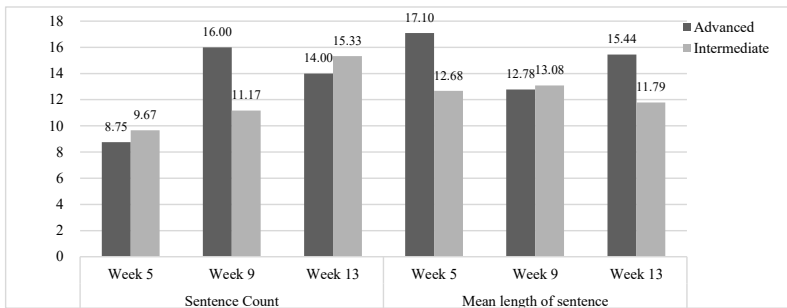


Figure 4. Means of the number of sentences and length of the sentences

The final lexical indices generated was mean frequency of all vocabulary that appeared in participants' essays. The mean frequency of all vocabulary was 2172595.21 ( $SD = 344328.77$ ), 2658057.61 ( $SD = 545813.33$ ), and 2809226.52 ( $SD = 561844.53$ ) among advanced participants and 2005845.82 ( $SD = 383090.86$ ), 2424757.95 ( $SD = 346830.94$ ), and 2765537.75 ( $SD = 670820.46$ ) among intermediate participants. Figure 5 indicates the above numbers.

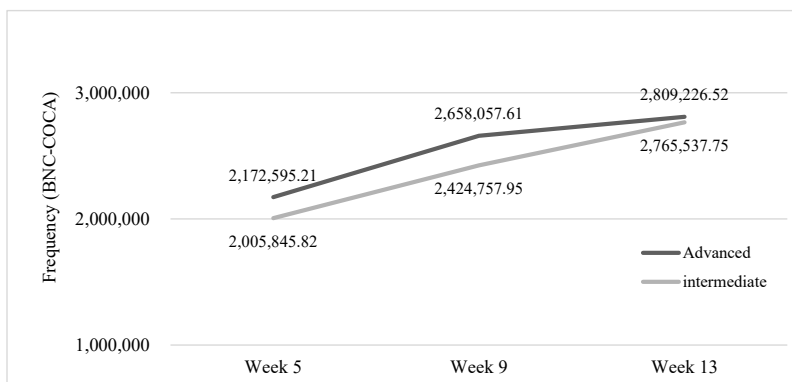


Figure 5. Mean frequency of vocabulary used in essays

In order to examine whether differences of the aforementioned indices were statistically different from each other, a Two-way ANOVA repeated measure was conducted with two independent variables, Time and Proficiency Levels, over each measured as dependent variable. According to the results, the Two-way ANOVA yielded a main effect for Time (e.g., Week 5, Week 9, and Week 13) on some frequency bands indices. Specifically, the differences in the number of words falling into the K1 and K3 frequency bands over three essays were statistically significant,  $F(2, 16) = 5.40$ ,  $MSE = 7827.65$ ,  $p < .05$ ,  $\eta^2 = .40$  for K1 vocabulary and  $F(2, 16) = 13.43$ ,  $MSE = 308.22$ ,  $p < .01$ ,  $\eta^2 = .63$  for K3 vocabulary. A multiple pairwise-comparison (Bonferroni) for the Time factor was conducted to underpin where there were significant differences. The

post hoc analysis revealed that the participants used a greater number of K1 vocabulary in Week 13 than they did in Week 5 ( $p < .05$ ), and the participants used a smaller number of K3 vocabulary in Week 9 ( $p < .05$ ) and Week 13 ( $p < .05$ ) respectively.

The ANOVA showed another main effect of the Time factor (e.g., Week 5, Week 9, and Week 13) on LSs, an index of how sophisticated the lexical use was among the participants. The mean difference was statistically significant:  $F(2, 16) = 9.61$ ,  $MSE = .02$ ,  $p < .01$ ,  $\eta p^2 = .55$ . In order to seek where the significant difference existed between times of writings, a post hoc analysis (Bonferroni) was conducted. It was found that participants used a smaller number of academic words in Week 9 ( $p < .01$ ) and 13 ( $p < .01$ ) than they did so in Week 5.

Another statistically significant difference was found: the number of sentences constructed in essays. The main effect on the Time factor (e.g., Week 5, Week 9, and Week 13) on Sentence Count had the following statistically significant mean differences among them:  $F(2, 16) = 6.02$ ,  $MSE = 80.17$ ,  $p < .05$ ,  $\eta p^2 = .43$ . Again, the pair-wise comparison done by Bonferroni revealed that the number of sentences constructed in Week 13's essay is significantly more than that in Week 5 ( $p < .01$ ). Furthermore, the other significant difference was also found among the mean frequencies of students' vocabulary used in essays. The main effect of the Time factor (e.g., Week 5, Week 9, and Week 13) on Mean Frequency was statistically significant,  $F(2, 16) = 5.42$ ,  $MSE = 1204E+12$ ,  $p < .05$ ,  $\eta p^2 = .40$ . The pairwise comparison with Bonferroni found that the mean frequency of vocabulary used in Week 13 was significantly more than that in Week 5 ( $p < .05$ ), indicating that participants used more common words in Week 13 as compared to Week 5. Other than the main effect of the Time factor on K1, K3, LSs, Sentence Count, and Mean Frequency, no statistically significant differences were observed. A main effect of the Proficiency factor nor interaction effects on any factors were also not found in our ANOVA results.

## Discussion

Our first research question asked whether L2 learners at a college-level EFL writing

course in Japan develop use of L2 vocabulary while being exposed to EMI lessons. The findings of the present study suggest that our participants had exploited more of easier words in writing through EMI lessons in a semester-long (i.e., 16 weeks) EFL course. First of all, the present study found the main effect of the “Time” factor on the amount of vocabulary from the K1 frequency band, the highest frequent vocabulary according to Corpus of Contemporary American English (COCA) and British National Corpus (BNC) frequency bands. In particular, the participants used 184.38 words ( $SD = 13.86$ ) in Week 13’s essay, which was significantly greater than that in Week 5 ( $M = 130.38$ ,  $SD = 19.62$ ,  $p < .05$ ). Secondly, in the case of vocabulary of the K3 frequency band, the participants used a significantly smaller number of words in Week 9 ( $M = 2.00$ ,  $SD = .49$ ,  $p < .05$ ) or Week 13’s essay ( $M = 2.21$ ,  $SD = .63$ ,  $p < .05$ ) as compared to that in Week 5 ( $M = 11.92$ ,  $SD = 2.32$ ). These findings safely lead to the conclusion that the participants in the current investigation seemed to increase their use of the highest frequent words (i.e., K1 vocabulary) after being exposed to EMI lessons in their writing course while they avoided the use of lower frequent vocabulary.

Interestingly, such tendencies remain a matter of debate when comparing to Goya (2016). In Goya (2016), similar to the present study, the proficiency did not influence productive knowledge development. Even so, participants showed a gradual increase of both different (Types) and difficult words (K4-K25 words) usage. What cannot be forgotten about Type is that, when tokens increase, so do Types. Even so, an increase of Type does not necessary indicates an increase of difficult words used; Their participants might have used more of easier words from the K1 band like our participants. In fact, the participants’ LVs (TTRs) over a semester were relatively static, which is so in our investigation as well (i.e., no statistically significant according the ANOVA). What was shown there was that the indices from particular weeks were greater than others at random, not a constant increase as the semester advances. In this sense, considering the methodological viewpoint, their participants might have exploited more K1 vocabulary which was bundled with other two frequency bands (e.g., K1, K2, and K3) as one unit in Goya (2016). No further discussion can be done unless a detailed distribution according to the

frequency bands is investigated.

The present study also sought a possible impact on lexical indices while being emerged in an EMI writing course. Our finding suggests that the participants constructed a greater number of sentences in their essay writing once exposed to EMI lessons. Specifically, the participants constructed more sentences in the Week 13 essay ( $M = 14.67$ ,  $SD = 1.13$ ) than they did in the Week 5 one ( $M = 9.21$ ,  $SD = 1.08$ ,  $p < .01$ ). Moreover, such lexical use became easier as the degree of difficulty indicated that the participants' use of sophisticated vocabulary index or LS, decreased from Week 5 ( $M = .10$ ,  $SD = .01$ ) to Week 9 ( $M = .04$ ,  $SD = .02$ ,  $p < .05$ ) and Week 13 ( $M = .03$ ,  $SD = .01$ ,  $p < .01$ ). In other words, as time of exposure to EMI lessons increased, the participants showed a gradual drop of difficult word use. This was envisaged in another index. According to the mean frequency of L2 vocabulary used in essays, the participants used more high frequent words in Week 13 compared to essays in Week 5 ( $p < .05$ ). Taken together, the participants used more of the less difficult words in their writing after being exposed to EMI lessons.

Likewise, the participants in Goya et al. (2011) did not show any lexical development in terms of LV and LD in their eight-week investigation. Yet, their LS showed changes in their vocabulary use (not constant development), especially among high advanced ESL learners. This implies that in order to enrich lexical complexity, more proficiency development may be necessary to reach successful development of productive skill in L2. As Henriksen (1999) contends, productive knowledge of L2 vocabulary gradually develops from partially to full-fledged along with the expansion of vocabulary size. Milton (2009) similarly points out the importance of the amount of exposure to L2 input, while others like Hulstijn and Laufer (2001) emphasizes an importance of cognitive engagement in order to prompt the development of productive L2 word knowledge. The latter view is shared with a new Course of Study (MEXT, 2018) announcing the importance of heavy engagement among English learners with tasks designed for deeper learning. Many if not all are united in their belief that a key for the development of productive skills is not only the size but also the way we tackle known vocabulary. None



theless, it seems reasonable to conclude that it may take a fairly long time until the EFL-learners' productive knowledge of L2 vocabulary develops.

### **Lexical Fluency Development in EMI Lessons**

Overall, our findings such as a greater increase of easy word usage and the number of sentences constructed, may collectively suggest that EFL learners may benefit in developing lexical fluency not complexity through EMI lessons in a semester-long (i.e., 16 weeks) EFL writing course. This is not surprising when considering the previous findings. Similar to our finding, Knoch et al (2015) found fluency development among 31 ESL students in their three-year long study in an Australian university. Their participants wrote a 30-minute argumentative essay in a pre-post test research design. The study attributed such development to the fact that the instructors gave comments exclusively on the content in the participants' essays. Furthermore, the study failed to observe the development of lexical complexity, along with other writing skill components in L2, although the participants were exposed to EMI lessons for a longer period of time. This was interesting since, unlike in Knoch et al. (2015) and the present study, other studies did not find any development of productive skills while participants were exposed to EMI lessons for two to four years in Turkey (Cosgun & Hasirci, 2017) and Spain (Ament & Prez-Vidal, 2015). Yet, if they had looked into any aspects of the fluency component (e.g., number of sentences, mean length of sentences, and amount of vocabulary in frequency bands) in L2 vocabulary use, a similar conclusion might have been drawn from their investigation when considering the duration of the EMI the participants were exposed to between their studies (Ament & Prez-Vidal, 2015; Cosgun & Hasirci, 2017; Knoch et al., 2015) and our study. Nonetheless, EFL learners may benefit in fluency development of L2 vocabulary use while in EMI lessons.

This question then naturally arises: how do we help our learners fully develop their productive knowledge of L2 vocabulary? As mentioned in the earlier section, this has been discussed in the field (e.g., Henriksen, 1999; Hulstijn & Laufer, 2001; Milton, 2009). What is important in EMI for the successful development of productive knowl

edge in L2 is, as was pointed out in Cosgun and Hasirci (2017), a clear objective and feedback from the EMI lessons. Despite the fact that an EMI's goal is not to give instructions in a foreign language explicitly, students could benefit from receiving continuous explicit instruction and feedback on the accuracy and appropriacy of their foreign language use. At the same time, what needs to be kept in mind among foreign language instructors is that they must show the explicit purpose of their lessons to their learners (Torikai, 2017). It is often acknowledged that teaching content through EMI tends to lead to much confusion among L2 learners due to a vague focus of the lessons and whether they focus on content learning or language learning. Even instructors might fall into a sense of wondering whether they are teaching content or a foreign language (Torikai, 2017). As was pointed out in many publications, what is necessary in EMI lessons is, simply put, to give clear instructions based on explicit goals and feedback.

Many studies suffer from different caveats in terms of both theories and methodologies, and our study is not an exception to that point. In order to reconfirm what has been found in our study, a control group is necessary. In order to control the effect of EMI on our lesson plans, we need to carefully craft research design and control irrelevant variables. Furthermore, defining productive knowledge and skills is not as simple as was done in our study. In fact, the lexical competence is not the only component that consists of foreign language competency. In a future study, especially when dealing with oral production, all of the above need to be addressed with careful consideration. Nevertheless, to recapitulate the whole, the development of productive knowledge of L2 vocabulary is a longer process in our L2 learning; it is not surprising that our semester long study did not observe any noticeable change in other aspects rather than fluency.

### **Pedagogical Implication**

With commonly shared practices and our findings in mind, we arrive at a few pedagogical suggestions. In order to help grow students' productive knowledge in a form of writing in an EFL context, we should not overlook learning goals when having students engage with writing activities. If students are notified with explicit goals for

writing (or assessment criteria), they will strive to meet the requirements given. More importantly, the goals should be consistent with a specific form of activity, and students should be constantly reminded of these goals during the semester. Students will develop specific skills consciously and subconsciously with clear goals of the task in mind. Furthermore, time constraints may narrow students use of lexical items in their writing; therefore, instructors need to give them a sufficient amount of time for assignments so that they can reconsider their lexical use which will eventually enrich its use. More importantly, instructors may need to allow students to use a dictionary, which will augment opportunities for input encounters and enrich their partial knowledge of learned vocabulary during the writing task. Creating a word list of difficult words (i.e., low frequent vocabulary or academic words) will also ensure students challenge themselves to use more words in their writing.

### **Conclusion**

Currently, English teachers in Japan at senior high schools are required to manage English lessons exclusively in English to meet what the Course of Study for Senior high schools requires (MEXT, 2009; 2108). Therefore, foreign language teachers, especially English teachers in most cases, will be heavily involved in EMI lessons regardless of the teachers' preferences and pedagogical policies. Our one semester-long study suggests that EMI lessons at an EFL writing course at a Japanese college may be effective on the productive skill development, especially for lexical fluency, but not for lexical complexity. With a clear idea of what EMI works for, we as foreign language instructors need to carefully practice EMI lessons not because we are required to by others, but because we believe EMI lessons are effective for the development of productive skills, especially lexical fluency, among our EFL learners.

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# EFL環境における内容中心の教授法(CBI)の効果について： 英語による英語の授業は日本人学習者の語彙産出の向上につ ながるのか

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## 論文要旨

近年、内容中心の学習方法(Content-based Instruction, CBI)が効果的な英語教授法の一つとして注目を集めている。これは英語による英語の授業(English Medium Instruction, EMI)を通じて内容を学びつつ、コミュニケーション能力の育成が目的とされており、現行の学習指導要領で明示されているように、高等学校における英語の授業は英語で行うことが求められている(文科省, 2009; 2018)。本研究ではEMIによる英語の授業の効果の調査を目的として、コミュニケーション能力の構成要素(Canale, 1983)である語彙知識の向上、特に産出能力の向上について分析した。参加者は日本の大学に在籍する日本人英語学習者10名で、1学期間(16週)のEMIによるライティングの授業に参加した。参加者は第5週目、第9週目、そして第13週目にTOEFLによる英作文の課題を受け、本研究ではそれを学習者コーパスとしてまとめ、産出された語彙の様々な指標に対し量的な分析を行った。2元配置分散分析の結果によると、K1レベルの高頻出語彙の使用が増加し産出された文の数も増加したが、アカデミック語(Nation, 2001)のような低頻出語彙の使用の割合は減少した。このことからEMIによる英語の授業は、英語学習者の流暢な語彙使用に寄与する可能性があるが、その複雑さについてはあまり効果がみられない可能性を示した。