

Motivation in English Medium Instruction Classrooms from the Perspective of Self-determination Theory and the Ideal Self

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Abstract

This study investigates student motivation in an English as a Medium of Instruction (EMI) environment at a Japanese university within the frameworks of self-determination theory and the L2 motivational self system. It explores (a) relationships between motivational regulations towards EMI, motivation to learn English, and motivation to learn content; (b) factors that influence motivational regulations towards EMI; and (c) different tendencies between a high motivation group and a low motivation group. The results indicate that attitude towards learning English and the ideal L2 self strongly influence intrinsic motivation in EMI, supported by perceived competency when compared to motivation to learn content. Significant differences were identified between the high and low motivation groups in their understanding, EMI self-study time, and motivational factors. These results imply that students who have a positive attitude towards learning English, imagine their ideal selves as English speakers, and have higher perceived competency are more motivated in EMI. Finally, educational implications and suggestions for future research are provided.

Keywords: motivation, English as a medium of instruction, self-determination theory, ideal L2 self

Introduction

Motivation research concerning learning English among Japanese students has mostly been conducted in language classrooms. However, as English has become a de facto international language, it is now used as a medium for teaching subjects such as sociology, biology, and political science. Nevertheless, motivation in English as Medium of Instruction (EMI) contexts has not been sufficiently explored. Thus, this paper reports on an exploratory study that aimed to understand student motivation towards EMI and the role of motivation to learn English in such context.

English as a Medium of Instruction

Internationalization in higher education has been prioritized due to the impact of rapid globalization; EMI has subsequently been adopted worldwide as a means to accelerate this internationalization process (Ota, 2011). EMI originated in Europe during the 1950s, where it

was practiced solely in graduate schools in certain countries, such as Sweden, Denmark, and Turkey (Coleman, 2006). However, it has been a global phenomenon at the undergraduate level, including at Japanese universities, since the 2000s (Chang, 2010; Chen & Kraklow, 2014; John & Linder, 2008; Ota, 2011).

According to Dearden (2014), EMI entails using the English language to “teach academic subjects in countries or jurisdictions where the first language of the majority of the population is not English” (p. 4). Further, she asserts that EMI differs from Content and Language Integrated Learning (CLIL) in three respects. First, CLIL is based on EU educational policy, wherein citizens are taught two languages in addition to their mother tongue (Watanabe, Ikeda, & Izumi, 2011), whereas EMI is not based on any educational policies. Second, the teaching of content and language together is a required objective in CLIL; however, in EMI language teaching is not necessarily an objective. Third, in CLIL the language of instruction is not always English, whereas in EMI it must be English.

EMI in Japanese Universities

In Japanese universities, EMI classes are those that rely solely on English as a medium of instruction, and whose course objectives do not entail learning English (MEXT, 2014). EMI was initiated as a means to send Japanese students abroad so as to prepare them to succeed in a globalized world. The number of universities offering EMI undergraduate courses, either in part or in full, has grown rapidly due to the pressures of internationalization discussed earlier. In addition, the adoption of EMI was a criterion for evaluating universities in the Super Global Initiative, which was introduced by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) in 2014. Thus, it is clear that EMI will become even more common in Japanese universities, and a strong push towards internationalization on campuses has caused most institutions to assume EMI’s effectiveness, and subsequently to introduce it into their curricula. Nevertheless, no empirical studies have been conducted in the Japanese context, and therefore the impact of EMI on Japanese students remains unknown.

Preliminary Study

To understand the situation of EMI and its problems from a student motivational perspective, we conducted a preliminary study (Kojima, in press). Data were collected through surveys and interviews. The survey participants were 44 Japanese university students, and the interview participants were five of these who agreed to be interviewed. The results had the following three main implications. First, students struggled to understand the lectures in English. Students reported understanding only half of the lectures, and some had lost their motivation to study for EMI because they did not understand the lectures or the textbook. This suggested that poor understanding of lectures may have some connection to student motivation in EMI. Second, EMI motivation, motivation to learn English, and motivation to learn content appeared to be related. Participants valued improving their English and learning content. However, according to the interview data, three of the five students placed greater emphasis on improving their English, whereas one participant focused on learning content. Another participant mentioned that she thought her lack of background knowledge was one reason why she performed poorly in EMI and eventually lost

her motivation for EMI. Nevertheless, both the participants who placed greater emphasis on learning English and on learning content in EMI possessed motivation to learn both English and content. Considering all the results together, the relationship between motivation towards EMI, motivation to learn English, and motivation to learn content can be depicted as in Figure 1.

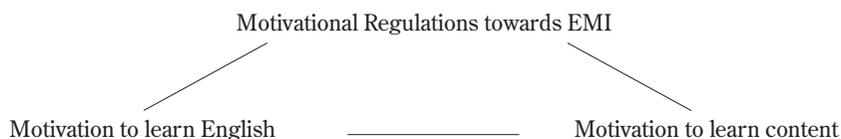


Figure 1. Three types of motivation in EMI investigated in this study.

Finally, about half of the participants in the preliminary study came to class merely to fulfill a prerequisite for graduation, reporting that the lectures were too demanding for them to understand. This suggests that difficulties in understanding the lectures and the textbook made EMI an obligation rather than a choice. On the other hand, there were some students who were more autonomous and self-determined in taking EMI, such as those who studied for EMI for an average of four hours per week because they perceived English as important for their success in the global world. These results indicated there is a variation in the degree of self-determination in students' motivation as suggested in Self-determination theory (SDT) (Deci & Ryan, 1985). Further, it is possible that students' ability to imagine their future selves using English or their ideal L2 selves (Dörnyei, 2005) was somehow related. Based on these assumptions, we conducted the current research using the L2 motivational self system (Dörnyei, 2005) and self-determination theory (SDT) (Deci & Ryan, 1985) as frameworks. We applied these frameworks in this research to investigate in detail the relationships among motivational regulations towards EMI, motivation to learn English, and motivation to learn content. In the following section, we review the L2 motivational self system and SDT.

Background

The L2 Motivational Self System

The L2 motivational self system was developed by Dörnyei (2005) based on two psychological theories, namely the theory of possible selves (Markus & Nurius, 1986) and self-discrepancy theory (Higgins, 1987). According to Markus and Nurius (1986), possible selves include what one would like to become, could become, and is afraid of becoming. Self-discrepancy theory (Higgins, 1987) proposes the ideal self as a representation of the qualities that one ideally possesses, and the ought self as a representation of the attributes one believes one should possess. The ideal and/or ought self each works as a self-guide when one is trying to reduce the discrepancy between one's actual self and one's ideal or ought self.

Dörnyei (2005) applied these theories and postulated the L2 motivational self system as a motivational theory in SLA that comprises three components, namely the ideal L2 self, ought-to L2 self, and L2 learning experience. The ideal L2 self is the representation of one's ideal self as an L2 speaker. Dörnyei (2009) suggested that if one's ideal self speaks the L2, that image

can be a great motivator in learning a language, as one attempts to minimize the distance between one's ideal and actual selves as an L2 speaker. Therefore, learners who can imagine their ideal selves as L2 speakers clearly and vividly are more motivated in language learning. On the other hand, the ought-to L2 self is "the representation of the attributes that one believes one should possess to meet expectations or to avoid negative outcomes" (Dörnyei & Ryan, 2015, p. 87). The third component of the theory is L2 learning experience, whereby the immediate language learning experience and learning context to some extent affect students' motivation in language classrooms (Dörnyei, 2005).

The L2 motivational self system has remained popular among SLA researchers since its inception in 2005 (Henry, 2015; Malcom, 2013; Taguchi, Magid, & Papi, 2009). Some prior research focusing specifically on Japanese learners has revealed positive correlations between students' ideal L2 selves and their degree of motivation to learn English (Maekawa & Yashima, 2012; Nishida, 2013; Ryan, 2009), as well as between their ideal L2 selves and their attitude towards learning English (Ryan, 2008; Taguchi, Magid & Papi, 2008).

Self Determination Theory

SDT regards humans as having an innate tendency to self-regulate their own behaviors and to engage with others to grow, but this tendency can either develop or be a hindrance, depending on the social context (Ryan & Deci, 2002). Within this theory, Deci and Ryan (1985) broadly categorize human motivation in terms of two categories, namely intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to a desire to perform an activity that elicits pleasure, excitement, or satisfaction, and therefore differs significantly from extrinsic motivation. In contrast, extrinsic motivation involves performing a given action to achieve a specific goal or purpose (Ryan & Deci, 2002).

Ryan and Deci (2000) describe in detail different types of human motivation as a second sub theory, namely the organismic integration theory (OIT). Within the OIT, they hypothesize intrinsic motivation, four forms of extrinsic motivation, and amotivation, depending on the degree of self-determination (see Table 1). Amotivation entails the state of lacking the intention to act because one does not value conducting the activity or does not feel competent to do so. In terms of extrinsic motivation, the least self-determined form is external motivation, which involves performing an action for a reward or to avoid punishment, such as attending a class to gain necessary credits. The second type of extrinsic motivation is introjected regulation, which is more internalized than external regulation. It entails carrying out an activity with the hope of receiving compliments from others, or to avoid feeling guilty for not performing a certain task. Identified regulation is a more mature form of extrinsic motivation, involving the individual's recognition of the value of an activity so as to achieve key goals (Ryan & Deci, 2002). Finally, integrated regulation is the most internalized form of extrinsic motivation, and entails the performance of activities that are in harmony with one's identity.

Furthermore, SDT proposes that one's intrinsic motivation is fostered when three basic human psychological needs are fulfilled, namely perceived competence (i.e., a sense of fulfillment and achievement), autonomy (i.e., a sense of self-governance), and relatedness (i.e., a sense of having secure and trustworthy relationships with others).

Procedure

Questionnaire surveys were conducted among students in nine courses taught by seven different instructors between late April and early July 2015. Surveys were administered half way through the course during class time or after class. Due to the semester and quarter system employed by the university, the timing of the surveys varied. Specifically, four surveys were completed in the first-quarter courses in late April and early May, one during the spring semester in late May, and the remaining four during the second quarter in late June and early July. The classes' contents were varied, including topics such as Cultural Studies, Sociology, International Relations, Communication Studies, Intellectual History, and Popular Culture Studies. All the classes in this study were presented in the form of lectures, with a maximum class size of 250 students. Some classes had more than 200 students, and some only around 50 students. Class materials and assessments depended on the assigned teachers. Some teachers used articles and/or book chapters, and others assigned an English textbook. Six of the surveys were conducted by the first author, and three were conducted by the content teachers in their respective courses. Student participation was voluntary and anonymity was maintained.

Materials

For the purpose of the present study, several measures were either adopted or adapted from previous research. Most of the items explained below, except self-perceptions of their understanding of EMI, average weekly self study time for the relevant EMI, and self-reported TOEFL-ITP scores, were rated using a six-point Likert scale.

Motivational regulations towards EMI based on self-determination theory. To investigate the motivational regulations involving EMI, a Japanese version of the intrinsic motivation, extrinsic motivation, and amotivation subscales of language learning orientations based on research conducted by Noels et al. (2000) was used. The items were adapted from Hiromori and Tanaka (2006) and Yashima et al. (2009); minor changes were made for the EMI context (e.g., "English" was replaced with "EMI").

Amotivation, intrinsic motivation, and extrinsic motivation. To assess the level of self-regulation in EMI, three items (Cronbach's $\alpha = .81$) served to assess amotivation (e.g., "I don't understand why I have to study in EMI"); two items (Cronbach's $\alpha = .72$) were used to reflect intrinsic motivation (e.g., "EMI is exciting"); two items (Cronbach's $\alpha = .78$) measured external regulation (e.g., "I am taking EMI because I want to get enough credits to graduate"); and three items (Cronbach's $\alpha = .80$) were adapted for identified regulation (e.g., "I want to acquire disciplinary knowledge in English for use in the future"). Items that attempted to measure introjected regulation were deleted because of a low Cronbach's α . Integrated regulation was not measured, as items to assess identified and integrated regulation were too similar to evaluate these differently in an EMI context.

Perceived autonomy, competence, and relatedness. Three items in each subscale functioned to measure the degree of fulfillment of the three psychological needs that influence intrinsic motivation. Three items (Cronbach's $\alpha = .76$) were applied to measure autonomy (e.g., "Teachers in EMI ask for the students' opinions about the content and/or procedure of the class"); three (Cronbach's $\alpha = .70$) assessed competence (e.g., "I feel a sense of

accomplishment in EMI”); and three (Cronbach’s $\alpha = .75$) reflected relatedness (e.g., “I get along with my classmates in EMI”).

Motivation to learn English. Six items (Cronbach’s $\alpha = .79$) from Ryan (2008) and Yashima (2002) involving motivational intensity were used to measure motivation (e.g., “If English were not taught in school, I would try to go to English classes somewhere else”). Participants were required to indicate the degree to which each statement correlated with their state of mind.

Attitude towards learning English. Four items (Cronbach’s $\alpha = .80$) reflected participants’ attitudes towards learning English (e.g., “I really enjoy learning English”). These items were taken from Ryan (2008).

Ideal L2 self. Six items (Cronbach’s $\alpha = .85$) were taken from Ryan (2008) to assess how vividly a participant could visualize his/her future ideal self as an English speaker (e.g., “I often imagine myself as someone who is able to speak English”).

Ought-to L2 self. Four items (Cronbach’s $\alpha = .64$) were taken from Ryan (2008) to measure participants’ beliefs regarding what they could become (e.g., “Hardly anybody really cares whether I learn English or not”). Two items were omitted in order to retain a higher Cronbach’s α .

Motivation to learn content. Six items (Cronbach’s $\alpha = .89$) were used to measure participants’ motivation for learning content. These items were adapted from Ryan (2008) by making minor modifications to match the present study (e.g., “English” was replaced with “this subject,” as in “I often think about this subject or the content that I learned from this class”).

Self-evaluation of background knowledge. Two items (Cronbach’s $\alpha = .64$) were used to assess participants’ background knowledge concerning the content that they were studying when the survey was conducted. We created these items based on the preliminary research. Pilot surveys were administered to five participants and subsequently revised according to their feedback (e.g., “I already had a lot of knowledge related to this subject before taking this course”).

In addition to the above data, based on what we learned from the preliminary study, such as possible effects of students’ poor understanding of EMI lectures on student motivation, participants’ self-perceptions of their understanding of EMI, average weekly self study time for the relevant EMI, and self-reported TOEFL-ITP scores were also recorded. Participants were asked to write down their latest TOEFL-ITP score, and 200 of the 221 participants did so.

Analysis

Analysis was performed using SPSS 23. To answer the first research question, which focused on students’ motivational tendencies in learning English and learning content, we verified the descriptive statistics for each factor and identified correlations between them. As for answering the second and third research questions, regression analyses were conducted. Finally, cluster analysis was performed to investigate groups with different profiles.

Results

To answer the first research question (i.e., what are the relationships among motivational

regulations towards EMI, motivation to learn English, and motivation to learn content in an EMI context at a Japanese university), general statistics and correlation analyses were conducted (see Table 2). Regarding TOEFL-ITP scores, the mean score was 474.59 ($SD = 42.15$), the highest 600, and the lowest 310.

Correlation analysis was carried out to understand the relationship between motivational variables for learning English and for learning content (see Table 3 and Table 4). As indicated in Table 3, motivational variables for learning English (i.e., motivation to learn English, ideal L2 self, ought-to L2 self, attitude towards learning English) correlated either highly positively or positively with each other, thus confirming the results of Nishida (2013), Ryan (2008), and Taguchi et al. (2009). A positive correlation was found between motivation to learn English and to learn content ($r = .37, p < .001$), although it was not strong. Motivation to learn content and self-evaluation of background knowledge also correlated positively ($r = .39, p < .001$). As Table 4 shows, motivation to learn English correlated positively with EMI intrinsic motivation ($r = .53, p < .001$) and EMI identified regulation ($r = .53, p < .001$). The ideal L2 self also correlated positively with EMI intrinsic motivation ($r = .56, p < .001$), and strongly and positively with EMI identified regulation ($r = .69, p < .001$). Attitude towards learning English correlated positively with EMI intrinsic motivation ($r = .54, p < .001$).

Table 2

Mean Scores and Standard Deviations for Motivational Regulation of EMI, Motivational Variables for Learning English, Motivational Variables for Learning Content, Self-evaluation of Background Knowledge, Understanding of Lectures, and Self-Study Time

	Variable	<i>M (SD)</i>
Motivational regulations for EMI	Amotivation	2.56 (1.16)
	External regulation	4.10 (1.43)
	Identified regulation	4.09 (1.23)
	Intrinsic motivation	3.79 (1.26)
Motivational variables for learning English	English learning motivation	4.02 (.89)
	Attitude towards learning English	4.34 (1.00)
	Ideal L2 self	4.54 (1.05)
	Ought-to L2 self	4.41 (.96)
Motivational variable for learning content	Content learning motivation	3.14 (1.06)
Self-evaluation of background knowledge	Self-evaluation of background knowledge	2.36 (1.06)
Understanding of lectures (%)	Understanding of lectures	52.27 (20.10)
Weekly self-study time (minutes)	Self-study time	88.40 (111.63)

Table 3

Correlations Between Motivational Variables for Learning English, Motivational Variables for Learning Content, and Self-evaluation of Background Knowledge

		English learning motivation	Attitude towards learning English	Ideal L2 self	Ought-to L2 self	Content learning motivation
Motivational variables for learning English	English learning motivation					
	Attitude towards learning English	.72**				
	Ideal L2 self	.68**	.64**			
	Ought-to L2 self	.30**	.35**	.54**		
Motivational variables for learning content	Content learning motivation	.37**	.23**	.27**	.10	
	Self-evaluation of background knowledge	.13	-.04	.02	-.13	.39**

Table 4

Correlations Between Motivational Regulations of EMI, Motivational Variables for Learning English, and Motivational Variables for Learning Content

		Motivational regulations of EMI			
		Intrinsic motivation	Identified regulation	External regulation	Amotivation
Motivational variables for learning English	English learning motivation	.53**	.53**	-.24**	-.39**
	Attitude towards learning English	.54**	.49**	-.25**	-.30**
	Ideal L2 self	.56**	.69**	-.20**	-.33**
	Ought-to L2 self	.30**	.41**	.01	-.05
Motivational variables for learning content	Content learning motivation	.39**	.38**	-.12	-.15*
	Self-evaluation of background knowledge	.11	.05	-.04	.20**

To answer the second research question (i.e., what are the factors that influence students' highly self-determined types of motivation, namely intrinsic motivation and identified regulation in English?), two stepwise multiple regression analyses were conducted¹. In the first analysis, the dependent variable was intrinsic motivation, and the independent variables were motivation to learn English, ideal L2 self, ought-to L2 self, attitude towards learning English, TOEFL-ITP score, motivation to learn content, understanding of lectures, and average weekly self-study time. In the second analysis, the dependent variable was identified regulation, and the independent variables were the same as for the first multiple analysis (see Tables 5 and 6). The strong predictors for intrinsic motivation were attitude towards learning English, $\beta = .311$ ($p < .001$); ideal L2 self, $\beta = .297$ ($p < .001$); and motivation to learn content,

$\beta = .221$ ($p < .001$). The strong predictors for identified regulation were L2 ideal self, $\beta = .63$ ($p < .001$) and motivation to learn content, $\beta = .22$ ($p < .001$).

Table 5

Results of Multiple Regression Analyses Predicting Intrinsic Motivation in EMI

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>
Attitude towards learning English	.39	.09	.31***
Ideal L2 self	.36	.09	.30***
Content learning motivation	.26	.07	.22***
<i>R</i> ²		.41***	

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 6

Results of Multiple Regression Analyses Predicting Identified Regulation in EMI

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>
Ideal L2 self	.74	.06	.63***
Content learning motivation	.25	.06	.22***
<i>R</i> ²		.51***	

* $p < .05$. ** $p < .01$. *** $p < .001$

To answer the third research question (i.e., which psychological needs in the SDT framework influence students' intrinsic motivation in EMI), a multiple regression analysis was conducted. The results showed that competence was a useful factor in predicting participants' intrinsic motivation in EMI (see Table 7)¹.

Table 7

Results of Multiple Regression Analysis Predicting Intrinsic Motivation

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>
Perceived competence	.66	.07	.54***
<i>R</i> ²		.29***	

* $p < .05$. ** $p < .01$. *** $p < .001$

A cluster analysis was employed in answering the fourth research question in order to determine whether participants with different motivational profiles could be identified based on motivation to learn English and motivation to learn content. Hierarchical cluster methods were applied using Euclidean distance. A dendrogram indicating the hierarchical clustering structure was used to determine cutoff points. Three clusters were subsequently identified: Cluster 1 (119 participants), Cluster 2 (58 participants), and Cluster 3 (44 participants). ANOVA confirmed that there were significant profile differences between motivation to learn English and motivation to learn content among the clusters; ANOVA was also used to identify statistically significant differences between the clusters (see Table 8 and Figures 2 and 3). As shown in Table 8, significant differences were found, particularly for intrinsic motivation, ($F(2,216) = 15.36$, $p < .001$, eta-squared = .13); perceived competency, ($F(2,214) = 18.18$, $p < .001$,

eta-squared = .05); perceived autonomy, ($F(2,214) = 13.55, p < .001, \eta^2 = .11$); and self-evaluation of background knowledge, ($F(2,218) = 13.10, p < .001, \eta^2 = .11$).

Statistically significant differences between Cluster 3 (see Figure 3), the group with the highest score, and Cluster 2, the group with the lowest score, were found for attitude towards learning English, ($F(2,218) = 7.24, p < .01, \eta^2 = .06$); ideal L2 self, ($F(2,214) = 10.48, p < .001, \eta^2 = .09$); identified regulation, ($F(2,217) = 17.39, p < .001, \eta^2 = .14$); and perceived relatedness, ($F(2,217) = 5.21, p < .01, \eta^2 = .05$).

Furthermore, as Table 9 and Figure 4 show, statistically significant differences were identified for self-perception of understanding of EMI, ($F(2,208) = 7.36, p < .01, \eta^2 = .07$); and weekly self-study time for EMI, ($F(2,208) = 15.01, p < .001, \eta^2 = .13$). Considering the data in Tables 8 and 9, the results of the cluster analysis are in line with Vallerand and Bissonnette's (1993) research, which showed that self-determined types of extrinsic motivation, such as identified regulation, correlate positively with persistent behavior. However, there was no significant difference in TOEFL-ITP scores among the three clusters.

Table 8

Comparisons of Means and Standard Deviations for Intrinsic/Extrinsic Motivation and Psychological Factors Among the Clusters

		Cluster 1	Cluster 2	Cluster 3	Post-hoc (Tukey)
		Average Motivation	Low motivation	High Motivation	
Motivational variables for learning English	English learning motivation	3.99 (.76)	3.59 (.97)	4.69 (.73)	1-2, 1-3, 2-3
	Attitude towards learning English	4.38 (.87)	3.98 (1.14)	4.70 (.98)	1-2, 2-3
	Ideal L2 self	4.67 (.88)	4.03 (1.22)	4.87 (1.04)	1-2, 2-3
	Ought-to L2 self	4.47 (.85)	4.19 (1.09)	4.54 (1.02)	
Motivational variable for learning content	Content learning motivation	3.22 (.46)	1.85 (.46)	4.65 (.56)	1-2, 1-3, 2-3
Motivational regulations for EMI	Amotivation	2.52 (1.00)	2.82 (1.30)	2.31 (1.35)	
	External regulation	4.23 (1.29)	4.10 (1.45)	3.80 (1.70)	
	Identified regulation	4.21 (.92)	3.40 (1.51)	4.69 (1.13)	1-2, 2-3
	Intrinsic motivation	3.80 (1.10)	3.20 (1.35)	4.52 (1.21)	1-2, 1-3, 2-3
Three psychological needs in EMI	Perceived competence	3.31 (.88)	2.60 (1.05)	3.74 (1.07)	1-2, 1-3, 2-3
	Perceived autonomy	3.38 (.95)	2.86 (1.19)	3.98 (1.18)	1-2, 1-3, 2-3
	Perceived relatedness	3.95 (.91)	3.67 (1.27)	4.36 (1.13)	2-3

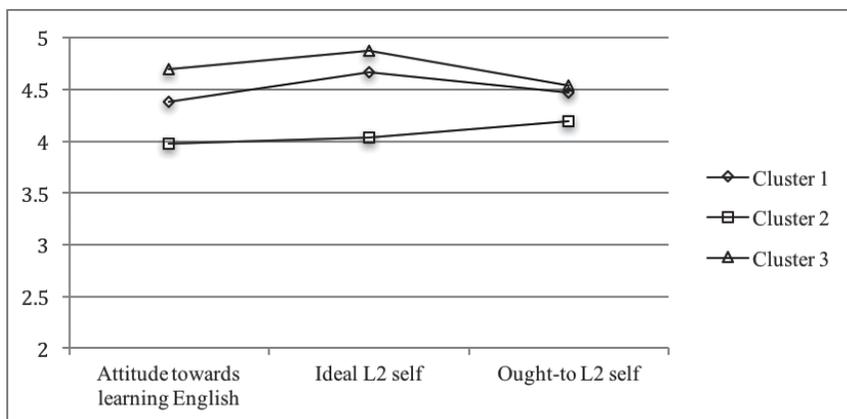


Figure 2. Motivational variables for learning English for each cluster.

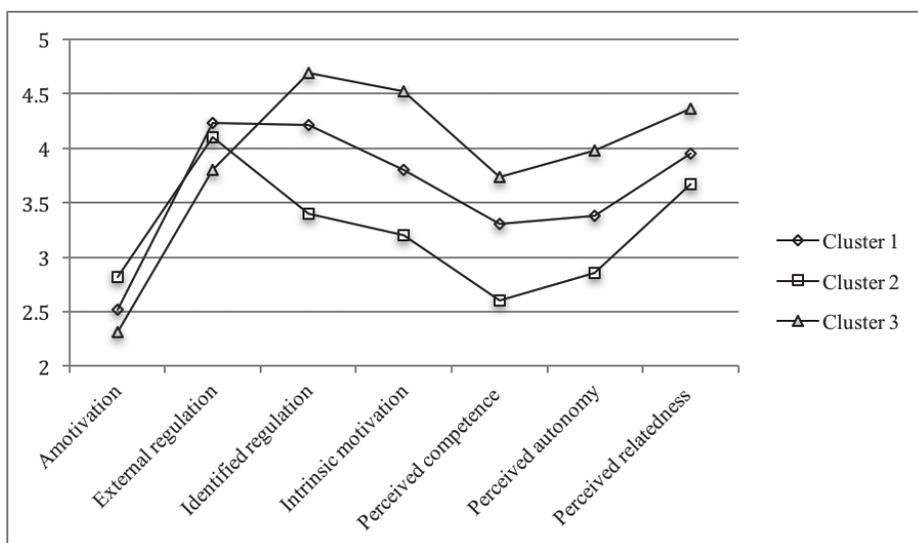


Figure 3. EMI motivational profiles for each cluster.

Table 9

Means and Standard Deviations for EMI Understanding and Self-study Time for Each Cluster

	Cluster 1	Cluster 2	Cluster 3	Post-hoc (Tukey)
	Average motivation	Low motivation	High motivation	
Understanding of lectures (%)	51.92 (19.91)	48.6 (20.31)	63.21 (17.17)	1-3, 2-3
Weekly self-study time (minutes)	77.28 (74.46)	51.89 (55.75)	163.72 (188.71)	1-3, 2-3
TOEFL-ITP score	471 (40.65)	470 (42.52)	489 (43.55)	

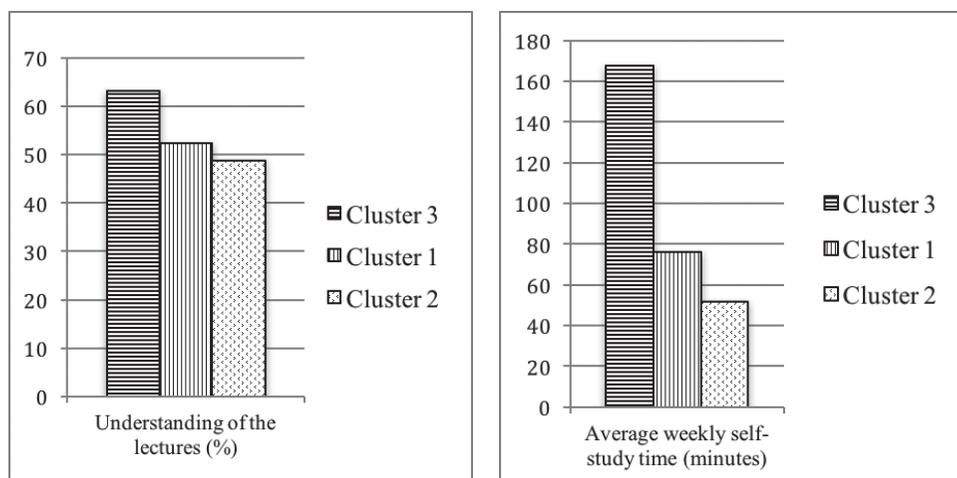


Figure 4. EMI understanding and self-study time comparisons for each cluster.

Discussion

This study investigated student motivation towards EMI and factors that influence such motivation (we refer to our preliminary research when necessary in order to expand the discussion).

Correlation analyses were conducted to answer the first research question (i.e., what are the relationships between motivational regulations towards EMI operationalized as intrinsic motivation and identified regulation in the SDT framework, motivation to learn English, and motivation to learn content?). The results revealed that participants highly motivated to learn English, possessed a positive attitude towards learning English, and clearly visualized their ideal selves as English speakers, were intrinsically motivated in EMI. In addition, participants interested in the content of EMI tended to enjoy it more. However, the results of the correlation analyses indicated that this relationship was less strong than that between motivation to learn English and the pleasure derived from learning in EMI.

Multiple regressions were carried out to confirm the results relevant to the first research question and to answer the second research question (i.e., what are the factors that influence students' intrinsic motivation and identified regulation towards EMI?). The results confirmed that motivation to learn English and to learn content influenced motivation towards EMI. Participants who exhibited positive attitudes towards learning English and had clear images of using it in the future were more intrinsically motivated in EMI. The participants' motivation to learn content also influenced the pleasure that they obtained from learning in EMI, although it was weaker than the influence of positive attitude towards English, or image of ideal selves as English users. We also investigated factors that influenced identified regulation, which is a highly self-determined type of extrinsic motivation. The results indicated that participants who vividly imagined themselves using English in the future considered EMI a necessary step to obtain their ideal jobs. Likewise, participants who desired to gain knowledge of content in EMI believed that EMI was important for career success. Nevertheless, the influence of motivation to learn content was not strong when compared to

the influence of the ideal L2 self. This indicates that students who perceive learning English positively and clearly imagine their future selves as English speakers obtain pleasure from learning in EMI, and/or consider it invaluable to achieve their career goals.

Furthermore, we explored the three psychological needs within the SDT framework that predicted intrinsic motivation towards EMI, which revealed that perceived competence was the key to motivate participants intrinsically; that is, participants were intrinsically motivated when they felt a sense of competence and achievement. Indeed, some participants in the preliminary study mentioned the importance of perceived competence as a motivator. For example, they were happy and wanted to study harder when they understood specialized content and scored higher on quizzes in EMI. To achieve this, students must understand lectures in English. This result reiterates that proficiency in academic English is essential to make students feel competent, and that language support can be beneficial to motivate student intrinsically in EMI.

Cluster analysis was conducted to identify groups of participants who differed in their motivational profiles, and understand the different tendencies among the profiles. Three types of learners were identified based on their motivation to learn English and motivation to learn content. Differences between the clusters were identified in self-study time, and understanding of EMI lectures, in addition to positive attitude towards learning English, ideal L2 self, and motivational regulations toward EMI. We infer that highly motivated students likely study before and/or after classes; consequently, they better understand content and feel a sense of achievement during classes. By extension, this motivates them even more intrinsically towards EMI, and causes them to be more active learners. In contrast, students with low motivation do not understand lectures, and therefore lack sufficient knowledge to complete assignments. As a result, their understanding of lectures worsens, and their motivation quickly diminishes. In fact, a participant in the preliminary study indicated that she initially attempted to complete her class homework, but found the lectures and textbook too difficult to comprehend. Despite having a TOEFL-ITP score over 550, she eventually lost interest in studying for EMI. However, no significant difference was found in the TOEFL-ITP scores of the clusters. This may be due to a lack of reliability in the data, as the participants' self reporting of their scores may have been inaccurate, and the time at which they took the test may have varied. Another interpretation may be that some students who are highly motivated but have lower TOEFL scores make a concerted effort with EMI to compensate for their lack of English competence.

Pedagogical Implications

Based on the result of the regression analysis (Table 7), perceived competence is important in making students intrinsically motivated in EMI. This means that students need to consider themselves competent in EMI, which requires that they understand lectures in English that help them to achieve better test scores and grades. To this end, they must acquire a sufficient degree of English ability to increase their understanding and performance in EMI. Thus, we believe that applying teaching practices from language pedagogies should make EMI more pleasurable and accessible to students. This might entail using worksheets with blanks to be filled, beginning lessons with pre-reading activities, and/or conducting small

group discussions. Equipping EMI instructors with facilitation skills and scaffolding techniques traditionally applied in language classrooms may also make EMI more understandable to Japanese learners.

Conclusion

This study explored student motivation in EMI environments using self-determination theory and the L2 motivational self system as frameworks. We determined that the ideal L2 self and attitude towards English strongly influenced enjoyment they gained from EMI, and self-determination to take EMI for their future careers. The results also demonstrated that perceived competence in three psychological needs in the framework of SDT was the key to motivate students intrinsically. Moreover, in comparing groups with high and low motivation in EMI, we discovered significant differences in psychological factors, self-study time, and perceived understanding of lectures. All in all, we highlighted the importance of motivation to learn English in EMI contexts. This is why language support and the application of teaching practices from language pedagogies could aid students in comprehending lectures, obtaining better grades, and increasing their motivation in EMI.

As limitations, it should be noted that the present participants included only art majors at a university in which EMI is compulsory. The results might have differed if the study had been conducted at a university in which EMI was among science majors and/or not mandatory. Also, all data were collected by means of a survey, and thus, employing alternative methods, such as interviews, journals, and observations, might be useful in order to gain a deeper understanding of student motivation. For example, Japanese student motivation may be influenced by them taking EMI together with international students. However, such environmental effects on EMI motivation were not considered in this study. Furthermore, we cannot be certain that our pedagogical suggestions will indeed motivate students. In order to expand on motivation research in EMI, empirical studies should be conducted that investigate the effectiveness of specific teaching approaches. Moreover, the authors analyzed surveys from seven different groups of students together, but various teachers may have different teaching experience, language proficiency, and personalities. Making empirical comparisons among data from different teachers could be a potential goal for future research. Despite these limitations, we feel that the results of this study indicate the importance of fostering motivation to learn English in EMI, and the possibility that language supports from language pedagogical perspectives can be a solution to motivate students and help them to comprehend lectures in English. To ensure the success of EMI at Japanese universities, it is essential to teach it in an accessible manner, thereby motivating the students.

Notes

ⁱWe assessed multicollinearity and did not find any problem.

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References

- Chang, Y. (2010). English-medium instruction for subject courses in tertiary education: Reactions from Taiwanese undergraduate students. *Taiwan International ESP Journal*, 2(1), 55–84.
- Chen, Y.-L. E., & Kraklow, D. (2015). Taiwanese college students' motivation and engagement for English learning in the context of internationalization at home: A comparison of students in EMI and non-EMI programs. *Journal of Studies in International Education*, 19(1), 46–64.
- Coleman, J. (2006). English-medium teaching in European higher education. *Language Teaching*, 39(1), 1–14.
- Dearden, J. (2014). *English as a medium of instruction – A growing global phenomenon*. Retrieved from www.teachingenglish.org.uk
- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, NJ: Erlbaum.
- Dörnyei, Z. (2009). The L2 motivational self system. In Z. Dörnyei, & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 9–42). Bristol: Multilingual Matters.
- Dörnyei, Z., & Ryan, S. (2015). *The psychology of the language learner revisited*. New York: Routledge.
- Henry, A. (2015). The dynamics of possible selves. In Z. Dörnyei, P. D. MacIntyre, and A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 83–94). Bristol: Multilingual Matters.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319–340.
- Hiromori, T., & Tanaka, H. (2006). Instructional intervention on motivating English learners: The self-determination theory viewpoint. *Language Education & Technology*, 43, 111–126.
- John, A., & Linder, V. (2008). Bilingual scientific literacy? The use of English in Swedish university science courses. *Nordic Journal of English Studies*, 7(3), 145–161.
- Kojima, N. (in press). Understanding the current situation of English as a medium of instruction (EMI): Motivational research in an EMI preparation course. *Doshisha University Annual Report of Center for Learning Support and Faculty Development*
- Maekawa, Y., & Yashima, T. (2012). Examining the motivational effect of presentation-based instruction on Japanese engineering students: From the viewpoints of the ideal self and self-determination theory. *Language Education & Technology*, 49, 65–92.
- Malcom, D. (2013). Motivational challenges for Gulf Arab students. In E. Ushioda (Ed.), *International perspectives on motivation* (pp. 98–116). London: Palgrave Macmillan.
- Markus, H., & Nuris, P. (1986). Possible selves. *American Psychologist*, 41(9), 954–969.

- Nishida, R. (2013). The L2 self, motivation, international posture, willingness to communicate and can-do among Japanese university learners of English. *Language Education & Technology*, 50, 43–67.
- Noels, K. A. (2001). Learning Spanish as a second language: Learners' orientations and perceptions of their teachers' communication style. *Language Learning*, 51(1), 107–144.
- Noels, K. A., Pelletier, L. G., Clément, R., & Vallerand. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. *Language Learning*, 50(1), 57–85.
- Ota, H. (2011). University internationalization trends and Japan's challenges and prospects: An East Asian comparative study. *Journal of Multimedia Education Research*, 8(1), S1-S12.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54–67.
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Suffolk: The University of Rochester Press.
- Ryan, S. (2008). *The ideal L2 selves of Japanese learners of English*. Unpublished Doctoral dissertation.
- Ryan, S. (2009). Self and identity in L2 motivation in Japan: The ideal L2 self and Japanese learners of English. In D. Zoltán, & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 120–143). Bristol: Multilingual Matters.
- Taguchi, T., Magid, M., & Papi, M. (2009). The L2 motivational self system among Japanese, Chinese and Iranian learners of English: A comparative study. In *Motivation language identity and the L2 self* (pp. 66–97). Bristol: Multilingual Matters.
- Tanaka, H. (2009). Enhancing intrinsic motivation in three levels: The effects of the motivational strategy. *JALT Journal*, 31(2), 227–250.
- Watanabe, Y., Ikeda, M., & Izumi, S. (2011). *CLIL (Content and language integrated learning) New challenges in foreign language education at Sophia University: Volume 1 principles and methodologies*. Tokyo: Sophia University Press.
- Yashima, T. (2002). Willingness to communicate in a second language: The Japanese EFL context. *The Modern Language Journal*, 86(1), 54–66.
- Yashima, T., Noels, K., Shizuka, T., Takeuchi, O., Yamane, S., & Yoshizawa, K. (2008). The interplay of classroom anxiety, intrinsic motivation, and gender in the Japanese EFL context. *Kansai University Journal of Foreign Language Education and Research*, 17, 41–64.