Japanese First-Year Engineering Students' Motivation to Learn English
日本人の工学部 1 年生が英語を学ぶ動機に関する研究

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Abstract (Japanese) 要旨

　　本研究の目的は、L2MSS のインストルメント（Dörnyei および Taguchi、2010）を Ryan(2008)による補足的尺度とともに使用しながら、Dörnyei（2005）の L2 Motivational Self System（L2MSS）の理論的な枠組みの中で、工学部一年生の日本人学生の英語を学ぶモチベーションを測定、調査し、その説明を試みることである。データの相関と回帰分析により、日本の環境において L2 Motivational Self System の三つの主要な構成要素のうち二つの有効性を実証するものとなった。「英語学習に対する態度（Attitudes Towards Learning English）」および「理想 L2 自己（Ideal L2 Self）」は、基準値である「意図される学習努力（Intended Learning Effort）」の予測因子であることが発見されたが、第三構成要素である「義務 L2 自己（Ought-to L2 Self）」は該当しなかった。発見された「意図される学習努力（Intended Learning Effort）」の四つの予測因子は、(1)「英語学習に対する態度（Attitudes Towards Learning English）」、(2)「言語的な自信（Linguistic Self-Confidence）」、(3)「理想 L2 自己（Ideal L2 Self）」、(4)「統合性（Integrativeness）」である。回帰分析に基づいたモデルが構築され、「意図される学習努力（Intended Learning Effort）」の四つの予測因子のうち二つの相関関係が示されている。その結果からの教育学的な意義が考慮され、当該学生の集団の L2 モチベーションを向上させる方法についての提案がなされている。

Abstract (English)

　　The goal of this study was to measure, examine, and attempt to explain the motivation to learn English of first-year engineering students in Japan within the theoretical framework of Dörnyei's (2005) L2[1] Motivational Self System (L2MSS), using the L2MSS instrument (Dörnyei & Taguchi, 2010), with additional scales by Ryan (2008). Correlation and regression analyses of the data provided empirical support for the validity of two of the three main components of the L2 Motivational Self System in the Japanese context. Attitudes Toward Learning English and the Ideal L2 Self were both found to be predictors of the criterion measure, Intended Learning Effort, but the third component, the Ought-to L2 Self, was not. Four predictors of Intended Learning Effort were found: Attitudes Toward Learning English, Linguistic Self-Confidence, the Ideal L2 Self, and Integrativeness. A model based on regression analyses was constructed and shows two reciprocal interrelationships among the four predictors of Intended Learning Effort. Pedagogical implications of the results are considered and suggestions are made for how to possibly increase the L2 motivation for this population of students.

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[1] L2 represents an additional language to the L1, the first language.

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Introduction

An internal, idealized vision of oneself as an English speaker, one's ideal L2 self, may have a motivational force strong enough to affect student behaviour and give students the energy needed for the years of study that language mastery requires (Dörnyei, 2005). The introduction of the concept of possible selves (Higgins, 1985, 1987; Markus & Nurius, 1986) to Dörnyei's (2005) framework of student motivation to learn a language has created great interest, particularly in the constructs of two possible selves: the Ideal L2 Self and the Ought-to L2 Self. The Ideal L2 Self is internally driven, and is based on a student's dreams and aspirations, while the Ought-to L2 Self is what a student thinks they "should" become in order to meet the expectations of people around them.

Recent studies in several countries have shown the viability of the Ideal L2 Self with various groups of learners, in Japan (Ryan, 2008; Taguchi, Magid & Papi, 2009), China (Dörnyei & Chan, 2013; Taguchi et al., 2009; You & Dörnyei, 2014), Hungary (Csizér & Kormos, 2009), Iran (Taguchi et al., 2009), Pakistan (Islam, Lamb & Chambers, 2013) and Chile (Kormos, Kiddle & Csizér, 2011). However, the importance of the Ought-to L2 Self is more tenuous and seems less cross-culturally robust, depending instead on the particular population studied.

In Japan, two recent major studies have been carried out with populations of Japanese university students, in different years of study and with a variety of majors. Ryan (2008) found via partial correlations that the Ideal L2 Self had a moderate correlation to his criterion measure of Intended Learning Effort but that the correlation of Ought-to L2 Self and Intended Learning Effort was weak. Taguchi et al. (2009) found through structural equation modeling that the Ought-to L2 Self in Japanese university students did contribute to Intended Learning Efforts, but that it was weaker than the Ideal L2 Self. Both Ryan (2008) and Taguchi et al. (2009) found that Attitudes to Learning English was the strongest contributor to Intended Learning Effort, and both found that it was much stronger than the Ideal L2 Self. Ryan (2008) and Taguchi et al. (2009) sampled Japanese university students that were categorized into two groups: English majors and non-English majors. While their results from studying the motivation of these two populations provide us with general strong support for the Ideal L2 Self and weak support for the Ought-to L2 Self in the Japanese university student population, little is known about sub-populations of Japanese university students.

One particularly important student subgroup is engineering majors. This population of students is vital to the future success of Japan's economy, which has been based on the exportation of technology and high tech products since 1960 (Trading Economics, 2016). Engineers are the principal creators of these technological products, and because of globalization and changes in the Japanese workforce, the need for Japanese engineering graduates to have good English communication abilities is increasing steadily (Apple, Falout & Hill, 2013; Nixon, 2015). Japanese engineers need to be able to communicate in English with their colleagues outside of Japan for research purposes and international projects (Apple et al., 2013) but Japanese companies have not developed an effective "interface" to the world, including the ability to communicate effectively in English (Newman, 2011). Economists who focus on Japan's globalization efforts state that the importance of making English the official company language of Japanese international companies cannot be overstated (Iwatani, Orr & Salsberg, 2011). Honda recently announced its intention to make English its official company language by 2020 (Honda Motor Co., 2015).

The need for English-speaking engineers is growing, yet in Japan, motivation to learn English is typically low (Berwick & Ross, 1989; Irie, 2003; Nakata, 2006) and ability to communicate in English is poor (MEXT, 2003; Nakata, 2006). This is despite six years of English instruction in school and a concentrated governmental policy focusing on improving the English communication ability of Japanese students that started in 2003 (MEXT, 2003) and continues to the present day (MEXT, 2011, 2014). Possible selves may affect student motivation and eventual proficiency (Dörnyei, 2005), but studies on how these possible selves affect the motivation of various groups of learners are still few in number. While two studies investigating the roles of possible selves in motivation have been done with Japanese university students (Ryan, 2008; Taguchi et al., 2009), no studies using the Ideal and Ought-to L2 Selves as constructs have yet been done with Japanese engineering majors as a subpopulation.

The lack of research on the motivation of Japanese engineering majors is regrettable because without understanding student motivation, we cannot hope to improve it. The purpose of this survey study is to investigate the effects of the Ideal L2 Self and the Ought-to L2 Self on the motivation of first-year Japanese engineering students to learn English. The criterion measure is Intended Learning Effort, a measure of motivation indicated by student intentions to learn English. Intended Learning Effort and 15 other variables associated with language learning motivation will be measured by using Dörnyei's (2005) L2 Motivational Self-System, with the addition of three new measures created by Ryan (2008). The motivation of these students to learn English will be explored using means comparison, correlations, and multiple regression.

Literature Review

Motivation to learn a language has been identified as one of the two main contributors to eventual language proficiency (Clément, 1980; Clément & Kruidenier, 1985; Gardner & Lambert, 1959), the other being language learning aptitude. Without motivation, students will not invest the time and make the effort required to learn a language, and even students with a strong aptitude for language learning will not progress without adequate motivation (Dörnyei & Ryan, 2015).

Low motivation of Japanese university students to learn English has been found in many studies (see, e.g. Irie, 2003; McVeigh, 2002; Nakata, 2006). Recent cross-cultural studies indicate that Japanese university students have lower motivation than university students in China (Taguchi et al., 2009; Yang & Kim, 2011), Iran (Taguchi et al., 2009), Korea (Yang & Kim, 2011), and Sweden (Yang & Kim, 2011).

Prior research suggests that Japanese university students are generally unmotivated to learn English because of anxiety due to inability to communicate in English, as well as fear of negative evaluation because of past negative experiences (Kimura, Nakata & Okumura, 2001). In addition, many Japanese students dislike English because of the way they were taught English in school, via a method called *yakudoku*, which is similar to the grammar-translation method (Kikuchi, 2013). In *yakudoku*-style classes, the teacher explains grammar rules in Japanese, students speak only when repeating English sentences after their teacher, and the main class activity is the verbatim translation of written English sentences into written Japanese sentences (Nishino & Watanabe, 2008). In *yakudoku*, there is no use of, nor even recognition of, English as a means of communication (Johnson & Brine, 2000).

In Japan, the main purpose of studying English in school is to pass tests (Kikuchi, 2013; McVeigh, 2002; Taguchi, Magid & Papi, 2009) with the ultimate goal being to pass university entrance exams, where the English score is given the highest weight (Butler & Iino, 2005;

Johnson & Brine, 2000). In general, Japanese students have had mainly external motivation as a reason to learn English (Irie, 2003). External pressure to study English drops a great deal when students pass the entrance exam and enter university, but English classes are compulsory for the first two years of university in Japan. For many students, English education is associated with "meaningless, unrewarded effort" (Ryan, 2009b, p. 416), after students have spent a great deal of time and effort on learning English, but possess little communicative ability (Nakata, 2006) to show for their efforts. Pressure on Japanese universities to drop entrance exams has been mounting in the past decade, especially because the number of university students is declining because of Japan's low birth rate, resulting in a shrinking population. Without entrance exams, English teachers could teach a more useful form of English, and make communicative English part of the curriculum. Students may find communicative English more interesting than *yakudoku* classes, and motivation and proficiency may rise as a result. However, if entrance exams continue to force teachers to teach to the test in Japan, English ability and motivation are unlikely to change.

Science and engineering majors in Japan are more likely to have had negative experiences learning English and are at greater risk for demotivation than other majors (Apple, Falout & Hill, 2013). Kimura et al. (2001) found that Japanese engineering majors had mainly extrinsic and pragmatic reasons for studying English and were less motivated than students majoring in other subjects. Thus, in a population of students that has low motivation to learn English, engineering students may be one of the least motivated groups. Studies have found that Japanese university students value English ability less and have a weaker Ideal L2 Self than students in other countries, for example in China and in Iran (Taguchi et al., 2009). While it is beyond the focus of this article to attempt to explain the motivation profiles of groups of learners in different countries, a comparison between university students in Japan and China may highlight some similarities and differences.

First, students in both countries are interested in traveling and making friends with people from L2 communities (Miyahara, Namoto, Yamanaka, Murakami, Kinoshita & Yamamoto, 1997, cited in Taguchi et al., 2009). However, according to past studies, Chinese students indicate a desire to integrate into the L2 community, whereas Japanese do not (Irie, 2003; Miyahara et al., 1997, cited in Taguchi et al., 2009; Yashima, 2000). Both groups of students have high levels of instrumental motivation. However, Chinese students see English ability as necessary to getting a good job in the future, whereas for Japanese students in general, it is presently of questionable benefit, and may be perceived as a non-essential asset (Taguchi et al., 2009). It may take time for major changes occurring now in the Japanese workforce (see below) to have an impact on student attitudes toward learning English. Finally, Chinese students appear to have a much stronger Ideal L2 Self than Japanese students (Taguchi et al., 2009), and there is a moderate correlation (.44) between Intended Learning Effort and Ideal L2 Self for Chinese students, whereas the correlation for Japanese students has been found to be weaker (.27). One explanation may be that Chinese students' desire to integrate into the L2 community helps to create and sustain an Ideal L2 Self image (Miyahara et al., 1997, cited in Taguchi et al., 2009).

While Japanese university students may think of English as a non-essential asset when it comes to getting a job, this is changing over time as Japan is being forced to globalize. The pressure on Japanese high tech companies to improve their competitiveness is increasing sharply, and as Japan's high tech products lose market share year after year, and the Japanese economy stagnates, article titles like "How Japan Lost its Electronics Crown" (Wakabayashi, 2012) and "The Era of Japanese Consumer Electronics Giants is Dead" (Cheng, 2012) appear regularly. Articles have also been written that detail the infrastructural moves that Japan's companies need

to make in order to increase their global competitiveness. For example, in "Japan's Globalization Imperative: Why are General Motors and Volkswagen More Successful in China than Honda and Toyota?" (Iwatani, Orr & Salsberg, 2011), one of the main recommendations is to make English the official language of international Japanese companies. Iwantani et al. write that the importance of improving English skills in a major globalization effort cannot be overstated. Some Japanese companies such as Rakuten (similar to Amazon) and Uniqlo, a clothing company, made English their official company language several years ago (Maeda, 2010), but Japanese high tech companies have yet to follow suit.

However, we are now seeing the first steps toward making English the official language of the entire Japanese high tech industry. For example, the well-known Japanese car manufacturing company Honda is the largest engine-maker in the world (Honda Engines, 2009), and cars made up 13% of Japan's exports in 2014, with car-related accessories making up another 10% (Atlas of Economic Complexity, 2014). In Honda's 2015 annual sustainability report (Honda Motor Co., 2015), we read the following:

> Honda is working on making English an official language by 2020 as a target. With the adoption of this initiative, when inter-regional communication takes place, information to be sent out will be in English. Documents to be used in meetings participated in by regional operation bases and communication for information-sharing will also be in English. As a part of this initiative, we strive to reinforce training programs to improve associates' English levels in Japan. English proficiency will be required for associates to be promoted to managerial positions in the future. (p. 70)

Two of Honda's (Honda Motor Co., 2015) four "global human resources management approaches" are enhancing global communications and making English an official language (p. 67). Other Japanese high tech companies are expected to follow suit. English ability is gradually becoming a requirement for getting a job in a big Japanese company (Nixon, 2015), as essential as it already is in China (Irie, 2003, Taguchi et al., 2009) and worldwide (Neeley, 2012).

Another reason that Japanese engineering majors need English ability is because it is necessary in order to get a good score on English proficiency tests like TOEIC or the TOEFL exam, required by many Japanese graduate schools. Graduate engineering students are expected to be able to read English research articles and make presentations in English.

The main reasons for Japanese engineering students to learn English described thus far are largely instrumental, and for many students, English may always be just a means to an end – English ability helping them to get a good job or to get into graduate school. But for others, the Ideal L2 Self may offer something else. Included in the Ideal L2 Self are positive visions of oneself as an English speaker - not only at work or in study, but for speaking English with foreigners, or living abroad and having a discussion in English (see Table 10 in the Appendix for items in the Ideal L2 Self scale). These activities relate to the use of English as a language, for communication in international situations, and in considering an Ideal L2 Self, we consider the student's relationship with English in a personal and idealized way. Research suggests that Japanese university students have mainly instrumental motivation for learning English. Does the Ideal L2 Self even exist in the subpopulation of Japanese engineering majors? If it does, how does it affect the motivation of these students to learn English? These questions will be investigated by using the framework of Dörnyei's L2 Motivational Self System (L2MSS) to explore the language learning motivation of this population of students.

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Language Learning Motivation

The focus in Dörnyei's (2005) L2MSS is on "possible selves" (Higgins, 1985, 1987, 1997; Markus & Nurius, 1986) as core motivators. These concepts are part of Higgins' self-discrepancy theory (1985, 1987) which postulates three possible selves: the ideal self[2], the ought self and the actual self. Linking possible selves to motivation, Markus and Nurius (1986), write, "Possible selves are the ideal selves that we would very much like to become. They are also the selves we could become, and the selves we are afraid of becoming, and thus provide a conceptual link between cognition and motivation" (p. 954).

Dörnyei himself focuses on the "ideal" and the "ought" (Higgins 1985, 1987) aspects of possible selves, which in relation to motivation for learning a language, Dörnyei (2005) named the "ideal L2 self" and the "ought-to L2 self" (see below). Dörnyei (2010) writes, based on Higgins (1987, 1998), "motivation involves the desire for people to reduce the discrepancy between their actual and ideal/ought selves" (p. 78). Students may have an ideal self image of themselves as speakers of a particular language, and their motivation to learn the language derives from the desire to realize that ideal self. Such students regulate L2 learning behaviour by setting goals and expectations (Dörnyei, 2009; Markus & Nurius, 1986) designed to bring about their goal.

The L2MSS consists of the following three components (Dörnyei, 2010):

1. Ideal L2 Self, which is the L2-specific facet of one's ideal self. If the person we would like to become speaks an L2, the ideal L2 self is a powerful motivator to learn the L2.
2. Ought-to L2 Self, which concerns the attributes that one believes one ought to possess to meet expectations and to avoid possible negative outcomes.
3. L2 Learning Experience, which concerns situated motives related to the immediate learning environment and experience (e.g. the impact of the teacher, the curriculum, the peer group, the experience of success). (pp. 79-80)

Higgins (1997, 1998) identified two forms of instrumental motivation: promotion and prevention that Dörnyei (2009) incorporated into the L2MSS. Instrumentality - Promotion (hereafter Promotion) is associated with "hopes, aspirations, advancements, growth and accomplishments" (Dörnyei, 2009, p. 18), in other words, positive outcomes, and contributes to the Ideal (L2) Self. The second form, Instrumentality - Prevention (hereafter Prevention) is associated with preventing "negative outcomes associated with failing to live up to various responsibilities and obligations" (Dörnyei, 2009, p. 18) and contributes to the Ought-to (L2) Self. The origin of these two forms of of motivation can be found in Higgins' (1997, 1998) theory of regulatory focus, which distinguishes "self-regulation with a promotion focus (accomplishments and aspirations) from self-regulation with a prevention focus (safety and responsibilities)" (Higgins, 1997, p. 1280). Higgins (1997) was the first to identify these types of regulation, as well as to link Promotion to the Ideal Self and Prevention to the Ought-to L2 Self.

Two of three of the L2MSS instrument components, Ideal L2 Self and L2 Learning Experience, have been validated by Csizér and Kormos (2009), Islam et al. (2013), Kormos, Kiddle & Csizér (2011), Ryan (2008), and Taguchi et al. (2009), but one of the three components,

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[2] Markus and Nurius (1986) and Higgins (1987) note that the concept of the possible selves, as well as the origin of self-discrepancy theory, can be found in Rogers (1951, 1961).

the Ought-to L2 Self, has proved to be problematic, showing weak or non-significant correlations with Intended Learning Effort in all of these studies.

Thus the goal of the study is to measure, examine, and attempt to explain the motivation of first-year engineering students in Japan by using the L2MSS instrument (Dörnyei and Taguchi, 2010), with extra scales by Ryan (2008), in order to shed further light on whether this construct has relevance for the particular student subpopulation within Engineering.

Research Questions:

1. Do possible selves play a role in the motivation of engineering students?
2. What relationships exist among L2MSS variables, and what are their roles in relation to students' intended learning effort?
3. What do the roles of the teacher and of the classroom atmosphere play in the motivation of these students?

Methods

This is a quantitative study, and the sole method of data collection was the survey. The first-year population was chosen because a recent study (Johnson, 2013) indicated that motivation may be higher for Japanese engineering majors in the first year than in later years.

The bilingual Japanese/English survey instrument was administered once in 2014 to first-year engineering majors at a national university in Japan who were taking a required "Spoken English" class. All first-year students were invited to take the survey in the first week of the class and 428 (over 95% of the population of first-year students) completed the survey. All students were 18 or 19 years old. The instrument was administered by using the university Moodle system, and students responded online. An online Moodle survey was chosen because it is a convenient way for students to respond to a survey and a convenient way for the researcher to collect the resulting data.

Dörnyei and Taguchi's (2010) L2MSS Instrument

Dörnyei and Taguchi's (2010) revised version has 16 variables (descriptions below), which were selected partially on the basis of a review of previous L2 motivation studies, including Ryan (2008) and others (Clément & Baker, 2001; Dörnyei, Csizér and Németh, 2006; Gardner, 1985; Mayumi, in progress; Noels, Pelletier, Clément & Vallerand, 2000; Ushioda, 2001, all cited in Dörnyei and Taguchi, 2010). The Japanese versions of the instrument were provided by Ryan (2008) and Mayumi (in progress) who both used the L2MSS instrument in their dissertation research, and these Japanese versions were modified by Dörnyei after consultation with Japanese colleagues, which resulted in the 2010 version (Dörnyei & Taguchi, 2010). Dörnyei and Taguchi (2010) piloted Dörnyei's L2MSS (2010 version) instrument in Japan and then revised it. It is this most recent version of the instrument that was used in the current survey study, the bilingual Japanese/English version developed by Dörnyei and Taguchi (2010). A detailed description of how the final instrument was developed can be found in Dörnyei and Taguchi (2010, pp. 111 – 126)

The minimum score for indication of good internal scale consistency is a Cronbach alpha (α) coefficient of .700 (Nunnally, 1978), or .70 when rounded to two decimal places as recommended by the American Psychological Association (2010). Dörnyei and Taguchi (2010) obtained acceptable levels for the Cronbach alpha coefficient for all scales except for Ethnocentrism (0.35) and Integrativeness (0.64).

All of the scales and items in the final 2010 Japanese/English version (Dörnyei & Taguchi, 2010) except for the Ethnocentrism scale were used. Ryan's (2008) Ethnocentrism scale was used because it was associated with a higher Cronbach alpha coefficient of .60. In addition, three of Ryan's new scales were used: International Contact, Interest in Foreign Languages, and International Empathy, because of the relevance of these scales to Japanese university student motivation to learn English (Ryan, 2008). Ryan obtained acceptable scores for Cronbach alpha coefficients (α) for two of these three scales (International Contact .85, and International Empathy .72) but obtained .66 for Interest in Foreign Languages. The scales and items used in this study can be found in the item analysis in the Appendix. The Intended Learning Effort scale (Ryan, 2008), a measure of students' intended efforts toward learning English, was included as a criterion measure in this study.

A total of four of Ryan's (2008) scales appear in the Motivational Factors Questionnaire (hereafter MFQ), the main data collection instrument used in this study (shown in the Appendix). Ryan's four scales, with a total of 17 items, were added to Dörnyei and Taguchi's (2010) L2MSS instrument (62 items without Ethnocentrism) for a total of 79 items comprising 19 scales. Following are the scale descriptions.

> **Intended Learning Effort**: This scale measures student perceptions of their current and future efforts to learn English.
> **Ideal L2 Self**: This scale measures student visions of themselves using English in the future, in personal, self-relevant ways.
> **Ought-to L2 Self**: This scale measures student visions of themselves studying and using English for the purposes of fulfilling obligations to others, because it is expected of them, or to avoid possible negative outcomes.
> **Parental Encouragement**: This scale measures the support and encouragement that students perceive that they have received from their parents.
> **Instrumentality – Promotion**: This scale measures the aspirational aspects of instrumental motivation: a student's hopes for the future that relate to study, future job, and living abroad.
> **Instrumentality – Prevention**: This scale measures aspects of instrumental motivation that relate to prevention of negative outcomes relating to study and future job.
> **Linguistic Self-Confidence (L2C)**[3]: This scale measures student confidence in their ability to read, understand, and master English in the future.
> **Attitudes Toward Learning English (ATLE)**: This scale measures student enjoyment of and interest in their English classes.
> **Travel Orientation**: This scale measures the importance of English study related to student desire to travel.
> **Fear of Assimilation**: This scale measures perceptions of the threat of English to the Japanese language and culture.
> **Ethnocentrism**: This scale measures student attitudes toward people with different values and customs from their own.

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[3] Dörnyei and Taguchi's (2010) L2C scale differs from Clément and Kruidenier's (1985) L2C scale in that Clément and Kruidenier measured present (not future) confidence in all four skills: reading, writing, speaking and understanding English, as well as student confidence to interact appropriately with Anglophones on a personal level, and English anxiety as well.

Interest in the English Language: This scale measures student interest in English as a language, for example the rhythm and sound of English, and interest in English vocabulary.

English Anxiety: This scale measures student feelings of confusion and unease when speaking English both in class and out of class.

Integrativeness[4]: This scale measures how much students like and identify with the English language, English-speaking people, and the culture of English-speaking countries.

Cultural Interest: This scale measures how much students like L2 cultural products, for example movies and music.

Attitudes Toward L2 Community: This scale measures attitudes toward people who speak English.

International Contact: This scale measures student desire to use English to make contact with English speakers.

Interest in Foreign Languages: This scale measures student interest in learning languages other than English.

International Empathy: This scale measures shared understanding and connection with the speakers of the target language.

Statement-type items were measured by six-point Likert scales, with the options ranging from *strongly disagree* to *strongly agree*. Question-type items were assessed by a six-point scale ranging from (1) *not at all* to (6) *very much,* following Dörnyei and Taguchi (2010).

Results

Reliability Analysis and Comparisons of Means

Item analysis was carried out and all scales except one (Ethnocentrism .60) surpassed .70 with N=428 for all scales. Thus, all scales except Ethnocentrism have good internal consistency, confirming the reliability of the MFQ for this particular population of students. A summary appears in Table 1 and the complete item analysis report appears in the Appendix.

Table 1
Scale Means and Reliabilities (Ordered by Mean)

Scale	Number of items	α	M	SD
Promotion	5	.83	4.54	0.86
English Anxiety	4	.78	4.50	0.96

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[4] It is important to note here that Dörnyei and Taguchi's (2010) Integrativeness scale is quite different from Gardner's (1985) Integrativeness scale. Dörnyei & Csizér (2002), based on factor analysis (Dörnyei & Clément, 2001) generalized the concept of Integrativeness to include identification with the L2 speakers as well as with "cultural and intellectual values associated with the language, as well as to the actual L2 itself" (p. 453). Dörnyei's (2005) Integrativeness scale contains one item from Gardner's Integrativeness scale. Thus Dörnyei (2005; Dörnyei & Taguchi, 2010) and Gardner (1985) seem to be measuring somewhat different concepts of Integrativeness.

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Prevention	5	.70	4.45	0.78
International Contact	4	.88	4.34	1.01
Interest in Foreign Languages	5	.77	4.15	0.90
Travel Orientation	3	.79	4.14	1.05
Integrativeness	3	.71	4.04	0.96
International Empathy	3	.78	4.03	1.01
Attitudes Toward L2 Community	4	.85	3.92	1.03
Cultural Interest	4	.74	3.78	1.01
Interest in the English Language	4	.81	3.75	1.05
Attitudes Toward Learning English (ATLE)	4	.89	3.65	1.04
Linguistic Self-Confidence (L2C)	4	.74	3.56	0.91
Intended Learning Effort	4	.80	3.46	0.93
Ethnocentrism	5	.60	3.00	0.75
Ought-to L2 Self	4	.78	3.00	1.00
Ideal L2 Self	5	.87	2.94	1.02
Parental Encouragement	4	.82	2.88	1.12
Fear of Assimilation	5	.79	2.68	0.93

N=428

The two forms of instrumental motivation, Promotion and Prevention, have the highest and third-highest means of all scales; only Anxiety falls between the two. Means for Promotion (4.54) and Prevention (4.45) both fall significantly above the 3.5 midpoint of the 6-point Likert scale[5,6], suggesting that these students do see studying English as important and necessary. It seems that these students have mainly instrumental reasons for wanting to learn English; for example, English ability could help them to get good grades in university English classes or on language tests (TOEIC, TOEFL, etc.), or it could help them to get a good job. Japanese university students' instrumental focus on learning English has also been found by Irie (2003), Shimizu, Kubota, and Nakano (2014), and Yashima (2000), among others.

However, there is no significant difference between the mean for Intended Learning Effort (3.46) and the midpoint, indicating that students neither agree nor disagree, on average, with the idea that they are doing their best to learn English (similar to Ryan, 2008). Thus, these students may see a need for studying English but are not working hard at studying it. Recent intercultural studies show higher Intended Learning Effort for non-English majors in China (4.23 in You & Dörnyei, 2014) and in Pakistan (4.47 in Islam et al., 2013), as measured by scales the same as (You & Dörnyei, 2014) or similar to (Islam et al., 2013) the same Dörnyei (2010) instrument used in this study. This confirms recent intercultural reports of low motivation of Japanese university students to learn English (e.g. Taguchi et al., 2009; Yang & Kim, 2011), in

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[5] A one-sample *t*-test showed that all scales have means that are significantly different (*p*<.01) from the mid-point, except for two scales: L2C and Intended Learning Effort.

[6] This is consistent with results from Ryan (2008), who found that the mean for Instrumentality (not differentiated into Promotion and Prevention) was the highest (4.39) of all scales for non-English majors in Japan.

addition to studies done solely on Japanese university students (see, e.g. Irie, 2003; McVeigh, 2002; Nakata, 2006).

The mean for Anxiety (4.50) is second highest. This is not surprising, as high anxiety in language classes has been found in many other studies in Japan (see e.g. Ryan, 2008; Williams & Andrade, 2008) and elsewhere (see e.g. MacIntyre, 2002; Tsui, 1996). Kimura et al. (2001) write that anxiety is an "extremely crucial cognitive factor" for all types of learners (p. 50). We might ask how crucial English Anxiety is to the motivation of first-year Japanese engineering students. We will return to this topic later, after further analysis of results.

The means for International Contact (4.34), Travel Orientation (4.14), Integrativeness (4.04), International Empathy (4.03), Attitudes Toward L2 Community (3.92), and Cultural Interest (3.78) together indicate interest in foreigners and travel, and mild interest in the culture of English-speaking countries. These results suggest these students have positive dispositions toward the English-speaking community and welcome contact and friendship with English-speaking people. This positive disposition toward English-speaking foreigners, their culture, and international travel has been identified as a motivational factor in other studies of Japanese university students (Irie, 2003; Yashima, 2000).

The means for Interest in the English Language (3.75) and Attitudes Toward Learning English, hereafter ATLE (3.65), at slightly above midpoint, indicate mild interest in the English language and slightly positive attitudes toward learning English.

There is no significant difference between the mean for Linguistic Self-Confidence, hereafter L2C[7] (3.56) and the midpoint, indicating that students neither agree nor disagree, on average, with the idea that they are confident that they will someday have good English reading and writing ability (please see Table 15 in the Appendix for items). Japanese students have been reported to have low L2C in their English abilities in recent studies (Nakata, 2006; Ryan, 2008).

The means for Ought-to L2 Self (3.00) and Ideal L2 Self (2.94) are far below the midpoint value of 3.5 and appear at almost the bottom of the ranked means, indicating that the possible L2 selves of these students are weak. Taguchi et al. (2009) found that Japanese university students' Ideal L2 Self was far less salient than those of Chinese and Iranian university students. We will return to the topic of weak possible selves in the discussion section.

To recap, from this comparison of means, it seems that these first-year engineering students believe that they should learn English, but they are not working hard in their English study. They experience a fair amount of anxiety in English classes and lack confidence in their English skills. Their possible L2 selves, Ideal and Ought-to, are both weak. However, they are interested in English-speaking foreigners and want contact and friendship with them.

Correlations

Correlation analysis is used to describe the strength and direction of the linear relationship between variables (Pallant, 2005). The relationships between the three components of Dörnyei's L2MSS, Intended Learning Effort, and other variables were investigated using Pearson product-moment correlation coefficient as shown in Table 2.

Table 2
Correlations Between the Three Principal Variables of the L2MSS (2, 3, 4), Instrumental Motivation (5, 6), Other Variables (7, 8, 9, 10) and Intended Learning Effort (1)

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[7] After Sampasivam and Clément (2014).

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	1	2	3	4	5	6	7	8
1. Intended Learning Effort	-							
2. Ideal L2 Self	.66***	-						
3. Ought-to L2 Self	.34***	.33***	-					
4. Attitudes Toward Learning English (ATLE)	.70***	.61***	.27***	-				
5. Promotion	.48***	.54***	.26***	.49***	-			
6. Prevention	.16**	.08	.34***	.13**	.50***	-		
7. English Anxiety	-.10*	-.24***	.02	-.21***	.03	.23***	-	
8. Linguistic Self-Confidence (L2C)	.65***	.68***	.29***	.61***	.44***	.11*	-.21***	-
9. Integrative-ness	.63***	.64***	.25***	.66***	.60***	.14**	-.12*	.55***

*p<.05
**p<.01
***p<.001
N=428

Note. Correlations in bold indicate a strong and significant correlation.

There are 13 strong correlations of .50 to 1.0 (Cohen, 1988) in Table 2 and these are the main focus of the following discussion. Let us first look at Intended Learning Effort and the three components of the L2MSS. The correlation between Intended Learning Effort and ATLE is strong (.70), as it is with Ideal L2 Self (.66). Ought-to L2 Self has a correlation of .34, indicating moderate correlation (Cohen, 1988).

Ideal L2 Self correlates strongly with three scales in addition to Intended Learning Effort (.66): with L2C (.68), with ATLE (.61), as well as with Promotion (.54). The Ought-to L2 Self, on the other hand, does not correlate strongly with any scale. It does have moderate correlations with Intended Learning Effort (.34), Ideal L2 Self (.33), and Prevention (.34), but all other correlations are weak.

Following Ryan (2008), to further investigate the relationship of the Ideal L2 Self and the Ought-to L2 Self with Intended Learning Effort, correlations were conducted. The correlation of Ideal L2 Self and Intended Learning Effort drops slightly from .66 to .62 when Ought-to L2 Self is controlled for but still remains strong. This suggests that a strong correlation exists between Intended Learning Effort and Ideal L2 Self that is independent of the Ought-to L2 Self. The correlation of Intended Learning Effort with Ought-to L2 Self drops from a moderate correlation

of .34 to a weak correlation of .17 when Ideal L2 Self is controlled for. Thus, the relationship of the Ought-to L2 Self with Intended Learning Effort is weak.

Ryan (2008) found very similar results in his own partial correlations and concluded that the Ought-to L2 Self did not exist as an independent dimension of the L2 self system. Results from the current study support Ryan's (2008) conclusion, as we shall see in later analyses and in the discussion section.

ATLE correlates strongly with one scale in addition to Ideal L2 Self (.61), L2C (.61) and its correlation with Promotion is almost strong (.49). Promotion correlates strongly with one scale in addition to Ideal L2 Self (.54), Prevention (.50). Prevention does not correlate with Ideal L2 Self (.08), as we would expect.

Promotion correlates strongly with the Ideal L2 Self (.54), and Prevention correlates moderately (.34) with the Ought-to L2 Self, as we would expect, considering the nature of the relationships between these two forms of instrumental motivation and possible selves (Higgins, 1997, 1998). However, Promotion also correlates weakly (.26) with Ought-to L2 Self. But by looking at other studies, we can see that this is not unusual. In Islam et al. (2013), Promotion correlated moderately (.45) with Ought-to L2 Self in Iran, and Taguchi et al. (2009) found a weak correlation of .27 for Promotion and Ought-to L2 Self in Japan.

Partial correlation was used to explore the relationship between the Ought-to L2 Self while controlling for Promotion, and then Prevention. The correlation of Ought-to Self and Prevention drops a bit from .34 to .26 when we control for Promotion. The correlation of Ought-to Self and Promotion drops quite a bit from .26 to .11, a very weak correlation, when we control for Prevention. The reason for any correlation at all is likely due to there being some aspirational parts of the Ought-to L2 Self (please see Table 11 in the Appendix). The correlation between Prevention and Ought-to L2 Self (after controlling for Promotion) is somewhat stronger at .26 but is still weak. When we consider the strong correlation (.54) of Ideal L2 Self and Promotion[8], we should ask why the correlation between Ought-to L2 Self and Prevention is weak. There are further weaknesses in the Ought-to L2 Self scale, as we shall see in later sections.

By looking at Table 2, we can also see that Promotion and Prevention themselves have a strong correlation (.50). Previous studies have found moderate correlation of Promotion and Prevention, including Taguchi et al. (2009) in Japan (.31) and Islam et al. (2013) in Iran (.44)[9]. This is not surprising, as they are two facets of instrumental motivation and these scales both consist of items (please see the Appendix) mainly involving English study being perceived as important or necessary. The means are also very close, at 4.54 for Promotion and 4.45 for Prevention. We might ask whether Promotion and Prevention are indeed measuring two different facets of instrumental motivation, or if they are isomorphic, both measuring a single construct of Instrumental Motivation. We will return to this issue after looking at regression results.

English Anxiety has a weak negative correlation (-.10) with Intended Learning Effort. English Anxiety also correlates negatively with Ideal L2 Self (-.24), ATLE (-.21), and L2C (-.21), and correlates positively with Prevention (.23) but all of these correlations are weak. There is no correlation of English Anxiety with the Ought-to L2 Self (.02).

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[8] Partial correlation showed that the correlation between Ideal L2 Self and Promotion is .59 when Prevention is controlled for.

[9] However, Dörnyei (2009, p. 31) writes that Promotion and Prevention constructs in several studies were largely independent from each other, with the highest correlation explaining less than 12% variance.

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L2C correlates strongly with Ideal L2 Self (.68), with Intended Learning Effort (.65), and with ATLE (.61). We can see here the importance of L2C, and we will return to this importance in the discussion section. L2C also has a predictably negative correlation with English Anxiety, but it is weak (-.21).

Ryan (2008) also found that with Japanese university students, Intended Learning Effort correlated strongly both with ATLE (.84, $p<.001$) and with Ideal L2 Self (.74, $p<.001$), but in Ryan's (2008) study, there was a weak correlation of Intended Learning Effort and L2C (.19, $p<.001$), as compared to the strong correlation (.65, $p<.001$) in the current study. This major difference in the correlation of L2C with the Intended Learning Effort of Japanese university students might be explained by the different student population that he studied, with data drawn from students of various ages at five universities studying a variety of majors. It may be that L2C is a far greater motivator for first-year engineering majors, and even for the much larger population of first-year students, than it is for other broader university student populations. One recent study shows a decline in motivation to learn English from the first to second year of study of engineering majors (Johnson, 2013) and it may be that the motivation of the first-year students in the current study will drop in their second year. This would be a useful direction for future research.

Integrativeness follows a pattern of correlations similar to L2C, except that the correlation of Integrativeness and Promotion is strong, whereas the correlation of L2C and Promotion is moderate (Cohen, 1988).

Multiple regression analysis will determine which variables are the best predictors of Intended Learning Effort, the criterion measure. We will also see how much variance in each outcome variable can be explained by the predictor variables, i.e. how well each set of predictor variables predicts each outcome variable (Pallant, 2005). From these results, a model based on regression analyses will be constructed, for the purpose of seeing how these variables interact with and affect each other.

Regression Analyses

For regression models, no problems with normality, multicollinearity, or tolerance were identified with any of the following analyses. The R^2 values range from .58 to .73, indicating that 58% to 73% of the variance of each of the scales is explained by these models, which is very high (Dörnyei, 2009). All F values were significant at the $p<.001$ level.

Table 3
Standard Regression Model Predicting Intended Learning Effort

Scales	B	SE B	β
Attitudes Toward Learning English (ATLE)	.29	.05	.32***
Linguistic Self-Confidence (L2C)	.22	.05	.21***
Ideal L2 Self	.16	.05	.17**
Integrativeness	.15	.06	.15**
R^2	.63		
Adjusted R^2	.62		
F	38.99***		

**p<.01
***p<.001
N=428

This regression model explains 63% of the variance in Intended Learning Effort. ATLE is the strongest predictor of Intended Learning Effort, indicating the importance of the learning environment. In previous studies on university students in Japan (Ryan, 2008; Taguchi et al, 2009), ATLE and Ideal L2 Self were found to be the two strongest predictors of Intended Learning Effort. A similar result can be seen in Table 3 above, except that L2C is the second strongest predictor, bumping the Ideal L2 Self into third place. This significance of L2C for this population of students is intriguing. Why is L2C so important for first-year engineering students?

Neither the Ought-to L2 Self nor English Anxiety appear in this regression model, which indicates that they do not contribute directly to Intended Learning Effort. We will return to this point, and to the importance of L2C, in the discussion section.

Table 4
Standard Regression Model Predicting Ideal L2 Self

Scales	B	SE B	β
Linguistic Self-Confidence (L2C)	.30	.05	.26***
Promotion	.23	.06	.19***
Intended Learning Effort	.16	.05	.15**
Prevention	-.17	.05	-.13***
English Anxiety	-.13	.03	-.12***
Attitudes Toward L2 Community	.11	.06	.11
Fear of Assimilation	.11	.04	.10**
R^2	.68		
Adjusted R^2	.67		
F	48.65***		

**p<.01
***p<.001
N=428

This regression model explains 68% of the variance in Ideal L2 Self. L2C and Promotion emerge as the strongest predictors of the Ideal L2 Self as indicated by the strong β values and the significance of *p*<.001. Prevention and English Anxiety are both negative contributors. Promotion (with a positive significant correlation) and Prevention (with a negative significant correlation) are predictably opposite contributors to the ideal L2 self. This result helps to confirm that there are indeed two forms of instrumental motivation: Promotion and Prevention. If there was only one form of instrumental motivation, i.e. if Promotion and Prevention were isomorphic and thus measuring the same thing, then they would both contribute to the Ideal L2 Self either positively or negatively; in other words, the directions of their correlation to Ideal L2 Self would match. However, they do not, indicating that there are indeed two forms of instrumental motivation.

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Another negative relationship can be seen between English Anxiety and Ideal L2 Self. English Anxiety is a negative predictor of some other variables as well, as we shall see in later regression analysis results.

Fear of Assimilation, the fear that joining the L2 community might result in the loss of the first language and culture (Clément, 1980), contributes positively to Ideal L2 Self. A similar result was found by Clément (1986), who found that Fear of Assimilation was positively related to integrativeness, motivation, and acculturation for majority group members (those individuals whose mother tongue was the main language of the community, as it is for Japanese living in Japan). For majority group members, Fear of Assimilation would not be antagonistic to Integrativeness, motivation, or acculturation (Clément, 1986).

Table 5
Standard Regression Model Predicting Ought-to L2 Self

Scales	*B*	SE *B*	β
Parental Encouragement	.53	.03	.59***
Prevention	.34	.05	.27***
Travel Orientation	.20	.05	.21***
Contact	-.14	.07	-.14*
Promotion	-.14	.06	-.12*
Fear of Assimilation	.09	.04	.09*
Ethnocentrism	.10	.05	.08*
R^2	.63		
Adjusted R^2	.61		
F	37.86***		

*p<.05
***p<.001
N=428

This regression model explains 63% of the variance in Ought-to L2 Self. Parental Encouragement, Prevention, and Travel Orientation emerged as the three strongest predictors of the Ought-to L2 Self. Contact and Promotion are negative contributors but their β values and lower level of significance indicate that they are weak predictors of the Ought-to L2 Self. Prevention and Promotion again contribute in opposite directions, with Prevention having a positive correlation (.27) with the Ought-to L2 Self but Promotion having a negative one (-.12).

Table 6
Standard Regression Model Predicting ATLE

Scales	*B*	SE *B*	β
Interest in the English Language	.47	.04	.47***
Intended Learning Effort	.28	.05	.25***
Attitudes Toward L2 Community	-.12	.05	-.12*
Integrativeness	.12	.05	.12*
English Anxiety	-.10	.03	-.10**

Cultural Interest	.09	.04	.09*
Fear of Assimilation	-.07	.03	-.06*
R^2	.72		
Adjusted R^2	.71		
F	58.01***		

*p<.05
**p<.01
***p<.001
N=428

This regression model explains 72% of the variance in ATLE. Interest in the English Language and Intended Learning Effort emerged as the two strongest predictors of ATLE.

Interest in the English Language is the strongest predictor of ATLE and has a mean of 3.75, slightly above the midpoint value, and thus shows slightly positive ATLE. Indeed, the mean of ATLE is itself barely above the midpoint, at 3.65. As the mean for ATLE is low, and it is the strongest predictor of Intended Learning Effort, it is interesting to see that Intended Learning Effort itself is low (3.46). These low scores will be explored in the Discussion section.

English Anxiety is a negative predictor of ATLE, as it is for Ideal L2 Self.

L2C emerged as the strongest predictor of the Ideal L2 Self (.26) and the second strongest predictor of Intended Learning Effort (.21). This indicates the strong role of L2C in Japanese engineering students' motivation to learn English. In order to understand which scales contribute to L2C, regression analysis was conducted, with the results shown in Table 7.

Table 7
Standard Regression Model Predicting L2C

Scales	B	SE B	β
Ideal L2 Self	.30	.05	.34***
Intended Learning Effort	.23	.05	.24***
Interest in Foreign Languages	.17	.06	.17**
Attitudes Toward L2 Community	-.17	.06	-.15**
English Anxiety	-.07	.03	-.08*
R^2	.58		
Adjusted R^2	.56		
F	31.69***		

*p<.05
**p<.01
***p<.001
N=428

This regression model explains 58% of the variance in L2C. Ideal L2 Self and Intended Learning Effort emerged as the two strongest predictors of L2C.

There is a negative relationship between Attitudes Toward the L2 Community and L2C. Unfortunately, we cannot determine causation from these analyses. Do positive student attitudes toward English speakers negatively affect student confidence to use English? This would seem

counter-intuitive. Or does low confidence affect attitudes? Do they both affect each other? While intriguing, this relationship cannot be examined in more detail without further data collection and analysis, and this may be a useful direction for future research.

There is also a negative relationship between English Anxiety and L2C. To determine the relationship between Attitudes Toward the L2 Community and English Anxiety, a regression analysis was performed. English Anxiety was found to be a negative predictor of Attitudes Toward the L2 Community (B=-.06, SE B=.03, β=-.06*). Thus English Anxiety is a negative predictor of both L2C and Attitudes Toward the L2 Community, but with weak β values, indicating weak prediction.

Table 8
Standard Regression Model Predicting Integrativeness

Scales	B	SE B	β
Attitudes Toward L2 Community	.30	.05	.32***
Travel	.13	.04	.14**
Empathy	.11	.05	.12*
Cultural Interest	.11	.03	.11**
Intended Learning Effort	.12	.04	.11**
Attitudes Toward Learning English (ATLE)	.10	.04	.11*
Promotion	.09	.05	.08**
Prevention	-.09	.04	-.07*
Fear of Assimilation	-.06	.03	-.06*
R^2	.73		
Adjusted R^2	.72		
F	62.31***		

*p<.05
**p<.01
***p<.001
N=428

This regression model explains 62% of the variance in Integrativeness. Attitudes Toward L2 Community emerged as the strongest predictor of Integrativeness, indicating that attitudes towards the L2 community is the strongest predictor of Dörnyei's (2002, 2005) version of Integrativeness. No fewer than 9 variables contribute to Integrativeness, making it the most complex of the variables in this analysis, but only one variable, Attitudes Toward L2 Community is a predictor at the *p*<.001 significance level.

A model of student motivation based on regression results will be described in the following Discussion section, after a look into possible selves and how they may be related to the motivation of Japanese engineering students to learn English.

Discussion

One of the most interesting results from the comparison of means section is the weakness of the two possible selves included in this study, the Ought-to L2 Self (3.00) and the Ideal L2 Self (2.94), which both appear at below the midpoint for means and almost at the bottom of Table 1. This weakness of the Ideal L2 Self should not be surprising, considering the nature of English study in Japanese schools. The Japanese educational system promotes English study as a way to pass English tests, not as a means of communication. Instrumental motivation to study English is cultivated from an early age, with the sole purpose for learning English being to pass tests. But there is no cultivation of an Ideal L2 Self. Japanese students may see English study as a means to an end and not identify at all with English itself. With nothing to suggest that English can be used for things other than passing tests, such as communication, travel, the possibility of living and working in another country, and with little exposure to English-speaking cultures, and next to no contact with foreigners, it seems no wonder that these students have such weak possible L2 selves. An Ideal L2 self includes visions of oneself communicating in English, in international situations, and this vision does not come from nowhere.

Dörnyei (2009, p. 18) writes that in order to be motivated by a possible self, that self has to first exist. He notes, citing Ruvolo and Markus (1992) and Higgins (1987, 1996) that not everyone is expected to possess a developed ideal or ought self guide, and that this can explain the lack of motivation in many people. So first, perhaps we should ask whether any strong Ideal L2 Selves do exist in this population.

According to the frequencies data displayed in Figure 1, 22.7% of students scored a value of 2.0 or lower for Ideal L2 Self, while 3.5% scored 5.0 or higher.

Figure 1. Histogram of Ideal L2 Selves
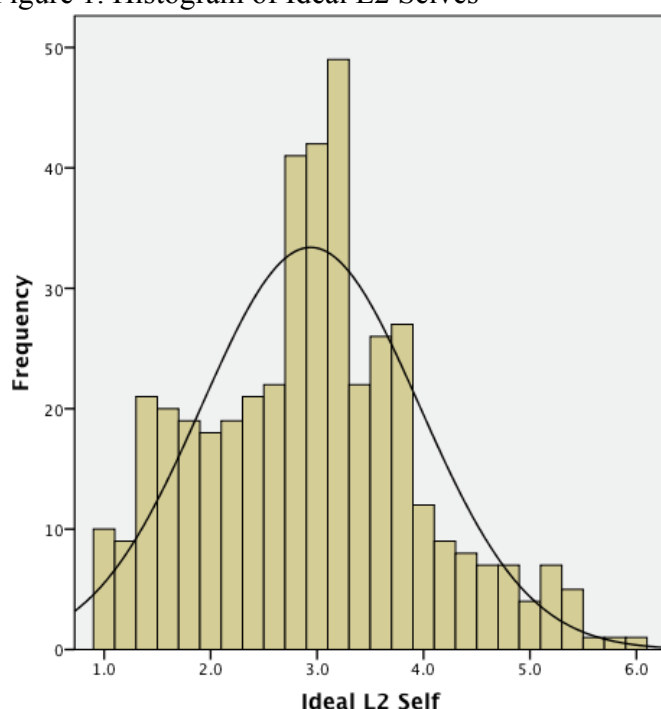
For Ought-to L2 Self (see Figure 2), 20.3 percent of students scored a value of 2.0 or lower, while 1.9% scored 5.0 or higher.

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Figure 2. Histogram of Ought-to L2 Selves[10]
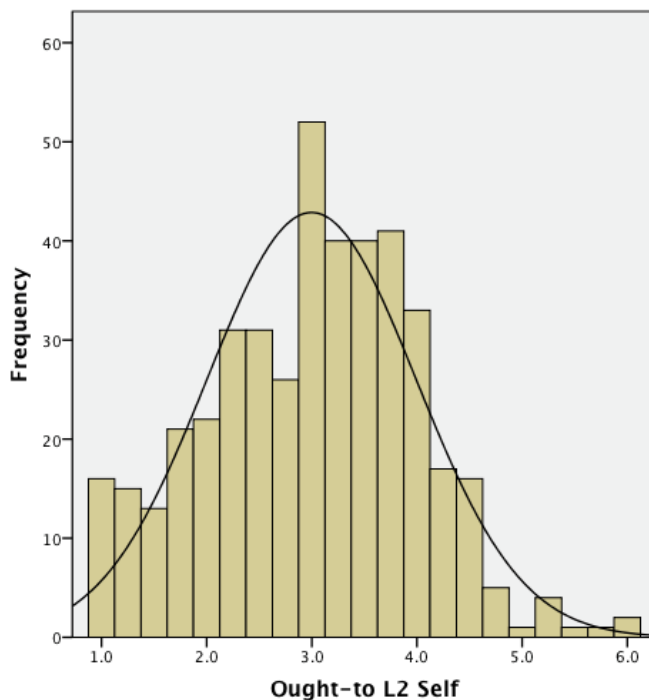
From percentages cited above and from the histograms above, we can see that there are indeed a few students who possess strong Ideal or Ought selves, but they are exceptions. Nevertheless, there are a few, and we must ask how these few have developed these strong possible selves when their classmates have not. To answer this question, further research is necessary, including qualitative analysis, which unfortunately is beyond the focus of this study. However, it would be very interesting to know the backgrounds of these few individuals. In the case of a strong Ideal L2 Self, we can ask if these students have traveled to another country. Do they have relatives or friends living abroad, with whom they have contact in English? Do they have foreign friends here in Japan? How have they used English in the past, and how do they imagine using it in the future? To summarize, where did this Ideal L2 Self come from?

It is not too late for an Ideal L2 Self to be cultivated in university, according to Dörnyei (2009), who writes that an Ideal L2 Self could be activated by helping students to create their vision. "Igniting the vision involves, in effect, increasing the students' mindfulness about the significance of ideal selves, guiding them through a number of possible selves that they have entertained in their minds in the past, and presenting powerful role models" (Dörnyei, 2009, p. 33).

In addition to a weak Ideal L2 Self, we find an even weaker Ought-to L2 Self in this study, as indicated by the low mean (shown in Table 1), the fact that the correlation with Intended Learning Effort is weak (.17) when Ideal L2 Self is controlled for, and the fact that it does not emerge as a contributor to Intended Learning Effort (shown in Table 3) in regression analysis. This weak Ought-to L2 Self has been found in other studies done on Japanese university students (Aubrey, 2014; Ryan, 2008; Taguchi et al., 2009) and outside Japan, in Hungary (Csizér &

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[10] Ought-to L2 Self columns differ in width from columns in the Ideal L2 Self histogram above because of the different number of items in the scales.

Kormos, 2009; Kormos & Csizér, 2008), China (Dörnyei & Chan, 2013), in Iran (Papi & Teimouri, 2012), in Pakistan (Islam et al., 2013), and in Chile (Kormos, Kiddle & Csizér, 2011), and in reviewing these studies, Dörnyei and Chan (2013) concluded that the Ought-to L2 Self lacks the "energizing force to make a difference in actual motivated learner behaviours by themselves" (p. 454). Taguchi et al. (2009) used the same items (shown in the Appendix) making up the main variables in this study and found through structural equation modeling that the Ought-to L2 Self in Japanese university students did contribute to Intended Learning Efforts, but that it was weaker than the Ideal L2 Self. In the current study, and in Ryan (2008), the Ought-to L2 Self did not contribute directly to Intended Learning Efforts. As a result, it does not appear in the model of L2 motivation (Figure 3 below).

Instead, the current study found the Ideal L2 Self to play a far greater role in the language learning motivation of first-year engineering students due to the strong correlation of Intended Learning Effort with Ideal L2 Self (please see Table 2) and the contribution of the Ideal L2 Self to Intended Learning Effort, as we saw in the regression analysis (please see Table 3). Thus we see that the Ideal L2 Self has a strong potential role in motivating this population of students, but it is not being realized, as we see from the low mean of 2.94.

While the Ideal L2 Self is a potential motivator for Japanese students, we saw in the regression section that it is ATLE that is the strongest predictor of students' Intended Learning Effort. Dörnyei (2009) writes, "for some language learners the initial motivation to learn a language does not come from internally or externally generated self images but rather from successful engagement with the actual language learning process" (p. 29). Many university students in Japan have had unsuccessful engagement with the English language learning process, and this may be a major reason for their lack of motivation. This will be discussed in further detail in a later section.

After ATLE, L2C is the highest contributor to students' Intended Learning Effort. L2C has particular importance to the motivation of this particular group of students, and this importance will be discussed in a later section as well, after identifying some interesting interactions between some of the main variables in this study, and constructing an interactive model of motivation. Let us have a look at how the variables that contribute most to Intended Learning Effort relate to each other in this study.

According to regression analysis, ATLE, L2C, Ideal L2 Self and Integrativeness are predictors of Intended Learning Effort (see Table 3). L2C and Ideal L2 Self contribute to each other, and ATLE and Integrativeness contribute to each other. A model of motivation (please see Figure 3) constructed from the results of the regression analyses shows clearly the relationship of these four main variables on Intended Learning Effort, and with each other. All relationships indicate correlation, but not causation, as indicated by the bidirectional arrows. Please see regression tables for exact values.

Figure 3. Model of L2 Motivation for First-year Engineering Majors in Japan based on Regression Analyses

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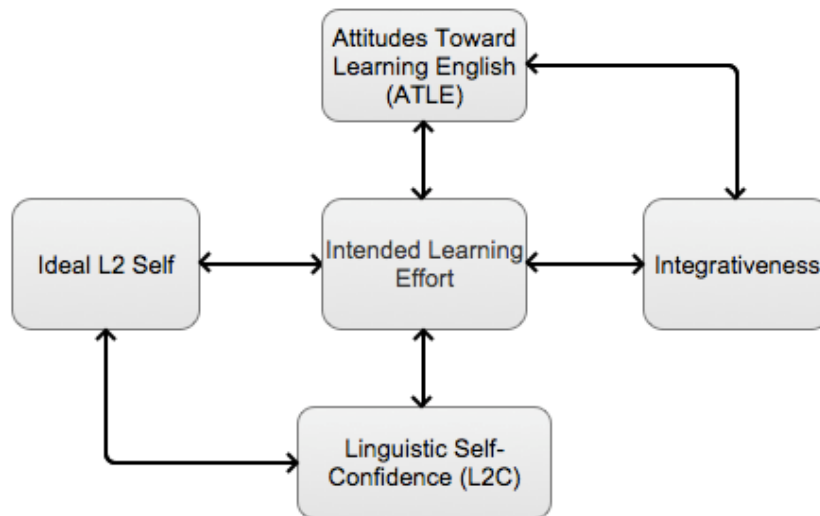
There are several points that need to be made about this model. First, it resembles the model suggested by Clément, Dörnyei and Noels (1994) in which ATLE (Gardner, 1985), L2C (Clément, 1980), and Integrativeness (Gardner & Lambert, 1959) all predict Intended Learning Effort (Ryan, 2008). In the model above, we see the addition of the Ideal L2 Self (Dörnyei, 2005). It is important to note that the Ideal L2 Self has not replaced Integrativeness, as Dörnyei and Csizér (2002), Dörnyei (2009, 2010), Ryan (2008) and Taguchi et al. (2009) have suggested it might. Instead, we find that even in a unicultural environment like Japan, Integrativeness significantly predicts Intended Learning Effort. Clément et al. (1994) and Kormos and Csizér (2008) both found that Integrativeness contributes to the motivation of Hungarians, another unicultural population. Brady (2015) and Busse (2010), among others (e.g. Gardner, 2005; MacIntyre, Mackinnon & Clément, 2009) are critical of the concept of relabeling Integrativeness as the Ideal L2 Self, and Brady (2015) writes, "We conjecture that a reinterpretation of integrativeness is justified but that relabeling the concept under the novel theory of the *ideal self* entails an equation of the two concepts, which so far in the literature does not seem justified."

The next points to be made about the model in Figure 3 are about the relationships between ATLE and Integrativeness, and L2C and Ideal L2 Self. First, ATLE and Integrativeness predict each other (see Tables 6 and 8), indicating a special relationship between the two. ATLE measures student attitudes toward their L2 (in this case, English) classes. ATLE has been recognized as an important motivational variable since Gardner (1985) identified and named it as Attitudes Toward the Learning Situation in his socio-educational model of language acquisition, and Gardner's Integrative orientation variable emerged in the first major study he authored (Gardner & Lambert, 1959). These two variables have been found to correlate in many studies done by Gardner and his associates (Gardner & Masgoret, 2003). Dörnyei and Taguchi's (2010) Integrativeness scale consists of the following items:

How important do you think learning English is in order to learn more about the culture and art of its speakers?

How much would you like to become similar to the people who speak English?

How much do you like English?

From inspection of these three items, it seems that liking English may be the item that corresponds most to the enjoyment of English classes expressed by the ATLE scale, and a

correlation analysis of the items in this scale showed that, "How much do you like English?" had strong correlations with three of the four ATLE items ("I find learning English really interesting" .72***, "I always look forward to English classes" .64***, "I really enjoy learning English" .69***) and a moderate correlation (.45***) with "I like the atmosphere of my English classes". The other two Integrativeness items showed moderate correlations with ATLE items.

The second relationship between predictors that we see in the model in Figure 3 is between L2C and Ideal L2 Self. In Dörnyei and Taguchi's (2010) L2C scale (please see Table 15 for exact items), three of the four items use the phrase "will be able to", and the scale measures how much students think they will be able to acquire good reading and writing English ability in the future. This forward-looking vision of oneself using English for reading and writing is directly related to the Ideal L2 Self's forward-looking vision of oneself speaking English, in fact, the correlation between the two is the second highest of all correlations found in Table 2. Students who have confidence in their future English reading and writing ability can also imagine using it in the future for communication.

A few interesting points need to be made about results not appearing in the model. First is that neither the Promotion nor the Prevention aspect of instrumentality is a predictor of Intended Learning Effort. However, this study found Promotion and Prevention to be predictors of the Ideal L2 Self and Integrativeness, both of which do predict Intended Learning Effort. So for this population of students, instrumental forms of motivation act indirectly on learning behaviour, as measured by Intended Learning Effort. This finding is similar to structural equation model results found by Taguchi et al. (2009), in which Promotion and Prevention were found to contribute indirectly to learning behaviour.

One interesting aspect of the Ought-to L2 Self in relation to Prevention should be pointed out. Dörnyei (2009) writes that both Ideal and Ought-to L2 Selves are important for motivation. Citing Hoyle and Sherrill (2006), Dörnyei (2009) writes that the motivation conferred by balanced possible selves is additive. The best situation for a language learner would be when both Ideal L2 self and Ought-to L2 Self are vivid. A promotion focus normally contributes to an ideal self, according to Higgins' regulatory focus theory (1997, 1998) and to an Ideal L2 Self (Dörnyei, 2009), although we have seen that despite relatively strong Promotion, the Ideal L2 Self of most students in this study is weak. Prevention normally contributes to Ought-to L2 Self, which is also weak in these students. The interesting part is that in this study, Ought-to L2 Self does not contribute to Intended Learning Effort; therefore Prevention becomes something of a liability in that it contributes negatively to Ideal L2 Self. In a model where strong Prevention contributes to a strong Ought-to L2 Self, having a high level of Prevention would be a benefit to the learner. However, with no Ought-to L2 Self in this model, Prevention being a negative contributor to Ideal L2 Self is therefore a handicap to the student[11]. Lower Prevention would mean less negative contribution to the Ideal L2 Self, which itself predicts both Intended Learning Effort and Linguistic Self Confidence. Papi and Teimouri (2012), in a study on university students in Iran, found through regression that Prevention was a negative predictor of Ideal L2 Self and of ATLE. Thus, there may be some negative effects of Prevention on motivation to learn the L2, depending on the population studied.

Another interesting point is that English Anxiety does make a small contribution to the Ideal L2 Self and on ATLE, but it is almost negligible (please see regression tables for exact values), and does not affect Intended Learning Effort directly. Ryan (2008) also found high levels

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[11] A partial correlation analysis showed that when Promotion is controlled for, Prevention's correlation with Ideal L2 Self was -.27.

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of English Anxiety for non-English majors in Japan (4.09) but a weak correlation with Intended Learning Effort (.07). Thus, for these students, English Anxiety does not seem to be a major problem; however, lowering English Anxiety might result in higher Ideal L2 Self and ATLE, and these are both correlated with Intended Learning Efforts. Thus we cannot ignore the negative relationship that English Anxiety has with student motivation to learn English. But much more importantly, we cannot ignore low L2C. In this study, L2C is a strong predictor of both Intended Learning Effort and Ideal L2 Self and thus takes on major importance in the language learning motivation of this population of students.

Linguistic self-confidence (L2C) was first identified as an important motivational variable by Clément (1980) and was confirmed by structural equation modeling by Clément and Kruidenier (1985). Later, Clément, Dörnyei, and Noels (1994) found L2C to be one of three variables (the other two being ATLC and Integrativeness) that had a direct effect on foreign language behaviour and competence, their main indicator of motivation. Hashimoto (2002) found that the largest single effect in her study of Japanese university students studying English in the USA was the impact of perceived competence on motivation. She suggests that increased perceived competence will lead to increased motivation, and writes that it may be "especially important" (p. 58) to increase the perceived competence of Japanese students studying English.

Clément et al. (1994) noted that good classroom atmosphere promotes L2C and moderates anxiety. MacIntyre, Dörnyei, Clément, and Noels (1998) write that L2C is based on "a lack of anxiety combined with a sufficient level of communicative competence, arising from a series of reasonably pleasant L2 experiences." Students in Japan may have low L2C because they have limited communicative competence, and may have had few, if any, pleasant L2 experiences. Falout and Maruyama (2004) identified a lack of L2C as the biggest demotivator for both limited proficiency and high proficiency Japanese students. Falout, Elwood and Hood (2009) also identified a lack of L2C in English ability as a demotivator for Japanese university students and suggested that an increase in L2C may result in improved learning outcomes.

The studies cited above support the importance of L2C found in the current study. As possible interventions in English classes in Japan, if teachers could help their students to improve their L2C, we might see an increase in Intended Learning Effort. If teachers could increase Interest in the English Language, we might see an increase in ATLE and subsequently, in Intended Learning Effort. In other words, if teachers would like to increase Japanese students' motivation to learn English, we should start with building confidence in using English for more communicative purposes and thereby potentially increasing interest in using English. If Japanese students were able to have broader experiences with English, they may come to experience its value for more than just passing tests. English ability could enable students to interact more fully with the world outside of Japan. While acknowledging the cultural imperialism inherent in using English (Kubota, 1998; Pennycook, 1998; Phillipson, 1992) as a lingua franca, we must also acknowledge the practical benefits of having good English ability in today's globalizing world. English ability affords many advantages both at home and abroad, on the Internet, in the workplace, and English ability enables intercultural friendship, which students in this study view positively.

As well, the Ideal L2 Self needs to be strengthened, as this may have an effect on L2C as well as Intended Learning Efforts. Students have reasonably high levels of instrumental motivation for learning English. But because of limited or no experience in using English for communication, many students fail to establish personal goals in learning English (Shimizu et al., 2014) and it is these personal goals that students need in order to have an L2 Self that would increase their motivation to learn English. Dörnyei (2009) has outlined a strategy for helping

students to strengthen their Ideal L2 Self that starts with creating the vision of themselves as English speakers. As Japanese students rarely, if ever, use English for communication, or even speak English at all, it is easy to see why they do not see themselves as English speakers. The importance of the role teachers play in creating a positive learning environment, where students use English to communicate, cannot be overstated.

We have seen in this study that this population of students has instrumental motivation as their main motivator for learning English. But they also see a role for English as a way to make contact with foreigners and make friends. These students do seem to have motivation to learn English, as indicated by their relatively high Promotion and Prevention scores, but the low mean for Intended Learning Effort shows that this motivation is not being transformed into effort. Lack of confidence, little interest in English as a language, and poor attitudes toward learning English all contribute to mediocre effort to learn English. Many of these poor attitudes may be the direct result of the way students have learned English in school, primarily by the grammar-translation method, devoid of more authentic and contextualized communication opportunities. To increase L2C, and possibly interest in the English language, students need to use it for real communication with foreigners. This may also lead to an increase in Attitudes Toward the L2 Community, the strongest contributor to Integrativeness. Students who communicate with foreigners may become naturally interested in English, and their efforts to learn English may rise as a result. In the means comparison section, we saw that these students are interested in English-speaking foreigners and want contact and friendship with them. Clément et al. (1994) found that Frequency of Contact and Quality of Contact were among the highest correlations with L2C for students in Hungary, a unicultural setting (as is Japan). As intercultural contact is rare in Japan, it is up to teachers to try to arrange such contact opportunities.

The role of the teacher is important in several ways to developing student motivation to learn English. It is the teacher who could potentially be igniting the vision of an Ideal L2 self, nurturing the development of L2C in using English, creating interest in the English Language, supporting the development of positive attitudes toward learning English, creating a positive language learning environment in English classes, and providing opportunities for students to use their English for communication, with foreigners if possible. The teacher as a motivator has been the focus of several recent studies. Kimura et al. (2001) found that although Japanese university students had inhibitory factors working against learning English, these students also recognize the teacher as facilitator of successful learning. Kikuchi (2013) found that teachers and classes were the most often recognized demotivators for students learning English; however, teachers can also have a very positive influence on motivation. Teacher Immediacy was found by Falout et al. (2009) to have a strong impact on student motivation, and students found such teachers inspiring. Teachers may also need to protect students from the loss of L2C, and pique their students' interest (Falout et al., 2009).

Positive classroom atmosphere is vital to the development of students' positive attitudes toward learning English. Ryan (2009) found that all of his 23 interviewees evaluated their high school English-learning experience negatively. Falout and Maruyama (2004) found that many students had had very negative classroom experiences, including teacher use of sarcasm and humiliation when students asked questions. This kind of experience would be demotivating indeed. Monotonous, boring classes, rote learning, grammar-translation exercises and a focus on preparing for university entrance exams have all been cited as demotivators for Japanese students.

Carpenter, Falout, Fukuda, Trovela and Murphey (2009) found that Japanese university students who had had positive previous English learning experiences developed a sense of agency and used adaptive coping strategies that motivated them even when they experienced potential

demotivating experiences later on, whereas students who had had negative English learning experiences did not develop these proactive, adaptive skills and became further demotivated as their English study continued. It seems therefore imperative that all students who study English have ample positive learning experiences, and that until there is an improvement in attitudes toward learning English, Japanese university students will continue to make mediocre efforts to improve their English.

To counter the negative experiences students may have had learning English in school, teachers need to create a positive learning environment for students. When we look at the items making up the ATLE scale, the strongest contributor to Intended Learning Efforts, we find the following:

I like the atmosphere of my English classes.
I find learning English really interesting.
I always look forward to English classes.
I really enjoy learning English.

In these items, the affective aspect of learning English is recognized. To improve student attitudes toward learning English, English classes at all levels, from first classes to university, need to be student-centred, interesting, and enjoyable, and should focus on using English for communicative purposes. Students need positive language learning experiences, and experiences using English for international communication. The teacher has a critical role to play in facilitating these experiences.

Conclusion

This paper was written with the intention of measuring, examining, and attempting to explain the motivation of Japanese first-year engineering majors. Results showed that two of the three components of Dörnyei's (2005) L2 Motivational Self-System, Attitudes Toward Learning English (ATLE) and the Ideal L2 Self, were found to be predictors of the criterion measure, Intended Learning Effort, but the third component, the Ought-to L2 Self, was not. Linguistic Self-Confidence (L2C) and Integrativeness were also found to be significant predictors of Intended Learning Effort.

The low mean for Intended Learning Effort, with a non-significant difference from the midpoint of 3.5, indicated that the motivation to learn English of this population of students is mediocre. Student means for both forms of instrumentality, Promotion and Prevention, were comparatively high, as was English Anxiety, but none of these variables contribute to Intended Learning Effort. Instead, ATLE was found to be the strongest predictor of Intended Learning Effort, indicating that student attitudes toward their English class itself is the variable of most importance to the motivation of these students.

Suggestions for how to improve student motivation centred around increasing the means of variables that contribute to Intended Learning Effort, with using English for communicative purposes, if possible with foreigners, being the main recommendation. The importance of the roles of the teacher and the English class in motivating students was identified, with another main point being that teachers can improve the atmosphere of English classes by making them interesting and enjoyable. As well, increasing L2C, the Ideal L2 Self, and Integrativeness may lead to increased motivation of these students, and these all involve the use of English for communication.

Results from this study may not apply to contexts other than that of first-year Japanese engineering students. Further research studies need to be done, including qualitative and/or mixed

methods studies, that will explain the reasons for the importance of L2C for this population of students, as well as to discover why some students do indeed have a strong Ideal L2 Self, and why others do not.

A limitation to this study is the use of the Intended Learning Efforts scale as the criterion measure. What students intend to do and what they actually do may be quite different. A longitudinal study could measure how student behaviour is affected by these variables over time (Brady, 2015), and this represents a useful direction for future research.

Another useful investigation would be a study investigating student experiences learning the L2, English. It is likely that both positive and negative experiences learning English affect student attitudes and motivation toward learning English. In this discussion, the possible role of prior experiences learning English was described; however, without further data collection, including qualitative data, no conclusions can be drawn from this observation.

L2C was found to be a main predictor of Intended Learning Effort for this sample of Japanese first-year engineering majors, and it would be useful to investigate the role that L2C plays in the motivation of various populations of Japanese university students.

Acknowledgements

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Appendix: Item Analysis (English only)

N=428 for all analyses.

Scale 1: Intended Learning Effort (Dörnyei & Taguchi, 2010)

Table 9
Intended Learning Effort (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
5. If an English course was offered at university or somewhere else in the future, I would like to take it.	.49	.81
17. I am working hard at learning English.	.67	.72
28. I am prepared to expend a lot of effort in learning English.	.69	.71
41. I think that I am doing my best to learn English.	.62	.75
α for all items		.80

Scale 2: Ideal L2 Self (Dörnyei & Taguchi, 2010)

Table 10
Ideal L2 Self (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
8. I can imagine myself living abroad and having a discussion in English.	.72	.84
20. I can imagine a situation where I am speaking English with foreigners.	.81	.82
33. I imagine myself as someone who is able to speak English.	.79	.82
58. Whenever I think of my future career, I imagine myself using English.	.71	.84

66. The things I want to do in the future require me to use English.	.49	.89
α for all items		.87

Scale 3: Ought-to L2 Self (Dörnyei & Taguchi, 2010)

Table 11
Ought-to L2 Self (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
13. I study English because close friends of mine think it is important.	.47	.77
25. I have to study English, because, if I do not study it, I think my parents will be disappointed with me.	.58	.72
38. Learning English is necessary because people surrounding me expect me to do so.	.66	.68
62. My parents believe that I must study English to be an educated person.	.62	.70
α for all items		.78

Scale 4: Parental Encouragement (Dörnyei & Taguchi, 2010)

Table 12
Parental Encouragement (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
2. My parents encourage me to study English.	.61	.80
14. My parents encourage me to take every opportunity to use my English (e.g., speaking and reading).	.73	.74
29. My parents encourage me to study English in my free time.	.71	.74
40. My parents encourage me to attend extra English classes after class (e.g., at English conversation schools).	.55	.82
α for all items		.82

Scale 5: Instrumentality – Promotion (Dörnyei & Taguchi, 2010)

Table 13
Instrumentality – Promotion (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted

	Corrected Item-Total Correlation	α with item deleted
6. Studying English can be important to me because I think it will someday be useful in getting a good job.	.67	.78
18. Studying English is important to me because English proficiency is necessary for promotion in the future.	.68	.78
31. Studying English is important to me because I would like to spend a longer period living abroad (e.g., studying and working).	.47	.86
55. Studying English can be important for me because I think I'll need it for further studies in my major.	.71	.77
64. Studying English is important to me because with English I can work globally.	.68	.78
α for all items		.83

Scale 6: Instrumentality – Prevention (Dörnyei & Taguchi, 2010)

Table 14
Instrumentality – Prevention (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
10. I have to learn English because without passing the English course(s) I cannot graduate.	.39	.68
23. I have to study English because I don't want to get bad marks in it at university.	.53	.63
36. I have to study English; otherwise, I think I cannot be successful in my future career.	.42	.67
60. Studying English is necessary for me because I don't want to get a poor score or a fail mark in English proficiency tests.	.53	.63
67. Studying English is important to me because, if I don't have knowledge of English, I'll be considered a weak student.	.45	.66
α for all items		.70

Scale 7: Linguistic Self-Confidence/L2C (Dörnyei & Taguchi, 2010)

Table 15
Linguistic Self-Confidence (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
7. If I make more effort, I am sure I will be able to master English.	.52	.69
19. I believe that I will be capable of reading and understanding most texts in English if I keep studying it.	.62	.64
32. I am sure I will be able to write in English comfortably if I continue studying.	.64	.62
57. I am sure I have a good ability to learn English.	.38	.76

α for all items		.74

Scale 8: Attitudes Toward Learning English/ATLE (Dörnyei & Taguchi, 2010)

Table 16
Attitudes Toward Learning English (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
12. I like the atmosphere of my English classes.	.68	.89
24. I find learning English really interesting.	.80	.85
37. I always look forward to English classes.	.79	.86
61. I really enjoy learning English.	.80	.85
α for all items		.89

Scale 9: Travel Orientation (Dörnyei & Taguchi, 2010)

Table 17
Travel Orientation (3 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
1. Learning English is important to me because I would like to travel internationally.	.56	.79
26. Studying English is important to me because without English I won't be able to travel a lot.	.64	.71
39. I study English because with English I can enjoy travelling abroad.	.71	.63
α for all items		.79

Scale 10: Fear of Assimilation (Dörnyei & Taguchi, 2010)

Table 18
Fear of Assimilation (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
9. I think that there is a danger that Japanese people may forget the importance of Japanese culture, as a result of internationalisation.	.49	.79
21. Because of the influence of the English language, I think the Japanese language is becoming corrupt.	.59	.75
34. Because of the influence of the English-speaking countries, I think the morals of Japanese people are becoming worse.	.59	.75

	Corrected Item-Total Correlation	α with item deleted
56. I think the cultural and artistic values of English are going at the expense of Japanese values.	.56	.76
63. I think that, as internationalization advances, there is a danger of losing the Japanese identity.	.65	.73
α for all items		.79

Scale 11: Ethnocentrism (Ryan, 2008)

Table 19
Ethnocentrism (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
4. I am very interested in the values and customs of other cultures. (R)	.31	.57
16. I don't trust people with different customs and values from my own culture.	.43	.51
30. I respect the values and customs of other cultures. (R)	.43	.51
54. I find it difficult to work together with people who have different customs and values from mine.	.21	.63
65. I find it difficult to comprehend the values and customs of other cultures.	.43	.51
α for all items		.60

Scale 12: Interest in the English Language (Dörnyei & Taguchi, 2010)

Table 20
Interest in the English Language (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
3. I feel excited when hearing English spoken.	.64	.76
15. I am interested in the way English is used in conversation.	.67	.75
27. I find the difference between Japanese vocabulary and English vocabulary interesting.	.55	.80
42. I like the rhythm of English.	.67	.75
α for all items		.81

Scale 13: English Anxiety (Dörnyei & Taguchi, 2010)

Table 21
English Anxiety (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
11. I would feel uneasy speaking English with a native speaker.	.60	.72
22. I get nervous and confused when I am speaking in my English class.	.58	.73
35. If I met an English native speaker, I would feel nervous.	.65	.69
59. I would get tense if a foreigner asked me for directions in English.	.51	.76
α for all items		.78

Scale 14: Integrativeness (Dörnyei & Taguchi, 2010)

Table 22
Integrativeness (3 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
45. How important do you think learning English is in order to learn more about the culture and art of its speakers?	.48	.68
48. How much would you like to become similar to the people who speak English?	.57	.56
51. How much do you like English?	.55	.59
α for all items		.71

Scale 15: Cultural Interest (Dörnyei & Taguchi, 2010)

Table 23
Cultural Interest (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
43. Do you like the music of English-speaking countries (e.g., pop music)?	.49	.71
46. Do you like English movies?	.56	.68
49. Do you like English magazines, newspapers, or books?	.55	.68
52. Do you like TV shows made in English-speaking countries?	.56	.67
α for all items		.74

Scale 16: Attitudes Toward L2 Community (Dörnyei & Taguchi, 2010)

Table 24
Attitudes Toward L2 Community (4 items)

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Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
44. Would you like to travel to English-speaking countries?	.66	.83
47. Do you like the people who live in English-speaking countries?	.66	.83
50. Do you like meeting people from English-speaking countries?	.73	.80
53. Would you like to know more about people from English-speaking countries?	.75	.79
α for all items		.85

Scale 17: International Contact (Ryan, 2008)

Table 25
International Contact (4 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
70. I think that English will help me meet more people.	.71	.87
73. I would like to be able to use English to get involved with people from other countries.	.72	.86
75. I would like to be able to use English to communicate with people from other countries.	.81	.83
79. If I could speak English well, I could get to know more people from other countries.	.76	.85
α for all items		.88

Scale 18: Interest in Foreign Languages (Ryan, 2008)

Table 26
Interest in Foreign Languages (5 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
68. I think I would study a foreign language even if it weren't compulsory.	.58	.72
71. I would like to learn a lot of foreign languages.	.62	.70
74. If I were visiting a foreign country I would like to be able to speak its language.	.57	.72
76. If I planned to stay in another country, I would study the local language.	.53	.74
78. If I made the effort, I could learn a foreign language.	.44	.77
α for all items		.77

Scale 19: International Empathy (Ryan, 2008)

Table 27
International Empathy (3 items)

Item number in instrument and item text	Corrected Item-Total Correlation	α with item deleted
69. Studying English will help me to get to know English-speaking people.	.61	.72
72. Studying English will help me to understand people from all over the world, not just English-speaking countries.	.60	.74
77. Studying English is important to me because I would like to become close to other English speakers.	.67	.66
α for all items		.78