

Connecting Student Interest and Motivation in English to the Sustainable Development Goals

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Abstract

English education in Japan has traditionally focused on grammar over communication, and the country has struggled to compete internationally in terms of English proficiency scores. As the country works toward the internationalization of higher education, improving English education is an important issue. One potential solution is the use of topics that elicit students' interest and make them feel like part of the international community. This paper explored the use of the Sustainable Development Goals (SDGs) as a topic due to their global importance and position, along with English, as a key to furthering the global citizenship of Japan's youth. Because of the substantial number of SDGs, not all goals can be realistically addressed in a single course. Therefore, to find topics tailored to students' interests in sustainability, this study examined the relationship between student interest in sustainability, International Posture (IP), and personal connection to SDGs. A survey was given to 266 first-year university students in general education English classes. A separate multiple regression analysis was conducted for the target variable, "Topic Interest" within English class for each goal, to determine how the effects and significance of variables differed for each SDG. Results showed that the IP subscale, "Intergroup Approach Tendency," was significant for 14 and "Personal Value" was significant for 16 of the goals. For internationally minded students engaged in the study of English as a foreign language, the SDGs could be a useful motivational tool.

Keywords: English Language Teaching (ELT), higher education, interest, International Posture (IP), motivation, Sustainable Development Goals (SDGs)

English education is a highly scrutinized topic in Japan. Despite international success in math, science, and reading scores, Japan has continued to struggle in English results. Even after spending at least 6 years studying English, many students enter the university lacking confidence in the subject. This is not to say that the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) lacks the intention to improve English education. On the contrary, programs like the Japan Exchange and Teaching (JET) program and widespread use of Assistant Language Teachers have been implemented to bring an international perspective to the learning environment, and curriculum guidelines phased in from 2013 have encouraged teachers to employ more communication-based teaching methods (Bartlett, 2017). Despite these continued efforts, the grammar translation method and audio-lingual method remain the dominant teaching styles in EFL classrooms, continuing to be prioritized over communication-based methods (Clayton & Yamada, 2022). This has long been attributed to the necessity of preparing students for the university entrance exams (K. Kikuchi, 2006). Yet, despite recognition of issues, systematic changes have been slow and faced difficulties in implementation (Butler et al., 2022).

However, once students have completed the entrance exams, the opportunities for English education suddenly broaden. Although they may no longer have the native teachers to provide them with a connection to the global community, students are no longer bound by the pressures of entrance exams. Despite the negative attitudes toward English that persist until the university, evidence shows that students at the college level can easily be guided to view English as a *Lingua Franca*, and through this change in perspective see the communicative purpose of English, without focusing too much on grammatical perfection (Ishikawa, 2017). This makes higher education courses an excellent time to enable students to start viewing and studying English as a tool for international communication. The relative freedom that university courses have in curriculum development has the potential to enable this change, and carefully chosen subject matter could help students to recognize themselves as part of an international community with which they can interact.

Of the many issues that are relevant in the world today, the SDGs represent content rich themes that may lead to greater motivation for language development. As the government calls for the incorporation of SDGs into curricula, it is a natural consequence that they would also join the program of study for English courses. This integration could link students to an imagined global community of English speakers. However, with seventeen goals, it is difficult to incorporate all goals into a single class. Therefore, this paper sought to gain a better understanding of which SDGs could best be incorporated into the English classroom to connect to students' sense of global community. Specifically, it examined how interest in studying each SDG is affected by International Posture, a construct of motivation in language learning that measures students' sense of connection to the global community.

Literature Review

English Education and Global Citizenship in Japan

The Japanese government has continued to make efforts to improve English education. Following the national curriculum, most students began studying English in junior high school until it was introduced into elementary schools as comprehensive learning in 2002. While this class did include some English lessons, the primary focus was on “international awareness” and not specifically focus on language skills. English was formally adopted as a once-a-week subject in 2011 from the fifth grade. Most recently, in 2020, the curriculum was adjusted again to start in the third year of elementary school. Simultaneously, the number of classes per week in junior high school was increased from one to two.

The 4th Basic Plan for the Promotion of Education, provided by MEXT lists five fundamental principles for the future of education in the country (Cabinet of Japan, 2023). The first among these is equipping humans with the necessary skills to be capable resources while continuing to study with the goal of contributing to the sustainable development of global society. The specific goals include increased inbound and outbound study abroad, internationalization, and improved foreign language education. The indicators for progress, however, specifically reference achieving certain levels of English by graduation. This push for internationalization is occurring throughout Japanese education, but a Central Council for Education (2018) plan cites higher education as a particularly important section for globalization.

Struggles with Japanese English Education

Despite this emphasis on English and globalization, Japan continues to struggle with overall English attainment levels. In 2023, it ranked at only 87th according to the EF English Proficiency Index, below fellow Asian countries of China and Korea (Education First, 2023). The majority of students spend their early years of education focusing on English study primarily for the purpose of passing tests and succeeding in the university entrance exam (Yamada, 2018). The grammar translation method has also dominated education methods, due to its comparative ease as a method for the teacher (Jones, 2019). Despite attempts to introduce native speakers to support classroom activities and create a natural and authentic outlet for English use through the employment of Assistant Language Teachers, many students continue to struggle to build confidence and comfort in English (Hashimoto & Glasgow, 2021).

At the university level, English students are less bound by the necessities of entrance examinations. While some students may continue to focus on language proficiency tests like the Test of English for International Communication (TOEIC), university students also have the option to study English abroad or more in depth because it connects to their major. The Japanese government has also taken the initiative to attempt to increase the number of English-medium instruction courses in universities through the Top Global University Project, an improvement on previous attempts at internationalizing higher education (Rose & McKinley, 2018). In individual courses, syllabi have less need to focus on teaching to the test and can

more freely implement a variety of topics and teaching styles. Designing curricula that provide English learners with a sense of imagined community, interesting topics in which they can engage, and practical uses of language that encourage communication has the potential to spark student interest and motivation in English language learning.

The Sustainable Development Goals

The Sustainable Development Goals (SDGs) were adopted in 2015 by the United Nations. Their goal is to achieve sustainable development throughout the world and achieve peace and prosperity for all. Many universities in Japan work to incorporate SDGs into their courses, cultivate research opportunities around global issues, and rank internationally in their contributions toward the goals (Ashida, 2023). As universities work to integrate SDG education throughout their curricula, their potential importance in the English classroom becomes apparent. Not only are they a current and relevant international topic, but their inclusion as a classroom topic could also be motivational for students as they recognize themselves as part of the international community that is trying to achieve the goals.

There are 17 goals, and they cover a wide variety of topics (Table 1). The topics range from general areas of environment to human rights, and economic development. Considering the limited length of courses, it would be difficult to incorporate all of the goals into a single course. Careful consideration should be taken in choosing which goals best mesh with the communicative goals of an English class and the sense of international community that courses aim to foster. Student interest is an important motivating factor in education. Classes tailored to student interest have the potential to improve learning outcomes, such as improving reading comprehension (Asgari et al., 2019), and increasing vocabulary learning and recall (Cancino, 2023). It is important to select the goals that are most suited to student interests, specifically within the second language (L2) classroom.

Table 1*List of the 17 SDGs*

Goal 1. No poverty
Goal 2. Zero hunger
Goal 3. Good health and well-being
Goal 4. Quality education
Goal 5. Gender equality
Goal 6. Clean water and sanitation
Goal 7. Affordable and clean energy
Goal 8. Decent work and economic growth
Goal 9. Industry, innovation and infrastructure
Goal 10. Reduced inequalities
Goal 11. Sustainable cities and communities
Goal 12. Responsible consumption and production
Goal 13. Climate action
Goal 14. Life below water
Goal 15. Life on land
Goal 16. Peace, justice, and strong institutions
Goal 17. Partnership for the goals

Japan's International Posture

Despite this, Japan has often been criticized for a failure to take interest in and respond to international society. Before the pandemic, Kuroda et al. (2018) found that despite domestic statistics showing some increase in outbound study abroad, according to the United Nations Educational, Scientific and Cultural Organization (UNESCO), Japan's number of outbound exchange students had been falling. This was attributed to the difference in the more lenient domestic definition of what was considered study abroad. Many questioned whether this downward trend could be attributed to the insular mindset or inward-looking nature of Japanese youth, and indeed some studies found evidence that inward-looking natures could lead to increased concerns towards issues of study abroad (Kojima et al., 2014) or have a polarizing effect on students in combination with frequently seen low achievement goals (Kikuchi et al., 2015).

While research has examined Japanese students' inward-looking nature from several angles, from the perspective of language learning, this study chose to examine international posture (IP). It has relatively widespread and continued use and has clear connections to English education (Botes et al., 2020), making it of particular relevance to topics in the English classroom. A motivational factor in the study of English as a foreign language, International posture can be traced back to "integrativeness" which is a factor by which students of a foreign language are motivated by a desire to integrate into the native community of the language which they are learning (Gardner, 1985). However, as English has developed increasingly as a lingua franca, the established concept of integrativeness has become harder to apply. There is no longer a singular community of native speakers, and the speakers of English as a second

language now greatly outnumber native speakers. Thus, without a goal community in which to integrate, learners of English as a second language are now asked to imagine the international community in which they hope to be a participant (Yashima, 2002).

The measurement of IP has developed since it was first proposed. The original scale was composed of four indicators a) intercultural friendship orientation, b) interest in foreign affairs c) intercultural-approach-avoidance tendency, and d) interest in international occupation or activities (Yashima, 2002). The scale for intercultural friendship orientation was removed in streamlining the survey and removing overlaps (Yashima et al., 2004). In subsequent research, the scale was further modified resulting in the current version composed of the two attitudinal-behavioral propensities: a) intercultural approach tendency, b) interest in international occupation or activities, and the two knowledge orientations: a) interest in international news and b) having things to communicate to the world (Yashima, 2009). Although the “having things to communicate” subscale has been questioned (Toyama & Yamazaki, 2020), the general construct has been used frequently, and in a systematic literature review, was found to be a valid hypothesis with a verified effect on learning motivation (Botes et al., 2020). Some research has also suggested that it may be malleable, through experiences such as study abroad (Geoghegan, 2018), which offers possibilities for increasing language motivation. While integrativeness continues to be used in research and is perceived to be a relevant factor in English learning motivation, there is also research showing that between integrativeness and international posture, the latter is a more significant source of motivation for university students engaged in learning English as a foreign language (Radosavljević Krsmanović, 2021).

Motivation and Interest in Language Learning

Motivation is an important aspect of learning. It plays a part in student engagement in activities and influences how much students will gain from those pursuits (Filgona et al., 2020). In the specific context of second-language learning, motivation has been shown to increase both willingness to communicate and communication frequency in the target language (Lao, 2020). When teachers employ motivational strategies successfully, both in-class and out-of-class behaviors are significantly influenced resulting in increased efforts to use self-learning materials, to decrease language errors, and to make use of new knowledge (Lee et al., 2020). As a complex concept, motivation has a wide range of effects on various aspects of learning, but it can be viewed overall as a boon to the learning process.

International posture has been shown as a factor that strengthens learning motivation and willingness to communicate, as well as improving communication in English (Yashima, 2019). A strong relation was found between IP and the ideal L2 self, another significant aspect of L2 motivation (Véliz-Campos et al., 2020). It has also been found to positively influence the L2 experience and negatively affect the ought-to L2 self, which represents obligational motivation that negatively affected the language learning experience (Zhao et al., 2022). As it continues to be used in countries throughout the world, understanding about its positive effects continues to develop.

Interest, another factor studied in relation to motivation, is considered an antecedent to motivation, and the deepened engagement that this motivation leads to can then both strengthen and extend interest (Sang & Hiver, 2021). It is commonly conceptualized as having two different parts. First, there is situational interest, which is a more immediate reaction to structural features, such as humor, or learning conditions, and second there is individual interest, which is more developed and enduring (Renninger & Hidi, 2017). In compulsory English courses in Japan, individual interest has been shown to positively affect both self-efficacy and competence (Fryer & Ainley, 2019). In a more specific example, Asgari et al. (2019) showed that employing reading materials tailored to match student interests resulted in significant improvements in reading comprehension across skill levels, with interested learners tending to be more diligent and hardworking. In a broader sense, Sang and Hiver (2021) point out similarities between the effects of interest and that of integrativeness, noting that they both can relate to attitudes toward the foreign community that allows use of English. However, considering the expansion of the discourse regarding English language learning, this comparison should not stop at integrativeness, but the similarities to International Posture should also be considered.

While the study of IP has focused on its role in motivating English language learners, its resemblances to other motivating factors like interest suggest that it should be explored more widely. How might it affect students' global citizenship practices, or interest in specific international topics? Because research has been inclined to focus on a more narrow range of areas directly related to language education, this study chose to examine the effect that IP could have on the relevant topic interest in SDGs.

Given the importance of interest, motivation, and creating a curriculum that moves beyond solely grammar-based teaching, this study sought to identify which SDGs could be best adopted as topics within an English classroom. Specifically, it asked:

1. How do demographic factors influence interest in learning about different SDGs as topics in English class?
2. Does International Posture impact students' level of interest in studying about SDGs in English class?
3. Which goals are more highly affected by International Posture, and thus more likely to motivate students to learn English?

Methods

Surveys were conducted at a national comprehensive university in Western Japan. Students were first-year undergraduate students who were attending English language classes as a part of their general or core education classes. Because English is compulsory in the first year, this choice of population provided a broader understanding of the general student population, and not only students who already showed significant interest in taking English as an elective. The purpose of the study and its voluntary nature was made clear to students. Students were assured that their participation, or lack thereof, would have no effect on their grades in the course. Both

the survey and the informed consent forms provided to the students were approved by the university's research ethics committee.

Surveys were completed through the university's online system. Surveys consisted of a collection of questions in Japanese to determine the IP of students as well as their interest in studying each of the individual SDGs in English classes, and basic demographic information. For international posture, Yashima's three well confirmed subscales were used: "Intergroup Approach Tendency (IAT)" (7 items), "Interest in International Vocation or Activities (IIV)" (6 items), and "Interest in International News (IIN)" (4 items) (Toyama & Yamazaki, 2020; Yashima, 2009). A pilot survey with different students in the first semester did not validate the "Having things to communicate" subscale, and so, it was not included, to reduce burden on the survey takers. Answers were on a 6-point Likert-type scale following the example of recent researchers who used this type of scale (Toyama & Yamazaki, 2020).

In addition, six questions were asked for each of the goals. Three questions were used to discover interest regarding using the SDG as a topic within English class, "Topic Interest." Three questions were used to determine the perceived value of the goal in students' career and life, "Personal Value." Questions for Topic Interest were adapted from the Academic Interest Scale's emotional interest subscale, addressing the emotional component of interest (Luo et al., 2019). Questions for Personal Value were adapted from the same Academic Interest Scale's value subscale, which measures the perceived significance that a topic will have in the students' lives, addressing the value-related component of interest (Luo et al., 2019). Answers for the interest and personal value questions used the original scale's 5-point Likert scale. Results were analyzed with the Statistical Package for Social Sciences (SPSS) software Version 28.0 (IBM, Armonk, New York, USA). Finally, students who indicated why they were interested in studying an SDG in English class were asked to select the main reason for their interest from a list of options. They were also able to input their own reason if they felt that the listed reasons were not applicable.

Results and Analysis

Using the survey data, students' IP and their Topic Interest and Personal Value for each goal were analyzed. The analysis also examined differences in gender and the department in which students were enrolled.

Demographics

Two hundred sixty-six first year university students responded to parts of the survey. Of the students studied, the gender distribution was approximately even (141 male, 125 female). When Japanese students enter university, they enter not into the university as a whole, but rather join a specific school, or department, which later allows them to choose from a variety of different majors. The respondents were enrolled in seven different departments, with engineering and humanities being the most common, at 21.1% and 18.8% respectively. Two classes each were science, economics, and medicine department students, and one class each

was agriculture and education. The departments of veterinary medicine and global and science studies were not surveyed due to their lack of participation in the standard general education English courses.

Factor Analysis

Exploratory factor analysis with Promax rotation was conducted for the questions pertaining to International Posture. Individual questions were coded by their subscale name, Intergroup Approach Tendency (IAT), Interest in International Vocation or Activities (IIV), and Interest in International News (IIN) followed by an item number. Analysis of the scree plot suggested three factors in the final analysis, which was further confirmed using a guideline of eigenvalues > 1 . With over 200 responses, items with a factor loading of less than .40, were considered to be not significant and discarded (Field, 2017). In addition, factors with less than two items were considered ill-defined and removed (Tabachnick & Fidell, 2019). The first analysis yielded four factors, and IIV1 was removed due to its low loading, this left factor 4 with only two items, so IAT6, and IIV5 were also removed. When analysis was repeated, it yielded the expected three factors (Table 2). The IIV subscale consisted of 4 items ($\alpha = .87$), the IAT subscale consisted of 6 items ($\alpha = .75$), and the IIN subscale consisted of 4 items ($\alpha = .76$). Factor scores for each subscale were then calculated using the regression predictor to account for the differing weights (Schreiber, 2021).

Table 2
Factor Analysis

	Factor 1	Factor 2	Factor 3
Item (no.)	IIV	IAT	IIN
IIV (2)	.93		
IIV (4)	.88		
IIV (6)*	.69		
IIV (3)	.47		
IAT (7)		.76	
IAT (3)		.70	
IAT (5)		.52	
IAT (1)		.50	
IAT (2)*		.46	
IAT (4)		.44	
IIN (1)			.88
IIN (4)*			.70
IIN (3)			.50
IIN (2)			.47

Note: * indicates reverse scored (negatively worded) items

T-tests showed that while there was not a significant difference in IIV or IIN between genders, there was a significant difference for IAT, with the average score for females ($M = 0.15$, $SD =$

0.9) being higher than that of males ($M = -0.13$, $SD = 0.9$), $t = -2.48$, $p = .014$. There were also significant differences in IAT based on students' area of study. A one-way ANOVA showed that there were also differences in each IP subscale score based on department for IIV ($F(6, 258) = 3.82$, $p = .001$), IAT ($F(6, 258) = 3.56$, $p = .002$), and IIN ($F(6, 258) = 2.19$, $p = .04$). Specifically, for IIV, Tukey's post-hoc showed that students in the department of medicine ($M = 0.6$, $SD = 0.9$) had a significantly higher score than students in the departments of engineering ($M = -0.2$, $SD = 0.9$), humanities ($M = -0.2$, $SD = 1$), and agriculture ($M = -0.3$, $SD = 0.6$). For IAT, students in the department of medicine ($M = 0.5$, $SD = 1$) had a significantly higher score than students in the departments of engineering ($M = -0.3$, $SD = 0.8$), and humanities ($M = -0.2$, $SD = 0.9$). Tukey's post-hoc did not show significant pairwise results for IIN.

Exploratory Factor Analysis was also conducted for the questions regarding Topic Interest and Personal Value. For all goals, the same two factors were found. Topic Interest and Personal Value. Factors for all goals showed acceptable reliability with Cronbach's alpha values of over $\alpha = .70$, with the majority showing good reliability of $\alpha = .80$. Loading factors for individual questions varied somewhat from goal to goal but were all above the 0.40 cut-off for significance. Factor scores were calculated using the regression predictor to ensure that the differing items weights were accounted for (Schreiber, 2021).

For the first research question, which was the effects of demographics, T-tests showed that there were significant differences between genders for Topic Interest for some goals. Goals 1, 2, 3, 5, 6 and 16 showed significant differences, and for each of them, the interest was higher for female students. The biggest difference was seen for goal 5: Gender Equality. However, a one-way ANOVA did not show significant differences in interest for any of the goals across departments. Personal Value showed significant differences for goals 5, 7, 9, 10, 14 and 15. Female students scored higher for goal 5, 10, and male students for goals 7, 9, 14, and 15.

For research question 2, whether International Posture impacts students' level of interest in studying about SDGs in English class, multiple regression analysis was repeated with Topic Interest for each goal as the dependent variable and IIV, IAT, IIN, and Personal Value as independent variables. Table 3 shows the results of the regression analysis for IAT and Personal Value for each goal. Neither IIV nor IIN were significant for any of the goals. Non-significant variables were not included in the table for brevity. IAT had a significant and positive effect for 14 of the goals, and Personal Value had a significant and positive effect for all goals except for goal 12. This showed that not all subscales of International Posture played a role in determining students' topic interest, but the subscale IAT affected topic interest in most of the goals.

Table 3*Significant Regression Analysis Coefficients for Each Goal*

SDG	R^2	Variable	β	T	p
Goal 1:	.24	IAT	0.33	3.41	<.001
		Personal Value	0.32	5.21	<.001
Goal 2:	.18	IAT	0.36	3.61	<.001
		Personal Value	0.25	3.84	<.001
Goal 3:	.20	IAT	0.34	3.47	<.001
		Personal Value	0.26	4.04	<.001
Goal 4:	.17	IAT	0.31	3.09	.002
		Personal Value	0.28	4.38	<.001
Goal 5:	.20	IAT	0.29	2.88	.004
		Personal Value	0.30	4.60	<.001
Goal 6:	.11	IAT	0.30	2.85	.01
		Personal Value	0.18	2.59	.01
Goal 7:	.16	IAT	0.36	3.57	<.001
		Personal Value	0.23	3.46	<.001
Goal 8:	.15	Personal Value	0.23	3.52	<.001
Goal 9:	.11	IAT	0.31	3.02	.003
		Personal Value	0.21	3.08	.002
Goal 10:	.14	IAT	0.31	2.96	.003
		Personal Value	0.21	3.01	.003
Goal 11:	.15	IAT	0.34	3.25	.001
		Personal Value	0.18	2.66	.01
Goal 13:	.10	Personal Value	0.19	2.76	.01
Goal 14:	.14	IAT	0.27	2.66	.01
		Personal Value	0.25	3.74	<.001
Goal 15:	.14	IAT	0.24	2.33	.02
		Personal Value	0.26	3.80	<.001
Goal 16:	.18	IAT	0.22	2.18	.03
		Personal Value	0.27	4.10	<.001
Goal 17:	.22	IAT	0.24	2.45	.02
		Personal Value	0.36	5.75	<.001

For question 3, regarding which goals were more highly affected by International Posture, both the R^2 value and the β value were examined. The R^2 value showed that the independent variables explained the highest percent of variance in Topic Interest for goals 1, 17, 3 and 5, whereas for goals 13, 6 and 9, up to 50% less of the variance was explained. The β values were also examined to compare the effects of IAT and Personal Value for each goal. When IAT was significant, the standardized beta ranged from 0.22 to 0.36, and when Personal Value was

significant, it ranged from 0.18 to 0.36. For many goals, the standardized beta was similar for both IAT and Personal Value, although there were some goals where the β value for IAT was notably higher (Goals 6, 7, 11), and one case where Personal was notably higher (Goal 17).

Students who indicated that they desired to study a goal in English class were asked to select a reason for their feelings. There were six reasons provided: 1) usefulness in future work, 2) desire to research the topic in English, 3) wanting to study global topics in English class, 4) wanting to converse fluently about international topics, 5) personal interest in the goal, and 6) awareness that it must be achieved internationally (global nature). Students also had the option to select “other” and give further explanation. The valid percent for each answer is shown in Table 4.

Table 4

Reasons for Desire to Study Each Goal within English Class

	Work	Self-Study	Int. Study Topic	Conversation	Personal Interest	Global Nature	Other	Total
	%	%	%	%	%	%	%	%
Goal 1	4.5	3.8	39.1	36.1	9.0	6.0	1.5	100
Goal 2	2.8	9.2	35.8	34.9	7.3	9.2	0.9	100
Goal 3	16.7	3.9	26.5	33.3	15.7	2.9	1	100
Goal 4	10.3	2.6	23.3	22.4	35.3	5.2	0.9	100
Goal 5	4.9	6.6	18.9	26.2	36.9	2.5	4.1	100
Goal 6	6.9	8.9	24.8	32.7	8.9	16.8	1	100
Goal 7	5.4	10.7	21.4	33	23.2	3.6	2.7	100
Goal 8	9.5	7.4	10.5	33.7	34.7	4.2	0	100
Goal 9	16.8	6.3	15.8	31.6	20	7.4	2.1	100
Goal 10	5.2	5.2	27.4	32.6	20.7	8.1	0.7	100
Goal 11	8.2	9.6	16.4	27.4	28.8	8.2	1.4	100
Goal 12	8.4	15.7	19.3	20.5	31.3	4.8	0	100
Goal 13	2.8	5.6	27.8	35.2	24.1	4.6	0	100
Goal 14	2.1	7.4	17.9	38.9	30.5	3.2	0	100
Goal 15	3.5	11.6	25.6	30.2	25.6	3.5	0	100
Goal 16	7.6	5.9	17.8	36.4	25.4	5.1	1.7	100
Goal 17	7.4	8.5	26.6	26.6	24.5	6.4	0	100

*The most selected answer for each goal is shown in bold

Of students who indicated why they wanted to study a goal, few selected the reasons: relation to job, desire to be able to research about it on their own, or the need for the goal to be achieved internationally. Instead, many students who had a desire to study each goal indicated that they wanted to use internationally related topics for English class, that they wanted to be able to talk fluently about international topics, or that they were personally interested in the topic. On

average, across all the goals, a desire to be able to talk about the subject, was the most commonly selected reason (31%), followed by wanting to use international topics in English class (23%) and personal interest (23%). Two of the top responses supported the significance of the IAT subscale in determining interest, considering the connections between the overall IP scale and increased communication, and the specific reference of the IAT subscale in evaluating students' desire to interact with different groups of people. Students who chose to provide their own answer frequently combined aspects of two of the available answers, such as "It is an international problem, and I think that there are a lot of materials available in English," so there did not appear to be a lack of choices.

Discussion and Recommendations

From these results, it was clear that demographics can affect aspects of IP. Although there was not a significant difference between genders for IIV or IIN, there was a significant difference for IAT. This supported the IP scale's, or at least the IAT subscale's similarity to integrativeness, considering that Mori and Gobel (2006), in a notably comprehensive study of motivating factors for Japanese EFL students, found that integrativeness was the only statistically significant difference in language motivation between genders.

For the first research question, demographics had some but limited influence on interest in learning about SDGs. Similar to the results for IP, though not all goals had significant differences for gender, when there was a significant difference between goals, female students consistently showed higher interest. The goals showing a significant difference were related to people's well-being, such as zero hunger, gender equality, and peace, suggesting a greater importance of human connection. However, students' majors or areas of study did not significantly affect interest in the goals, suggesting that they could be used to motivate regardless of students' area of study.

For the second research question, IAT was found to have an effect on Topic Interest for a majority of the goals. However, goals 8 (decent work and economic growth), 12 (responsible consumption and production), and 13 (climate action), were not significantly affected. The lack of any significant effect on goal 8, likely stemmed from the focus on work, considering that IIV was not a significant factor for any of the goals, and few students gave future career as a reason for their desire to study a goal in English. Goal 12 is generally enacted on a personal level, and thus likely did not have the same international image as the other goals. Of all the goals, it had the highest percentage of students whose desire to study it stemmed from the wish to research it on their own, which similarly suggested that it was a more personal goal. Finally Goal 13 was not affected, in contrast to the similarly environment-themed goals 14 (life below water) and 15 (life on land). This may be attributed to its comparatively broad framing, which could make it more difficult to discuss.

For the third research question, there was a moderate degree of variation among the standardized beta values and the percent of variance explained by each model. Considering both factors, primarily the people related goals should be strongly considered as topics for

English classes, such as goals 1, 2, 3 and 5, with goal 1 as a particularly good candidate. In addition to the connection to IP, these SDGs are also topics that are in many ways easier to address with the language abilities that are available in an EFL classroom. On the other hand, because the differences between most of the goals were moderate, it is easier to suggest the goals that are less appropriate, namely goals 14 and 15, and the goals that were found to be insignificantly affected by IAT above for research question 2. Finally, considering that IP has a moderate effect for most of the goals, adapting the class to meet potential student interests related to work, or department and field of study should also be contemplated.

Considering the educational system of Japan, it is recommended that SDGs be implemented as topics for English classes in university programs where there is more freedom of curriculum. Primary and secondary education curricula remain limited by state approved textbooks and the driving need to prepare students for college entrance exams, although incorporation of SDGs into the English class at those levels is still suggested when possible.

It is also suggested that teachers do not shy away from including SDGs as a topic out of concern of lack of knowledge or still-undeveloped interest. Even with Japan's limited curriculum, for example, Imanishi (2020) found that while the terms SDGs may not be explicitly stated, that not only does "environment" appear as a topic in most junior high school textbooks in a rural prefecture of Japan, the use of environment as a topic increased student engagement in writing activities. Furthermore, a survey of Japanese university students showed at least 73.7% were aware of the term, and the most common reason for their knowledge was learning in class (Ando et al., 2019). If a majority of students are first learning about the existence of SDGs in classes, a portion of the students who already show interest in learning about the them, were likely first introduced to them in their school classes. Therefore, use as a topic in English class may be the first step in the cycle of exposure and potential for interest development. It should also be noted that students' reported knowledge and awareness does not necessarily equate to actual knowledge and awareness levels. In fact, it was shown by Oltra-Badenes et al. (2023) that students' actual knowledge surrounding SDGs was higher than they reported, likely due in part to previously learning about the themes of goals without explicit reference to the terminology. Therefore, it is suggested that incorporating SDGs as a topic may serve as an effective precursor to knowledge and interest.

Finally, the use of SDGs as a topic for improving motivation in English language education should also be considered outside of Japan. They are a global topic, and international research shows that at the university level, there is interest in, if not knowledge of, the goals in a variety of countries throughout (Bekteshi & Xhaferi, 2020; Novieastari et al., 2022; Smaniotto et al., 2020; The national treasury and planning state department for planning, 2019). Moreover, recent surveys indicate that knowledge of the SDGs is increasing and is particularly high amongst the under-30 population (GlobeScan, 2023). This again suggests that young people are taking a greater interest in the SDGs and could serve as a motivating factor for language learners internationally. It is proposed to utilize the topic of SDGs not only at the university level, but also in the education leading up to it.

Conclusion

Interest plays an important role in second language learning. This study investigated student interest in SDGs at a Japanese university in order to answer the following questions: Do gender and department affect interest in studying SDGs? How and to what degree does IP affect interest in learning SDGs? Findings showed that gender influenced students' IP and interest, and IP that had an effect on interest in most of the goals.

International Posture is a recognized factor in increasing motivation for English learning, and based on this study's findings, is also a factor in increasing interest in learning about many of the SDGs in an English-speaking environment. Considering its contribution to both of these factors, attempting to incorporate SDGs into English curricula can not only lead to selection of topics that cater to motivated English learners, but it also coincides with one of Japan's major goals for educating globally minded students. Therefore, it should be considered as a multi-pronged approach to further Japan's goals for the internationalization of higher education. However, it is important to be aware of the potential differences between students, particularly based on gender. In the spirit of goals 4 and 5, Quality Education, and Gender Equality, teachers should also be aware of the needs of male students and consider options to increase their engagement and sense of international community gained from the subject matter.

There are several limitations to this study. First, while the focus on students in first year general education courses allowed a broader view into multiple departments, it did not address the perspectives of more advanced or specialized students. Although many first-year students are not yet sure of what their future holds, students who continue to develop more specialized majors may wish to focus more directly on an English language community that they are more likely to encounter in their own future. Second, although the theoretical connection between IP and interest was confirmed, practical applications in the classroom still need to be addressed, such as finding appropriate ways to integrate the complex topics raised by SDGs in a level-appropriate manner. Third, students completed the survey without a detailed explanation of the individual goals. Although student responses to a pilot survey indicated that the large majority of students consider themselves moderately knowledgeable about SDGs, it is possible that responses for the less commonly discussed goals were affected by lack of knowledge. Finally, although the integration of SDGs could be effective for motivating classes that have higher IP, it may be less effective in classes that have low IP in the first place. If, however, IP is malleable, then efforts to improve the IP of a class could have particularly positive effects in both interest and motivation. Considering this fact, future studies could examine the potential for change in IP and whether classroom-based internationally oriented experiences such as SDG study can contribute to its change.

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