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by

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*Annual Review of English Language Education in Japan*  
(ARELE), 27, 1-16.

Published by the Japan Society of English Language Education

ISSN: 1344-8560

# A New Questionnaire to Assess Japanese EFL Learners' Motivation: Development and Validation

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## Abstract

The purpose of this paper is to describe the development and validation of a questionnaire designed to assess Japanese EFL learners' motivation at the tertiary level. The instrument was developed based on self-determination theory (SDT). SDT has frequently been applied in L2 motivation studies in Japan; most of these studies used or adapted one questionnaire (Hiromori, 2006a) and yielded mixed results, both in line and out of line with SDT. Such outcomes suggest the need to reconsider how the theory is understood and how that understanding is reflected in commonly used questionnaires in the Japanese EFL context. The current study described the examination and refinement of the definition of the SDT construct in the Japanese EFL setting and reviews the relevant literature. The process of developing a new questionnaire based on the refined definition was then described in a step-by-step manner. To validate the instrument, three methods were employed: expert judgment, exploratory factor analysis, and computation of reliability coefficients. The results indicate that the new questionnaire has higher validity and reliability than the previous one widely used in the field. The authors argue that the new questionnaire developed in this study, with its refinements and validation, may contribute to expanding the opportunity to enhance the L2 motivation of Japanese university students.

## 1. Introduction

In second language acquisition (SLA) research, second/foreign language (L2) learners' motivation is one of the most abundantly investigated areas (for a review, see Lasagabaster, Doiz, & Sierra, 2014). One of the most established and influential theories in the field is self-determination theory (SDT) (Deci & Ryan, 1985, 2000, 2002). SDT was originally a large-scale theory used to explain human motivation in general. The versatile nature of the theory has allowed researchers in various domains (e.g., sport and physical activity, religion, health and medicine, and virtual environment) to use SDT to look into people's motivation in different situations. In addition to being versatile, SDT is one of the most empirically tested motivational

theories and has been verified in various contexts (Deci & Ryan, 2008). Many SLA researchers have applied the framework to the language-learning context, thereby helping to illuminate L2 motivation processes (Noels, 2003). SDT studies have been conducted in many countries, including Japan. The vast majority of such studies conducted in Japan have used or adapted one questionnaire (Hiromori, 2006a) and yielded results both in line and out of line with the theory. The mixed results encouraged researchers to uncover the cause of such inconsistencies, which suggested reconsideration of how the theory is understood and applied in the Japanese EFL setting (Agawa & Takeuchi, in press-a, in press-b). In line with these studies, the current study will (1) examine and refine the definitions of SDT constructs in the Japanese EFL context, (2) develop a new questionnaire to measure L2 motivation among Japanese university students, and (3) assess the new instrument.

## **2. Literature Review and Research Rationale**

### **2.1 Self-Determination Theory**

In SDT, motivation resides along a continuum, with intrinsic motivation at one end, extrinsic motivation in the middle, and amotivation at the other end (see Figure 1). Intrinsic motivation refers to the motivation to engage in something because the action itself is enjoyable and satisfying, whereas extrinsic motivation is a drive to do something for an independent outcome (Deci & Ryan, 2000). Deci and Ryan postulated four regulations within extrinsic motivation, depending on the degree of internalization involved in the action: integrated, identified, introjected, and external. As their labels suggest, integrated regulation is the most self-determined form of regulation, whereas external regulation is the least autonomous. Placed at the opposite end of the scale from intrinsic motivation is amotivation, a state of no regulation/motivation.

SDT presupposes the existence of three basic psychological needs: the need for autonomy, competence, and relatedness. This theory offers different types of motivation and degrees of regulation to show how we can be motivated, depending on how much our needs are satisfied. Thus, the more individuals' innate psychological needs of autonomy, competence, and relatedness are fulfilled, the more their behavior is intrinsically motivated.

The need for autonomy is defined as individuals' desire for "being the perceived origin or source of one's own behavior" (Deci & Ryan, 2002, p. 8). Deci and Ryan further explained that autonomy pertains to acting from interest and integrated values; thus, "when autonomous, individuals experience their behavior as an expression of the self, such that, even when actions are influenced by outside sources, the actors concur with those influences, feeling both initiative and value with regard to them" (p. 8). Interpreted into the Japanese EFL context, the need for autonomy is defined as the learners' desire to engage in English learning autonomously for their actions to be more self-determined, and to take responsibility for their actions (Hiromori, 2006a). In other words, it has been understood as the learners' desire to determine their actions regarding

English learning and take responsibility for their own studies. This definition is reflected on widely used questionnaire items to measure the degree of Japanese EFL learners' autonomy needs fulfillment, such as "I am free to express my ideas and opinions on English learning," "My feelings are taken into consideration in English classes," "My teacher asks for the opinions of students about the content and/or procedure of the class," and "My teacher always decides what to study in the English course" (reversed item) (Hiromori, 2006a, 2006b; Tanaka & Hiromori, 2007).

The need for competence refers to a person's desire to feel "effective in one's ongoing interactions with the social environment and experien[ce] opportunities to exercise and express one's capacities" (Deci & Ryan, 2002, p. 7). Applied to the English learning setting in Japan, they are interpreted as individuals' desire to be able to understand and make themselves understood in English based on their capability and confidence to complete English assignments and tasks successfully (Hiromori, 2006a). These definitions are the basis of questionnaire items commonly used to measure the degree of competence needs satisfaction of Japanese EFL learners, such as "I think I can get a good grade in English," "I am satisfied with my effort in English classes," and "I feel a sense of achievement in the English course" (Hiromori, 2006a, 2006b; Tanaka & Hiromori, 2007).

Finally, the need for relatedness is expressed in the desire to feel "connected to others, to car[e] for and [be] cared for by those others, to hav[e] a sense of belongingness both with other individuals and with one's community" (Deci & Ryan, 2002, p. 7). In the English learning setting in Japan, these needs can be translated as wanting to connect with other classmates and the teacher as well as engage in English learning cooperatively with other classmates and the teacher (Hiromori, 2006a). Questionnaire items reflecting this definition include "I work hand-in-hand with my friends on a group activity" and "I get along with my friends during an English class" (Hiromori, 2006a, 2006b).

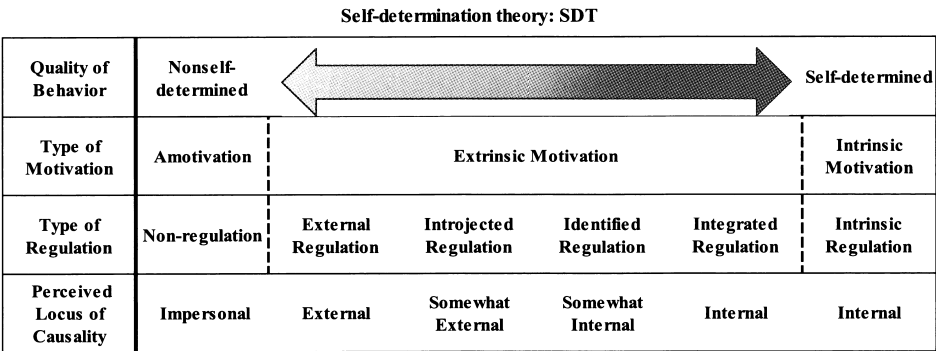


Figure 1. The self-determination continuum, with types of motivation, types of regulation, and locus of causality. Adapted from Deci, E. L., and Ryan, R. M., (Eds.), 2002, *Handbook of self-determination research*, p.16.

## **2.2 Research Based on SDT in the Japanese EFL Context**

In the era of globalization, a strong emphasis is placed on English in the Japanese formal educational setting; it is one of the three main subjects in junior and senior high schools, and almost all universities require English language courses for at least first- and second-year students, regardless of their majors. However, students are not always willing to learn English; some students even experience demotivation when learning English (Agawa & Ueda, 2013; Kikuchi, 2015). Given such circumstances, EFL learners' motivation is of great interest to many researchers and practitioners in Japan, and more knowledge on this matter has been actively sought by using various theoretical frameworks. SDT has become one of the more frequently employed motivation theories in research on L2 motivation in Japan, as the theory allows researchers to investigate several types of motivation/regulation on a continuum beyond the intrinsic–extrinsic dichotomy. The vast majority of such studies have used the questionnaire originally developed by Hiromori (2006a). In fact, all the SDT-based survey studies that we discuss in this subsection (except for Agawa & Takeuchi, *in press-a*) used or adapted his questionnaire.

Hiromori (2006a) was the pioneering researcher who applied SDT in the Japanese EFL context. He developed a questionnaire to measure EFL learners' psychological needs fulfillment and motivation and collected data from university students. He then used a structural equation modeling (SEM) analysis to confirm the causal relationship between the fulfillment of innate needs and motivation as hypothesized in the theory. Yet the model's goodness of fit was relatively poor.<sup>1</sup> In Otsoshi and Heffernan's (2011) study, data were collected at two universities, and participants were either business or English majors. The results yielded a somewhat acceptable level of fit indices of the model; however, the sufficiency of autonomy needs did not display a causal relationship with intrinsic motivation as SDT posits. Moreover, Agawa and Takeuchi's (*in press-b*) study, in which 317 participants from academically varied universities responded to a questionnaire, found that autonomy needs fulfillment has a negative impact on intrinsic motivation of Japanese L2 learners and, furthermore, might even demotivate them. The fit indices of the model reached an acceptable level in their study.

Some studies have sought to determine if pedagogical interventions to fulfill English learners' three basic needs improve their intrinsic motivation. A few studies, such as Dei (2011), Hiromori (2006a, 2006b), and Tanaka and Hiromori (2007) demonstrated that satisfying the innate needs could generally enhance English learners' motivation. Conversely, Maekawa and Yashima (2012) did not observe an increase in their participants' self-determined regulations in their L2 study, although their psychological needs were successfully satisfied.

The mixed results presented by previous research are confusing for researchers and practitioners and do not provide conclusive suggestions on how to successfully motivate Japanese EFL learners. To probe the cause of the inconsistency, Agawa and Takeuchi (*in press-a*) conducted an interview study in which they re-examined the meanings of satisfying Japanese university EFL

learners' need for autonomy, competence, and relatedness. The analysis of the data revealed two points that are worth mentioning: (i) whereas the fulfillment of autonomy—meaning freedom of choice—might motivate some L2 learners, it can demotivate others; and (ii) a good relationship with the teacher may motivate learners, while a good relationship with other classmates can have a positive or marginal impact on L2 motivation, depending on the learner. Drawing on these results, the researchers pointed out that the mixed results in previous studies may have been caused by the commonly used questionnaire based on the assumption that autonomy fulfillment equals giving a choice and that relatedness fulfillment is brought about only by a good student–student relationship. Agawa and Takeuchi argued the need to consider (1) a redefinition of L2 learners' autonomy need; (2) an amendment of autonomy-related items based on the redefinition; and (3) the addition of items to measure the teacher–student relationship when improving the commonly used questionnaire in the Japanese EFL setting. Bearing these three points in mind, this study aims to (a) develop a new version of the questionnaire that reflects the three points argued by Agawa and Takeuchi (in press-a) and (b) validate the new instrument.

### **3. Method**

The method for developing a new version of the questionnaire and verifying it is as follows. In response to Agawa and Takeuchi's (in press-a) results, as well as following the criteria presented by Dörnyei (2010) and Sakai and Koizumi (2014), the authors of this study started with a careful scrutiny of the relevant literature. We examined definitions of not only autonomy need but also other constructs in SDT—the need for competence, the need for relatedness, intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation. We then developed an item pool for all the constructs. Based on the refined definitions, we selected items to include in the first draft of the new questionnaire. At this point, we used expert judgment to review the items for redundancy, content validity, clarity, and readability. We next administered the draft to three university students to obtain feedback, based on which the draft was amended. The revised draft of the questionnaire was presented to 210 Japanese university students, and their reactions were collected. We conducted an exploratory factor analysis (EFA) with the collected data to determine the emerging factors. Finally, we verified the internal consistency of the questionnaire. We will describe the procedure in a step-by-step manner in the following sections.

#### **3.1 Verifying the Definitions of the Constructs**

When developing a questionnaire within a framework of a theory, examining definitions of constructs in light of the theory is an important step for ensuring the content validity of the instrument (Dörnyei, 2010; Sakai & Koizumi, 2014). Therefore, the authors of this study began the development process by examining the definitions of the SDT's constructs. First, we reviewed SDT studies conducted in the Japanese EFL setting (e.g., Dei, 2011; Hayashi, 2011; Hiromori,

2006a; Otoshi & Heffernan, 2011; Sakai & Koike, 2008; Tanaka & Hiromori, 2007) and listed their working definitions of the constructs. Then, we compared their working definitions with Deci and Ryan's (2002) original set. The definition of each construct was carefully checked to determine if they matched the original definition and, at the same time, fit in the Japanese EFL setting. This careful comparison enabled us to decide on whether to redefine, refine, or use the working definition as is. When redefining and refining the existing definitions, we referred to—in addition to Deci and Ryan—the results of Agawa and Takeuchi's (in press-a) interview study, in which they probed the relationship between needs satisfaction and L2 motivation of Japanese university students. The process yielded a new set of working definitions of the SDT constructs applied to the Japanese EFL context (Table 1).

It should be noted here that, of all the existing definitions, autonomy need required the most consideration and a major revision. In the Japanese EFL context, the need for autonomy has been understood as learners' desire to determine their actions and take responsibility for the learning outcome. This, compared with the SDT's original definition, lacks the aspect that the concept does not exclude influence from others as long as the actor concurs with it. Furthermore, Agawa and Takeuchi's (in press-a) results indicated that, although giving choices may motivate some L2 learners, it may demotivate others. Thus, the current definition may not reflect Japanese EFL learners' actual autonomy need. Therefore, we rewrote the autonomy need definition so that it (1) does not exclude influence from outside sources and (2) does not focus only on learners having discretion.

### **3.2 Developing the Item Pool**

The item pool was developed by collecting items from the relevant literature and creating new items. Most items were taken from previous SDT studies that used a questionnaire in the Japanese EFL setting (e.g., Dei, 2011; Hayashi, 2011; Hiromori, 2006a; Otoshi & Heffernan, 2011; Sakai & Koike, 2008; Tanaka & Hiromori, 2007). Some items were written by the authors based on the interview study conducted by Agawa and Takeuchi (in press-a) and the studies that explain and/or support their findings. The newly added items were created to reflect the modified construct definitions and to add greater variety in some of the constructs. The original item bank contained 132 items. Dörnyei (2010) suggested that the original item pool should include one and a half to four times more items than the final scales. As his suggestion implies, a larger item bank allows us to be more selective in the process of questionnaire development. As a result, we collected and/or created as many items as possible at this point. All of the items were written in prospective participants' native language (i.e., Japanese). They were reviewed by one of the authors of this paper to ensure that they were succinctly worded, with each item containing one construct. Revisions were made where deemed necessary.

Table 1

*Working Definitions of SDT Constructs in the Japanese EFL Setting*

Construct	Definition
The need for autonomy	The desire to engage in learning in and outside of classes upon understanding and concurring on the value of learning
The need for competence	The desire to understand the contents of English classes and to become good at English
The need for relatedness	The desire to build and maintain a good relationship with the teacher and other classmates
Intrinsic motivation	Motivation that involves behavior performed for its own sake—for the genuine interest in engaging in the action or for the pleasure and satisfaction entailed in the action
Identified regulation	The state in which people take an action because they acknowledge and understand the value and importance of the behavior.
Introjected regulation	The state in which an action is caused by the feeling of guilt or pride. Introjection-based behaviors are performed to avoid anxiety, shame, or guilt.
External regulation	The state in which the source of a person's action is external pressure. Externally motivated people do not accept the value of the action.
Amotivation	The state of lacking motivation, intrinsically or extrinsically. When people are amotivated, people refuse to take an action.

**3.3 Selecting Items and Piloting**

The refined item pool was subjected to expert judgment; a specialist on English education was given explanations and definitions of the SDT constructs before she was asked to judge if the items included under each factor (1) reflected the definition of the factor, (2) was expressed clearly, and (3) was written in plain and easy-to-understand Japanese. After the expert examined all the items, she and one of the authors of this paper collaborated to select items for inclusion in the first draft of the questionnaire.

The first draft of the questionnaire contained three sections: one for measuring the basic needs (i.e., the Psychological Needs Scale), another for measuring English learning motivation (i.e., the English Learning Motivation Scale), and a third asking for demographic information. The Psychological Needs Scale contained 20 question items, and the English Learning Motivation Scale contained 26. Following Dörnyei (2010), we placed the demographic section at the end of the questionnaire; this section asked respondents to indicate their gender, nationality, age, year in university, experience abroad, and English proficiency level.

The draft was piloted with a few students for additional feedback; three university students were asked to respond to the questionnaire and provide feedback on the clarity of the layout,



instructions, and the question items. They were also asked to report any questions that were difficult and/or awkward for them to answer. Furthermore, they were asked to let the researchers know of any issues that they noticed. The students received a worksheet listing these points and were asked to write down their comments. Reflecting their comments, we further refined the instrument.

### 3.4 Final Piloting

**Questionnaire respondents.** Using the revised draft of the questionnaire, we administered a field test with 210 EFL learners in Japan, with their written consent. All of the participants were provided with the background to and summary of the research and the contact information of one of the authors of this paper. We intentionally collected data from students with various characteristics and traits as testing a questionnaire with a homogenous sample might result in producing a highly context-dependent instrument (Agawa & Takeuchi, in press-a). Therefore, the questionnaire was administered at five academically varied universities; the participants' majors also varied (e.g., business administration, economics, English, engineering, Japanese, medicine, nursing, sociology, and sports science). Reflecting the varieties of the students, their English levels (self-reported) varied as well, with the most proficient student falling in the B2.2 or higher level of the CEFR-based framework for EFL in Japan (CEFR-J)<sup>2</sup> and the least proficient falling in the A1.1 level of CEFR-J.

**Data analyses.** We employed three main methods to obtain information about the validity and reliability of the questionnaire: an expert review, an EFA, and reliability values. First, as previously described, to ensure the content validity of the constructs of the scales, we carried out an expert review of all question items during the questionnaire's development. Second, to empirically illustrate the construct-related validity of the questionnaire, we conducted an EFA on the data collected from the respondents. An EFA is a procedure often used in questionnaire development to examine if a group of items cluster together to form a construct. This procedure can also be used to find out whether or not the items are successfully put together as they are intended in the processes of item selection and expert judgement. In other words, an EFA can—albeit somewhat weakly—confirm the content validity of the instrument. Finally, Cronbach's alpha index was computed to examine the internal reliability of each construct in the scales. SPSS Statistics Version 20 was used for the EFA and when computing the reliability coefficients. In the following section, we present the results of the EFA and reliability values and discuss the validity and reliability of the modified questionnaire.

Before the collected questionnaire data were subjected to an EFA, each response was checked; seven cases that did not seem to include sincere responses (e.g., choosing five on the scales throughout) were excluded, leaving 203 responses. In addition, the distribution patterns of the data were examined by looking through the skewness and kurtosis values of each item. The

kurtosis values of items 11 and 13 on the motivation scale were larger than  $\pm 2$ , signaling the non-normality of the item score distribution. Therefore, they were excluded from further analyses.

## 4. Results and Discussion

### 4.1 Psychological Needs Scale

**Factor structure.** An EFA (maximum likelihood method with promax rotation) was performed on the questionnaire data. After the initial run of the EFA on the data, items with loadings smaller than .40 were eliminated, following Shigemasu, Yanai, and Mori (1999). In addition, if items had loadings larger than .40 on more than two factors at the same time, they were eliminated. The factor analysis was repeated on the remaining items until all the items had loadings larger than .40 and none of them had similar loadings on two or more factors. The resulting pattern matrix for the Psychological Needs Scale is shown in Table 2. As indicated in the table, three factors emerged just as postulated in the theory.

Two of the items for measuring the relationship between the teacher and students—namely, item 3 “I think my English teacher’s demeanor makes it easy for students to ask questions” and item 2 “I think my English teacher understands students’ feelings”—were placed in the first factor of the Psychological Needs Scale, together with the other four items intended to be in autonomy. As the number and total of the loadings of the autonomy items surpassed those of the teacher–students relatedness ones, the first factor was named *autonomy*.

In light of this result, we reexamined the items designed to gauge relationships between the teacher and students and those intended to measure autonomy. One possible reason why items 2 and 3 (i.e., items originally written for the teacher–student relationship) and autonomy ones were clustered together was that these items are close in meaning. For example, the teacher–students item “I think my English teacher understands students’ feelings” and the autonomy item “My teacher takes students’ viewpoints in consideration in class” are similar in that the teacher pays attention to students’ sentiments. As for the other teacher–students item “I think my English teacher’s demeanor makes it easy for students to ask questions” (item 3), one can easily say that an approachable teacher is a teacher to whom students can easily express their thoughts and feelings. Teachers who are open to students’ opinions and questions are considered more autonomy-supportive than controlling (Reeve & Jang, 2006); therefore, it can be argued that item 3 measures teachers’ autonomy-supportiveness. Indeed, when a teacher wants to support students’ autonomy, the teacher needs to trust them and respect their feelings and thoughts, which inevitably entails a good relationship between the teacher and students. Given that a good teacher–student relationship is closely linked to supporting learner autonomy, it is legitimate that these items, which were originally thought to belong to two different constructs, clustered together.

All of the items in the second factor were originally designed to be in the need for competence. Likewise, all the items in the third factor were prepared to gauge the relatedness

fulfillment among students, signaling that item selection and expert judgment were successfully conducted and thus achieved content validity. In addition, the fact that the EFA results were in line with the theory suggests that construct validity of these two subscales were effectively obtained. It was decided that the second and third factors would be named *competence* and *relatedness*, respectively.

**Internal reliability.** Cronbach's alpha was computed to examine each factor's internal reliability. As shown in Table 2, the value for all three factors reached quite a high level (i.e.,  $\alpha = .86, .75$ , and  $.80$  respectively), representing sufficient internal consistency of the scale. In addition, the values obtained in this study were higher than those in the previous studies that included an EFA (Agawa & Takeuchi, in press-b; Hiromori, 2006a), signaling the successful development of the new scale.

Table 2  
*Results of Exploratory Factor Analysis for Psychological Needs Scale (Most Likelihood Method with Promax Rotation, N = 203)*

Factor 1. Autonomy (Alpha = .86)			
needs_19	<b>.77</b>	.07	-.10
needs_15	<b>.71</b>	-.07	-.05
needs_3	<b>.71</b>	-.18	.10
needs_4	<b>.68</b>	.12	-.06
needs_2	<b>.60</b>	.14	.12
needs_8	<b>.54</b>	.10	.19
Factor 2. Competence (Alpha = .75)			
needs_17	-.05	<b>.97</b>	-.06
needs_7	.09	<b>.64</b>	.05
needs_16	-.04	<b>.57</b>	.04
Factor 3. Relatedness (Alpha = .80)			
needs_10	.02	-.09	<b>.90</b>
needs_6	.01	-.03	<b>.71</b>
needs_12	-.05	.20	<b>.65</b>
Inter-factor correlations	I	II	III
I	—	.64	.67
II		—	.49
III			—

*Note.* Factor loadings > .40 are in boldface.

## 4.2 English Learning Motivation Scale

**Factor structure.** The same procedure that was used with the Psychological Needs Scale was adopted for the English Learning Motivation Scale. The pattern matrix for the motivation

scale is shown in Table 3. In the current study, items originally intended to be in identified regulation and introjected regulation were clustered together in the third factor of the English Learning Motivation Scale. A closer examination of the pattern matrix showed that all but the third item were originally intended as an identified regulation subscale. Therefore, the third factor was named *identified motivation*. The same phenomenon appeared in a previous study (Agawa & Takeuchi, in press-b), suggesting that distinguishing identified regulation and introjected regulation, which are adjacent to each other on the regulation continuum, might be difficult for Japanese university EFL learners.

All other groups of items were combined to form factors as anticipated and in line with SDT, which indicated the content and construct validity of the subscales. All of the items in the first factor were designed for inclusion in the intrinsic motivation subscale. Likewise, all the items in the second factor were intended to be in the amotivation subscale. Furthermore, the same was found in the fourth factor, with all items prepared for the external motivation subscale being included. Therefore, it was naturally decided that the first, second, and fourth factors would be named *intrinsic motivation*, *amotivation*, and *extrinsic motivation*, respectively.

**Internal reliability.** Reliability coefficients (Cronbach's alpha) for the English Learning Motivation Scale are shown in Table 3. As with the Psychological Needs Scale, the results for this scale were satisfactory for all the factors, with all values being higher than .80. In addition, as was the case with the needs scale, the reliability coefficients attained in the current study exceeded those presented in previous studies (Agawa & Takeuchi, in press-b; Hiromori, 2006a), indicating the successful development of the scale.

#### 4.3 Further Modification

The administration of the "final revision" of the questionnaire to participating students and teachers who cooperated in the study yielded feedback that resulted in the further modification of the questionnaire. In particular, three areas were revised: First, we found one item in the competence construct in the needs scale that was considered verbose: "I think I sometimes gain a sense of fulfillment when the results of my efforts are achieved in English class" (in Japanese, English translation by authors). In response to the feedback, we decided to shorten it to "I think I sometimes gain a sense of fulfillment when my efforts bear fruit in English class." Second, we decided to add the phrase "I think" to the items in the Psychological Needs Scale unless doing so made the sentence redundant, awkward or unnatural. One teacher who helped us administer the survey pointed out that, as the scale is designed to measure students' perceptions rather than actual conditions, the items should read "I think" to clearly indicate they are asking about participants' perceptions. After considering the comment, we decided to follow the advice. Finally, we changed "major" in the demographic section to "department" because we discovered that, at some universities, students choose their department when entering the university, but do not choose

their major until they advance to the third year. As participants in this study included first- and second-year students, some of them could not answer the original question.

Table 3  
*Results of Exploratory Factor Analysis for English Learning  
 Motivation Scale (Most Likelihood Method with Promax  
 Rotation, N =203)*

	I	II	III	IV
Factor 1. Intrinsic (Alpha = .87)				
motivation_9	<b>.76</b>	.14	.14	.06
motivation_7	<b>.75</b>	.07	-.06	.11
motivation_11	<b>.72</b>	-.06	.01	-.09
motivation_20	<b>.65</b>	-.10	.10	.06
motivation_18	<b>.60</b>	-.16	.00	.01
motivation_13	<b>.65</b>	-.10	.10	-.32
Factor 2. Amotivation (Alpha = .86)				
motivation_5	-.07	<b>.99</b>	.11	-.15
motivation_14	.28	<b>.79</b>	-.19	.05
motivation_12	-.02	<b>.72</b>	.04	-.09
motivation_22	.02	<b>.61</b>	-.13	.14
motivation_4	-.42	<b>.55</b>	.14	.03
Factor 3. Identified (Alpha = .88)				
motivation_23	-.06	-.02	<b>.90</b>	.11
motivation_24	.02	-.03	<b>.75</b>	.14
motivation_3	.04	.06	<b>.76</b>	.20
motivation_15	.06	-.06	<b>.64</b>	-.17
motivation_1	.06	.05	<b>.63</b>	-.22
motivation_21	.23	-.04	<b>.59</b>	.03
Factor 4. External (Alpha = .82)				
motivation_25	-.04	-.14	.20	<b>.85</b>
motivation_26	.09	.24	.07	<b>.74</b>
motivation_19	.00	.17	-.07	<b>.70</b>
	I	II	III	IV
I	—	-.42	.65	-.58
II		—	-.56	.69
III			—	-.58
IV				—

*Note.* Factor loadings > .40 are in boldface.

## 5. Conclusion

This paper has described the development and validation of a new instrument for assessing Japanese EFL learners' motivation at the tertiary level. The SDT-based questionnaire was developed carefully by taking several steps. The validity and reliability of the instrument were also examined. The results of the expert judgement, EFA, and reliability computation show that the new questionnaire has higher validity and reliability than the questionnaire widely used in the field.

This study facilitates efforts in future studies to achieve further refinement of the instrument and its verification in the Japanese EFL setting. As a next step, the modified questionnaire needs to be tested using a different sample to check the content validity of the instrument. Pedagogical implications for enhancing Japanese L2 learners' motivation could also be proposed and their effects evaluated by comparing the questionnaire data before and after the intervention. In this way, the new questionnaire developed in this study could be used to contribute to expanding the opportunity to improve learner motivation in university-level English classes in Japan.

## Acknowledgement

This study was partially supported by JSPS KAKENHI Grant Number 26370705.

## Notes

<sup>1</sup> GFI = .75, AGFI = .70, CFI = .82, RMSEA = .90. An adequate model fit is indicated by GFI values  $\geq .90$ , AGFI  $\geq .90$ , CFI  $\geq .90$ , and RMSEA  $\leq .10$ .

<sup>2</sup> CEFR-J Wordlist Version 1.1 (2013). Tono Laboratory, Tokyo University of Foreign Studies.

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## Appendix

### The Questionnaire Items Extracted by EFAs in This Study

#### Psychological Needs Scale

Factor	Question Items
Autonomy	英語の授業では、先生は私たちの授業に関する意見を尊重してくれていると思う。 英語の授業で教師は、活動や課題の価値や意義を説明してくれる。 英語の教師は、学生の気持ちを理解していると思う。 英語の教師は、私たちの英語の学習について励ましてくれる。 英語の授業で教師は、私たちの視点を考慮してくれていると思う。 英語の教師は、質問しやすい雰囲気を持っていると思う。
Competence	英語の授業では、自分の努力が実ったという充実感が得られることがあると思う。 英語の授業では、「できた」という達成感が得られることがあると思う。 英語の授業での自分の頑張りに満足している。
Relatedness	英語の授業では、和気あいあいとした雰囲気があると思う。 英語の授業では、同じ教室の仲間と仲良くやっていると思う。 英語の授業のグループ活動・ペアワークでは、協力し合う雰囲気があると思う。



### English Learning Motivation Scale

Factor	Question Items
Intrinsic	<p>英語に接すること自体が好きなので勉強する。</p> <p>英語を勉強することで、初めて気づくことがあると嬉しい。</p> <p>英語を学ぶことに刺激を感じるので勉強する。</p> <p>解らなかった英語が解るようになると嬉しいので勉強する。</p> <p>私が英語を学ぶのは、英語が話されているのを聞くのが心地よいからだ。</p> <p>私が英語を学ぶのは、英語を話していると気持ちがよいからだ。</p>
Identified	<p>いろいろな場面で英語は役立つと思うから勉強している。</p> <p>英語を使える人になりたいから勉強している。</p> <p>英語を使えないと、将来困りそうだから勉強している。</p> <p>私が英語を学ぶ理由は、英語が自分の成長にとって役立つと考えるからだ。</p> <p>自分の将来のためには、英語は大切である。</p> <p>自分の進路のためには大切な科目だから勉強する。</p>
External	<p>英語を勉強するのは、テストがあるので、しかたなく。</p> <p>単位を取るために英語を勉強している。</p> <p>勉強しろと言われるので英語をやっている。</p>
Amotivation	<p>英語の学習は時間の無駄であるという感覚がある。</p> <p>英語を学んでも何にもならないと思う。</p> <p>なぜ英語を学ぶ必要があるのか、理解できない。</p> <p>とにかく英語の勉強はもうしたくない。</p> <p>自分にとっての英語を学ぶ意義がわからない。</p>

*Note.* The English version is available upon request at [t-agawa@juntendo.ac.jp](mailto:t-agawa@juntendo.ac.jp).