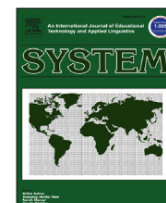


System 65 (2017) 151–163



Contents lists available at ScienceDirect

System

journal homepage: www.elsevier.com/locate/system

Engagement, gender, and motivation: A predictive model for Japanese young language learners

W.L. Quint Oga-Baldwin^{a, b, *}, Yoshiyuki Nakata^c^a Fukuoka University of Education, Department of English Language Education, 1-1 Akama Bunkyo Machi, Munakata, Fukuoka, 811-4192, Japan^b Waseda University, School of Education, Department of English Language and Literature, 1-104 Totsukamachi, Shinjuku-ku, Tokyo, 169-8050, Japan^c Doshisha University, Japan

ARTICLE INFO

Article history:

Received 19 February 2016

Received in revised form 7 January 2017

Accepted 9 January 2017

Available online 30 January 2017

Keywords:

Engagement

Motivation

Self-determination

Elementary school

Gender

External triangulation

ABSTRACT

A culture of engagement may help to build and sustain young children's motivation to learn a new language. In this study, we sought to investigate the link between engagement and motivation over the course of a semester in a naturally occurring Japanese elementary school classroom environment. Four-hundred and twenty-three fifth-year students in public elementary schools in western Japan agreed to participate in the research. Students completed surveys at two time points, first at the beginning of the semester regarding their in-class engagement, and again at the end of the semester regarding their motivation. A structural equation model was constructed using engagement and gender as predictors and motivational regulations as outcome variables. Observer rating of each class was used to triangulate. Engagement strongly predicted more adaptive intrinsically regulated motives and negatively predicted more extrinsic motives. Male students showed a tendency toward lower engagement, lower internally regulated motives, and higher externally regulated motives. Observer rating showed that students' reported engagement was visible to outside observers. Findings indicate that students' in-class engagement may be an important variable when investigating the long-term dynamics of foreign language learning in a classroom setting. Practical and theoretical implications are discussed.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

Teaching foreign languages to children is an active process, full of energy and positive emotion. Children express this energy through their engagement with the learning tasks. Engagement is a concept to describe students' behavior, cognition, and emotions while in class, representing the multifaceted intersection between action and motive (Fredricks, Blumenfeld, & Paris, 2004). It is a key step in the process of foreign language learning (Dörnyei & Ryan, 2015; Svalberg, 2009), and may prime future motivation (Pekrun & Linnenbrink-Garcia, 2012; Reeve, 2012; Reeve & Lee, 2014).

Engagement in foreign language classes is a central issue now in teaching English to children in Japan. According to the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT), a major goal of the current national

* Corresponding author. Fukuoka University of Education, Department of English Language Education, 1-1 Akama Bunkyo Machi, Munakata, Fukuoka,

curriculum for teaching foreign language to elementary school students is to build long-term motivation to learn English by engaging in communicative activities (MEXT, 2008). As a construct, engagement has been used in many motivational frameworks, most notably the self-determination theory of human motivation (SDT; Deci & Ryan, 1985; Reeve, 2012). In the Japanese elementary school environment, self-determination theory may offer a framework for promoting positive motivation for learning a new language (Noels, 2013; Oga-Baldwin & Nakata, 2014). Prior studies have drawn on SDT to document Japanese elementary students' motives for foreign language learning (Carreira, 2012; Nishida, 2010); some notable studies include motivation as an outcome of English language instruction (Carreira, Maeda, & Ozaki, 2013). While this previous work has included self-determined motivation, it has not considered the potential influence of students' engagement in foreign language class. In order to build on the previous work in the Japanese elementary setting, we seek to integrate the concept of classroom engagement with foreign language motivation in order to demonstrate how active behavior, emotion, and cognition influence students' motivation for learning a new language.

2. Engagement, motivation, and gender

Given the importance of engagement for promoting achievement, learning, and long-term motivation (Hyland, 2003; Reeve & Lee, 2014; Reeve & Tseng, 2011), we aim to confirm the link between engagement and motivation to learn a foreign language in Japanese elementary schools. The curricular goal of promoting interest and motivation through active learning (MEXT, 2008) gives practical relevance to this investigation. Here, we introduce the general literature on engagement, connect the concept to motivation as understood according to self-determination theory, consider the influence of gender, and examine how these factors together may relate to elementary school foreign language learning.

2.1. Engagement and motivation: a reciprocal relationship

Engagement is a topic of interest to most teachers. When students are optimally engaged in their studies, they are on task, thinking, and enjoying the learning process. This is what teachers hope to see; when teachers talk about a desire to motivate students, they may actually be discussing the desire to help students actively engage. Outlined by Fredricks et al. (2004), engagement is a multifaceted concept describing what and how students think, act, and feel in a classroom setting. Theorists distinguish engagement from motivation as the point where students act, drawing on the energy and direction of motivation to put thought and feeling into deed (Fredricks et al., 2004). Specific to the language classroom setting, Svalberg (2009) defines motivation as internal feelings of autonomy and purpose, related to positive affect for the topic. Engagement contains all these elements, in addition to cognitive and social components such as attention, agency, action, and interaction. Engagement is thus a state and process involving alert focus, positive orientation toward the language, and willingness to initiate social language use.

These definitions are consistent with ideas from educational psychology, where motivation represents the invisible, conscious, and subconscious desires that regulate learners' behavior, while engagement represents the signs of cognitive and emotional activity that stem from their desires, evidenced by students' active participation and visible enjoyment of the learning process (Reeve, 2012). Similarly, motivation is specific to the individual student, while engagement occurs at the intersection of the student and classroom situation (Fredricks et al., 2004). Engagement may be like a Rubicon moment, priming students toward future motivation and action (Heckhausen, 1991; Pekrun & Linnenbrink-Garcia, 2012). Theoretical and empirical work has shown a relationship between individuals' actions and their resulting internal states, including ability beliefs and motivation (Bandura, 1986; Reeve & Lee, 2014). Engagement may result from individuals' existing motivation and environment, but through continuous active learning may also help students develop real ability (Hyland, 2003), leading to greater motivation (Bandura, 1997). By engaging with language learning material, research has shown that motivation likewise increases (Lo & Hyland, 2007). Positive engagement predicts academic achievement in general education settings (Jang, Kim, & Reeve, 2012), as well as positively influencing the teaching environment (Reeve, 2013; Skinner, Furrer, Marchand, & Kindermann, 2008). Engaged students are more likely to receive positive teacher attention, creating a virtuous cycle (Skinner & Belmont, 1993), potentially leading to the development of positive motivation (Skinner et al., 2008; Reeve & Lee, 2014).

Theoretical and empirical work indicates that there are overlapping aspects of engagement: behavioral, social, emotional, and cognitive (Fredricks et al., 2004; Reeve, 2012; Svalberg, 2009). These categories describe the interrelated ways that students may act, feel, and think in class. *Behavioral engagement* describes how students pay attention, listen carefully, and work to complete classroom tasks. In many ways, this aspect of engagement is the one that most concerns teachers, and is positively influenced by classroom procedures and methods for promoting on-task behavior (Good & Brophy, 2008). Another component of behavior may include *social engagement*, which specifies how learners use language as a tool for interaction (Svalberg, 2009). *Emotional engagement* also has both internal and external manifestations. An emotionally engaged student enjoys the learning materials, finds pleasure in the tasks, and does not suffer negative affect during class. When teachers

Following the above definitions, the concept of engagement in the sphere of language education has gone by a number of different names. Some studies (Guilloteaux & Dörnyei, 2008; Nakata, 2006) have used the term *motivated behavior* to describe what students do in class. Other models use the concept of an *actional phase*, where learners are working actively on a task (Dörnyei, 2000). Researchers have measured *on-task behaviors*, rated through self-report and external assessment (Butler & Lee, 2006). Other discussions have used the term *effort* (Taguchi, Magid, & Papi, 2009), while some have started to talk about *motivational currents* to talk about how the dynamics of motivational energy influence activity (Dörnyei, Ibrahim, & Muir, 2015). Finally, Svalberg (2009) and Svalberg and Askham, (2014) have used the concept of *engagement with language*, discussing the specific social, cognitive, and affective uses of the target language to promote language awareness and development. Differences in the terminology aside, these authors have all been discussing what is essentially the same concept of energy in action, coming from prior motives and building toward future desire to act.

According to Lee and Reeve (2012), teachers recognize students' engagement, but may have trouble recognizing their motives. Student self-reports for both motivation and in-class engagement were compared with teachers' evaluations of each student on both dimensions. The results indicated that students' self-reported motivation and engagement were strongly correlated (>0.5), and showed significant relationships between student and teacher assessments of engagement. At the same time, students' self-reported motivation did not significantly predict teachers' assessment of students' motivation.

Further empirical work has indicated that engagement may be important to the long-term development of motivation. Reeve and Lee (2014) found a potentially reciprocal relationship between engagement and motivation. In this study, Korean high school students' engagement positively predicted motivational variables of self-efficacy, mastery goals, and psychological need satisfaction over the course of a single semester. The final measure showed a positive predictive relationship between engagement and course achievement. While engagement represents the dependent outcome state in motivation, in dynamic fashion (Dörnyei & Ryan, 2015) it may also represent a predictor of motivation (cf. Pekrun & Linnenbrink-Garcia, 2012; Skinner et al., 2008).

Like many psychological concepts, engagement does not stand independent from other constructs. As an observable process (Lee & Reeve, 2012), it is compatible with multiple theories of motivation. Students' interest (Ainley & Ainley, 2011) and their expectancies and values (Wang & Eccles, 2013) have been connected theoretically and empirically to engagement. Engagement has been measured using self-report (Reeve & Tseng, 2011), external rating (Jang, Reeve, & Deci, 2010), and a combination of the two (Skinner et al., 2008). Recognizing that engagement may fit into multiple theoretical and empirical perspectives, a relevant and appropriate framework for investigating this construct in context is required.

One of the most complete models of engagement in context comes from self-determination theory (e.g., Jang, Kim, & Reeve, 2012; Skinner et al., 2008; etc.). This framework has shown that teachers respond to positive student engagement, creating a positive backflow of support over the course of a school year (Skinner & Belmont, 1993). Engagement is likewise a reliable predictor of achievement (Jang et al., 2012; Jang, Reeve, Ryan, & Kim, 2009). Recognizing that self-determination theory has previously been used in the realm of language education, this theory offers a clear bridge for integrating this definition of engagement as the behavioral, cognitive, and emotional aspects of activity into the domain of foreign language studies.

2.2. Self-determination theory and SLA research

Self-determination theory (SDT) represents a general theory of human motivation (Deci & Ryan, 1985). According to SDT, motivation is simultaneously regulated by a series of exogenous and internal forces on a continuum running from external to intrinsic regulation (Ryan & Deci, 2002). In this framework, the *quality* of the motivation matters most (Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009), with more internally regulated motives representing better quality. Previous research has applied SDT to the realm of language education (Carreira, 2012; Hiromori, 2003; Noels, Pelletier, Clément, & Vallerand, 2000), demonstrating how the continuum of the locus of causality from controlled to autonomous regulations may also explain the motivation to learn a language. This continuum is displayed in Fig. 1.

The motivational regulations, moving from external to introjected to identified and then intrinsic, as presented in Fig. 1, should not be regarded as mutually exclusive. All may apply in varying degrees to any situation. The crucial element is whether, on the balance, learners' motives are determined by themselves, or whether they are controlled by someone else (Deci & Ryan, 1985). This feature defines the quality of motivation; the more internally regulated the motive, the more likely it is to lead to positive learning outcomes (Vansteenkiste et al., 2009), independent of the quantity or intensity of motivation.

Applying this theory to foreign language education, Noels, Clément, and Pelletier (1999) found that more intrinsic motives correlate with decreased anxiety, stronger motivational intensity, and a desire to continue learning beyond the end of the course. Later studies showed correlations between personal desire to integrate with a foreign culture and intrinsic motives for language learning (Noels, Clément, & Pelletier, 2001). McEown, Noels, and Saumure (2014) similarly found that more students wanted to continue studying the language if their motivation was of higher quality.

2.3. SDT in Japanese elementary foreign language education

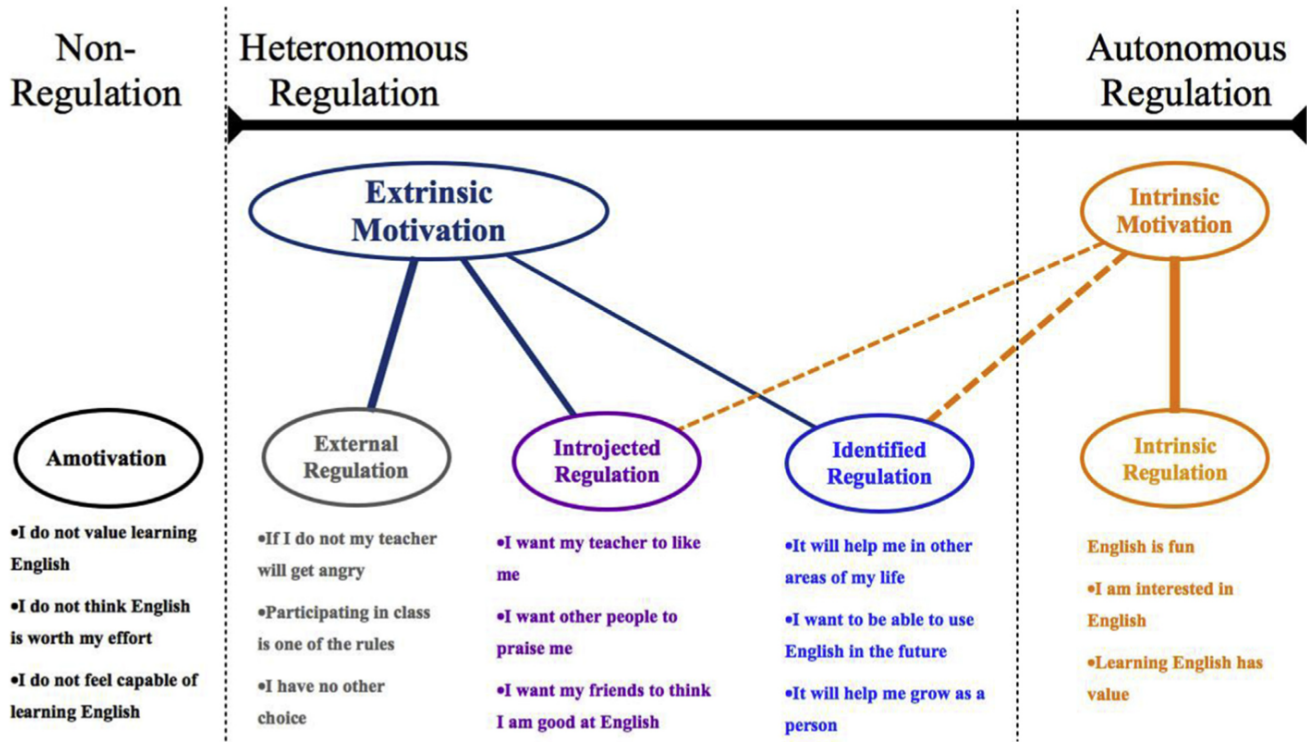


Fig. 1. Self-determination theory continuum of motivation with representative items. Adapted from Ryan & Deci, 2002.

intrinsic motivation can thrive. Current educational policy in Japan is specifically designed to promote interest and desire to learn; hence, high quality motivation is a desirable outcome.

Researchers have recently applied SDT to investigations of English language learning in Japanese elementary schools. Nishida (2010) explored the longitudinal development of students' intrinsic motives in the context of a drama-based module. She found that after participating in a foreign language drama performance, students' sense of autonomy, relatedness, and willingness to communicate all increased. Need satisfaction significantly correlated with intrinsic motives and students' willingness to communicate in the foreign language.

Carreira (2012) investigated elementary students' motivational regulations using exploratory factor analysis, correlating these regulations with students' basic needs for autonomy, competence, and relatedness. As predicted by SDT, more internalized motives correlated most strongly with greater need satisfaction. In this Tokyo-based sample, students' external regulation was stronger than more autonomous regulations, potentially related to the competitive urban environment (Berwick & Ross, 1989; Siegel, 2004).

In a later cross-sectional study, Carreira, Ozaki, and Maeda (2013) found that teacher autonomy support predicted both need satisfaction and intrinsic motivation. Again using a sample from Tokyo, the authors used path analysis structural equation modeling to demonstrate a relationship between these factors. Students' perceptions of their classroom environment as supportive and satisfying positively correlated with intrinsic motivation. While successfully demonstrating again how perceptions of the environment help to promote students' sense of need satisfaction as well as intrinsic motivation, the cross-sectional nature of this and the previous studies invites more long-term tests of the theory. This study only measured the influence of the classroom environment on intrinsic regulation, leaving the question of how the classroom influences the other forms of regulation.

Longitudinal studies in Japanese elementary schools have shown that teachers' support predicts both need satisfaction and engagement over time (Oga-Baldwin & Nakata, 2015). Using a sample from a suburban setting, this series of studies found that the teacher-created learning environment predicted students' perceptions that their classroom was a need-satisfying, engaging, and thereby motivating place.

Recognizing that current educational policy for foreign language in Japan is oriented towards building motivation for life-long learning and away from summative assessments (MEXT., 2008), a positive sense of motivation can be seen as one measurable outcome of positive instruction (Moore, Lippman, & Ryberg, 2015). Self-determination theory has already been tested and validated in the realm of language education (Noels et al., 2000) and the Japanese elementary school system

2009; Skinner et al., 2008). Thus, including engagement as a predictor of motivation for learning a foreign language in schools represents a logical continuation of this model and a clear theoretical bridge. Self-determined motives, representing a desired outcome of the Course of Study for foreign languages (MEXT., 2008; Oga-Baldwin & Nakata, 2014), may be used to test the effects of how students engage with their language studies.

2.4. Gender and motivation in foreign language learning

In building a model of engagement and motivation, gender is a crucial factor for consideration. The literature on schooling and education generally has indicated specific motivational advantages for girls in fields involving own language (Meece, Glienke, & Burg, 2006). This trend has been extended to new languages as well. Worldwide, women generally perform slightly better than men in English as a foreign language (Education First, 2015). Differences in how boys and girls engage with language may result from differences in basic interaction styles and identities (Henry, 2010). Henry (2009) found that Swedish secondary school girls showed a more positive attitude toward foreign cultures and language communities than boys. Working from the framework of possible selves, Henry and Cliffordson (2013) showed that female students favored interdependence and social collectivism, which in turn had a weak correlation with attitudes toward L3 learning. These attitudes help to explain why male and female students engage differently with a new language.

Focusing on the Japanese elementary foreign language environment, Carreira (2011) demonstrated higher intrinsic motivation, interest in foreign countries, and enjoyment among girls rather than boys. Further studies in Japan showed this trend extending as far as university, where male students showed both motivational disadvantages as well as a larger achievement gap in foreign language classes (Fryer, 2015; Kozaki & Ross, 2011). Gender may play an important role in the process of students' engagement and the development of motivation, and help to explain the eventual differences in proficiency worldwide (Education First, 2015).

3. The study

As outlined, engagement has been used as an effective predictor of achievement in first language studies (Jang et al., 2009; etc.). In the current study, we build on previous motivational models developed for Japanese elementary foreign language education (Carreira, 2012; Carreira et al., 2013) to include engagement. We aimed to validate the concept of engagement in Japanese elementary foreign language classes, and show how an engaging classroom environment may help to achieve the long-term goal of promoting positive motivation for learning English presented in the current Course of Study for Foreign Languages (MEXT., 2008). Theoretically, engagement should also be visible (Lee & Reeve, 2012); a culturally attuned outside observer should recognize when students are on task and enjoying their schoolwork.

Using engagement as a predictor of motivation (Reeve & Lee, 2014), this study used structural equation modeling to answer the following research questions:

Research Question (RQ)1: To what extent does students' in-class engagement predict their motivation?

Research Question (RQ)2: To what extent does gender predict engagement and outcome motivation?

In order to answer the above research questions, surveys measuring engagement and motivation were conducted in Japanese elementary schools. Survey results were triangulated using outside observers, who were asked to observe classes to rate students' behavior.

3.1. Participants

Four-hundred and twenty-three fifth-grade students (female $n = 199$; age 10–11 years) in sixteen classes in five schools participated in this study. The schools were all from the same rural-suburban municipal school district in western Japan. Permission for data collection was granted by the Fukuoka University of Education ethics board. The local board of education, school leaders, and cooperating teachers all volunteered for the research project. Parents and guardians were notified of the research and its scope through the schools, and allowed to withdraw at any time. No children refused or requested withdrawal.

English classes in the selected schools were all taught by two teachers: a native English-speaking assistant language teacher (ALT), and the students' homeroom teacher (HRT), a native speaker of Japanese. ALTs led the activities and the HRT acted as a guide or participant (Aline & Hosoda, 2006). Classroom activities included games, songs, and chants. In all of the classes, students were learning about the English names for their school subjects (e.g., math, science, music, etc.), following the Ministry-approved curriculum (MEXT, 2012).

3.2. Instruments

Two questionnaire surveys were created and administered at different time points ten weeks apart during the third term of the 2012–2013 school year. Engagement surveys were administered in early January, 2013, and motivation surveys at the end of March, 2013. All surveys used a 5-point Likert-type scale, with 1 representing “not at all true” and 5 representing “very true.” Final items are presented in Table 1. Surveys were selected both due to their previous application in similar research settings (Carreira, 2012; Reeve & Tseng, 2011), and their theoretical connection to the differences highlighted between engagement and motivation (Fredricks et al., 2004; Reeve, 2012; Svalberg, 2009).

3.2.1. Engagement

Following prior studies (Jang et al., 2012; Reeve & Lee, 2014), an instrument measuring students' engagement as a single latent variable was created for the purpose of this study. Items were created through focus groups with students and teachers. These items were selected to represent students' attention, interaction, and affect during the tasks themselves (Svalberg, 2009).

Students responded to the survey immediately following their foreign language classes in early January 2013. Survey items measured students' engagement in the class they had just completed, using the item anchor “In today's foreign language activities class ...”. Surveys were administered directly following class to achieve the most accurate self-assessments (Butler & Lee, 2006). This scale showed acceptable internal reliability ($\alpha = 0.89$; Nunnally & Bernstein, 1994).

3.2.2. Motivation orientation

An updated translation of the Self-Regulation Questionnaire—Academic (SRQ-A; Ryan & Connell, 1989) was created based on previous studies (Carreira, 2012; Noels et al., 2000; Yamauchi & Tanaka, 1998). This questionnaire was selected to represent the continuum from intrinsic to external regulations (Ryan & Deci, 2002), measuring students' motivation in terms of the quality of autonomy, purpose, and positive affect for learning English (Svalberg, 2009). Question items were rewritten using small group discussions with students and teachers. Three items each were used to measure the four regulatory orientations: intrinsic, identified, introjected, and external. Items used the anchor “I study English because ...”. Survey items are presented in Table 1. This survey was conducted in March, 2013, at the end of the Japanese school year. Internal reliability for each scale was determined to be acceptable, intrinsic ($\alpha = 0.80$), identified ($\alpha = 0.84$), introjected ($\alpha = 0.80$), extrinsic ($\alpha = 0.75$).

3.3. Structural equation models

To answer RQ1 and RQ2, a structural equation model was constructed to investigate the relationship between engagement, gender, and motivation. Fig. 2 shows the hypothesized model. This model represents the following hypotheses:

Table 1
Survey items and their factor loading coefficients.

Factor	Item wording	Coefficient
Survey 1 Anchor: In today's foreign language activities class:		
Engagement	I participated in the activities	0.69
Engagement	I spoke a lot of English today	0.52
Engagement	I paid attention	0.63
Engagement	I continued working until the end of class	0.62
Engagement	I enjoyed today's class	0.78
Engagement	I felt good	0.67
Engagement	I felt interested	0.75
Engagement	I enjoyed learning new things	0.76
Survey 2 Anchor: Why are you working to learn English?		
Intrinsic	English is fun	0.74
Intrinsic	I'm interested in English	0.77
Intrinsic	English has value	0.73
Identified	It will help me in other parts of my life	0.71
Identified	I want to be able to use English in the future	0.85
Identified	It will help me grow as a person	0.83
Introjected	I want my teacher to like me	0.71
Introjected	I want other people to praise me	0.80

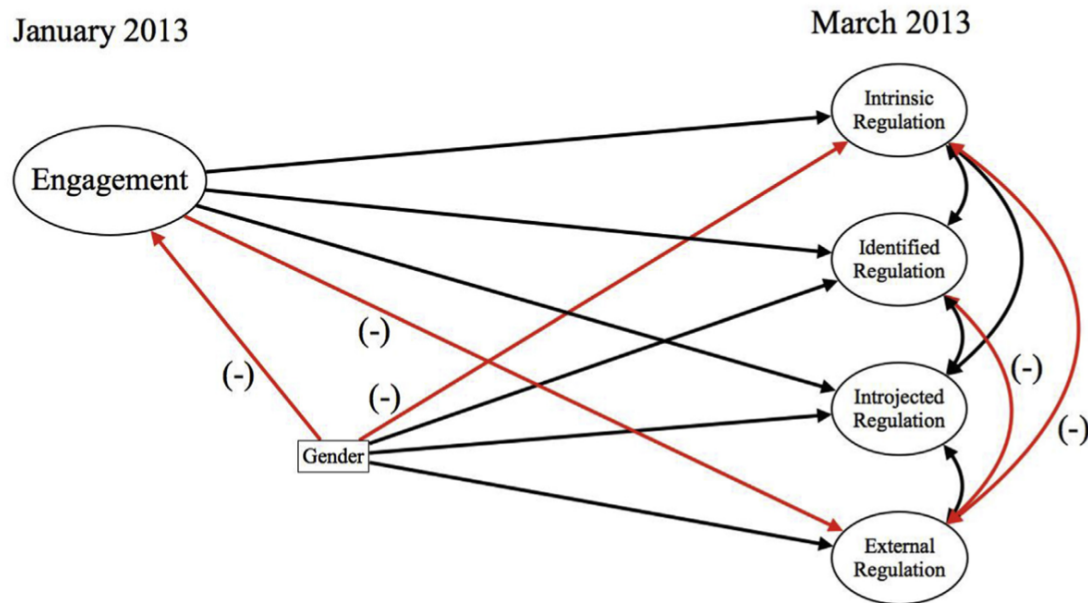


Fig. 2. Hypothesized structural model of motivational development.

1. Engagement positively predicts more intrinsic regulations.
2. Engagement negatively predicts external regulation.
3. Motivational regulations correlate with the theoretically adjacent construct (intrinsic \leftrightarrow identified \leftrightarrow introjected \leftrightarrow extrinsic), and show a decreasing and ultimately negative relationship with greater theoretical distance
4. Gender (male) negatively predicts engagement and intrinsic regulation, while positively predicting more extrinsic motivation.

The theory behind this model stems from previous reciprocal models where positive engagement also predicts positive outcomes such as achievement (Jang et al., 2012; Skinner et al., 2008). The current model hypothesized that students' behaviors and feelings in class would influence their motivation (Reeve & Lee, 2014). Motivation and positive feelings for learning are goals of the current Course of Study (MEXT., 2008), and thus may be seen as outcome variables for this study. Based on previous research in Japanese elementary schools (Carreira, 2011), male gender was expected to correlate negatively with more adaptive autonomous motives and positively with more maladaptive controlled motives.

All latent variable analyses were conducted using robust maximum likelihood estimation (MLR) in MPlus 7.3 (Muthén & Muthén, 2014). Elementary school samples often contain normality issues related to strong positive bias (Spinath & Steinmayr, 2008). MLR was used to account for potential issues (Kline, 2010). Fit was determined to be acceptable according to standard structural equation modeling procedure (Kline, 2010): RMSEA < 0.08, CFI/TLI > 0.90 for acceptable fit; RMSEA < 0.05, CFI/TLI > 0.95 for good fit. For model comparison, a change (Δ) > |0.01| for CFI, TLI, or RMSEA indicates a significant adjustment in the fit. In the event of differing fits, the superior model should be given preference. The χ^2 score over degrees of freedom and Akaike's Information Criterion (AIC) were used to determine the more parsimonious model. For both χ^2/df and AIC, the lower score indicates better parsimony and fit.

3.4. Gender comparison

To answer RQ2, gender differences were analyzed using standard regression coefficients as part of the structural equation model. All latent variables were regressed on gender to test for effects. To compare male and female results, students' mean scores were calculated for each latent variable. Scores were then compared using paired t-tests. Effect sizes were calculated using Cohen's d , where $d = 0.4$ represents a small effect, $d = 0.7$ represents a moderate effect, and $d = 1.0$ represents a large effect (Plonsky & Oswald, 2014).

3.5. External rating

observations. These ratings did not include checklists such as found in work by Guilloteaux and Dörnyei (2008) in order to prevent pre-existing theoretical bias from coloring raters' perceptions. Instead, raters were given only the three ranking categories of high, medium, and low engagement with a brief explanation of what engagement constitutes. This was done in order to allow for naïve assessments as might normally be made by non-trained raters such as parents, teachers, and school administrators.

Interrater reliability for the three raters was assessed using Cohen's Kappa statistic in Stata 13 (StataCorp, 2013). Using the guidelines set by Landis and Koch (1977), Kappa <0.2 indicates almost no agreement, 0.21–0.40 indicates fair agreement, 0.41–0.60 indicates moderate agreement, 0.61–0.80 indicates substantial agreement, and 0.81–1.0 indicates near perfect agreement. Final categorization of a class as high or low engagement was decided using majority rule; when two out of three raters ranked a class in the same way, this ranking was adopted (e.g., Rater 1 = moderate, Rater 2 = high, Rater 3 = moderate, Final Ranking = moderate). Analysis of variance (ANOVA) tests were conducted to test for significant differences in students' self-report scores by raters' rankings.

4. Results

4.1. Structural equation model

A confirmatory factor analysis (CFA) was conducted on the model prior to testing the predictive model in order to diagnose any potential specification errors (Kline, 2010). Model fit for the CFA was highly acceptable, $\chi^2(160) = 288.936$, $p < 0.000$, $\chi^2/df = 1.81$, RMSEA = 0.044 (CI = 0.035, 0.052), CFI = 0.96, TLI = 0.95, AIC = 22436.379. The items and their coefficients are presented in Table 1. All items showed strong correlations with each factor (minimum coefficient 0.52). Modification indices showed no misspecifications. Accordingly, the structural equation model presented in Fig. 2 was tested.

Results for the structural equation model generally confirmed the research hypotheses. Model fit was highly acceptable, $\chi^2(175) = 310.373$, $p < 0.000$, $\chi^2/df = 1.77$, RMSEA = 0.043 (CI = 0.035, 0.050), CFI = 0.96, TLI = 0.95, AIC = 22414.312. The full model is displayed in Fig. 3. Table 2 presents the zero-order latent variable correlations.

As predicted by Hypothesis 1, students' in-class engagement strongly predicted intrinsic ($\beta = 0.71$) and identified ($\beta = 0.56$) regulations, with weaker relationships with introjected regulation ($\beta = 0.25$). In line with SDT and Hypothesis 2, engagement negatively predicted external regulation ($\beta = -0.40$). Each motivational regulation significantly correlated with the theoretically adjacent construct, with the notable exception of the correlation between identified and introjected regulations. This largely confirmed Hypothesis 3. The model explained roughly 56% of the variance for intrinsic regulation ($R^2 = 0.56$), indicating a strong predictive value, and showed a decreasing explanatory relationship for identified ($R^2 = 0.34$), introjected ($R^2 = 0.07$), and external ($R^2 = 0.19$) regulations.

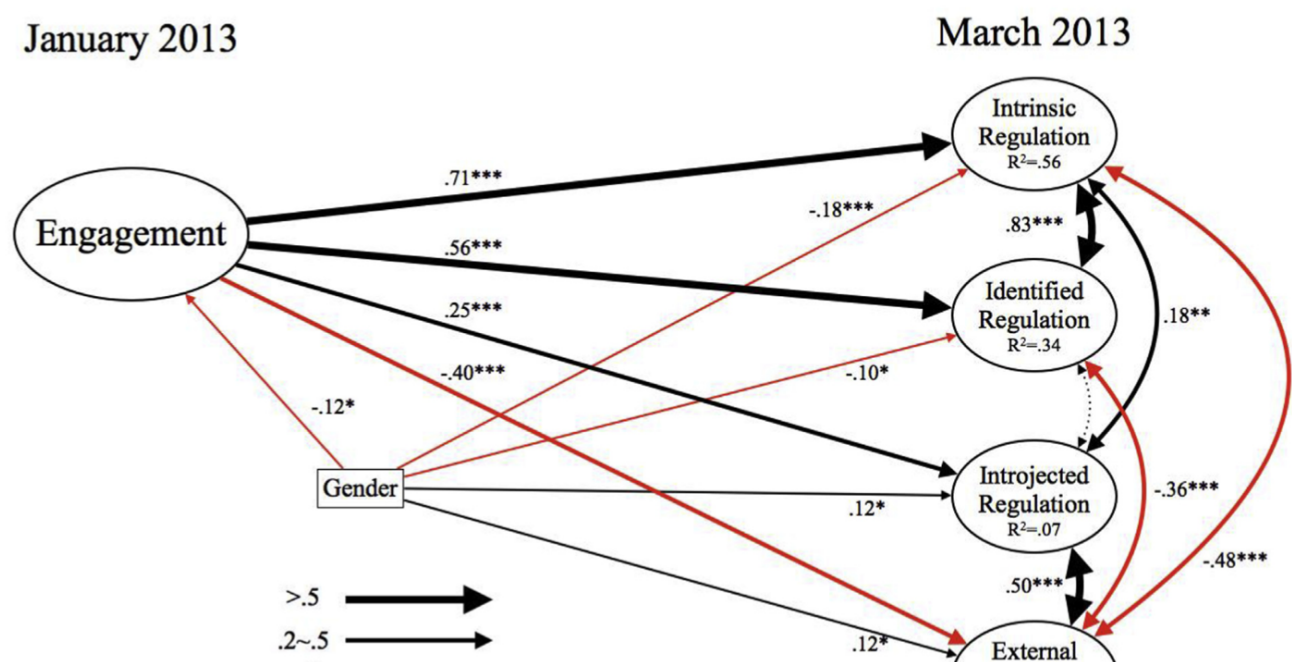


Table 2

Zero-order correlations for the latent variables with descriptive statistics and internal reliabilities.

	1	2	3	4	5	6
1) Engagement	—	0.73***	0.57***	0.23***	-0.42***	-0.12*
2) Intrinsic regulation		—	0.88***	0.26***	-0.60***	-0.26***
3) Identified regulation			—	0.18**	-0.51***	-0.17***
4) Introjected regulation				—	0.35***	0.09
5) External regulation					—	0.17**
6) Gender						—
Mean	3.68	3.65	4.01	1.87	2.17	—
95% Confidence Interval	3.61, 3.76	3.56, 3.74	3.92, 4.11	1.79, 1.96	2.07, 2.25	—
SD	0.83	0.96	0.98	0.88	0.95	—
Cronbach's α	0.89	0.80	0.84	0.80	0.76	—

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The relationships between variables were strong, potentially inflated by the same negative skew as found with other studies of elementary students' motivation (Spinath & Steinmayr, 2008). The strength of some of the correlations required measures to confirm whether the intrinsic and identified factors were validly different, and thus an alternative model was tested (Hancock & Schoonen, 2015). This model constrained intrinsic and identified regulations as a single factor while maintaining the introjected and extrinsic factors as separate. Results showed a decrease in fit indices $\Delta RMSEA = 0.008$, $\Delta CFI = -0.01$, $\Delta TLI = -0.02$, as well as an increase in χ^2 over degrees of freedom, $\chi^2/df = 2.08$, and Akaike's Information Criterion, $AIC = 22478.864$. An individual t -test comparing the mean score for intrinsic and identified regulations revealed a statistically significant difference between students' ratings of intrinsic and identified regulations, $t(422) = 10.32$, $p < 0.00$. Confidence intervals for each factor did not overlap. Despite the high correlation of the outcome motivational variables, results indicate the 4-factor model of motivational regulations as preferable. Other alternative models are implausible due to the nature of the data; motivation was measured after engagement, and could not logically be a predictor or covariate of engagement in this instance.

4.2. Gender effects

Students' gender showed weak though consistent effects in the structural equation model. As predicted by hypothesis 4, gender had significant negative effects on engagement ($\beta = -0.12$), intrinsic regulation ($\beta = -0.18$), and identified regulation ($\beta = -0.10$), indicating slightly lower scores for boys than girls. Male gender also significantly predicted introjected ($\beta = 0.12$) and external ($\beta = 0.12$), regulations.

Follow up t -tests indicated girls were more internally regulated and engaged than boys. Girls showed higher intrinsic regulation (female $M = 3.85$, $SD = 0.81$, male $M = 3.48$, $SD = 1.05$), $t(421) = 4.07$, $p < 0.000$, Cohen's $d = 0.40$, identified regulation (female $M = 4.15$, $SD = 0.80$, male $M = 3.88$, $SD = 1.11$), $t(421) = 2.9$, $p = 0.002$, Cohen's $d = 0.40$, and engagement (female $M = 3.77$, $SD = 0.74$, male $M = 3.61$, $SD = 0.91$), $t(421) = 1.87$, $p = 0.031$, Cohen's $d = 0.18$. Boys demonstrated significantly higher external regulation (female $M = 2.04$, $SD = 0.86$, male $M = 2.78$, $SD = 1.01$), $t(421) = 4.07$, $p < 0.005$, Cohen's $d = -0.25$. Table 3 displays the complete t -test results, confidence intervals, Cohen's d effect sizes, and structural regression coefficients. Effect sizes were all very small, $d \leq 0.4$ (Plonsky & Oswald, 2014).

4.3. External rating

Interrater reliability for the independent rankings showed substantial agreement, Cohen's Kappa = 0.70, $p < 0.000$ (Landis & Koch, 1977). Table 4 displays the mean engagement and motivation score for each class, while Table 5 displays raters' rankings of low, moderate, or high engagement. Using the final ranking to compare students' self-reported engagement, ANOVA results showed significant differences between the rankings for engagement, $F(2, 420) = 21.06$, $p < 0.00$, $\eta^2 = 0.09$, intrinsic regulation, $F(2, 420) = 19.85$, $p < 0.00$, $\eta^2 = 0.08$, identified regulation, $F(2, 420) = 17.88$, $p < 0.00$, $\eta^2 = 0.08$, and external regulation, $F(2, 420) = 14.58$, $p < 0.00$, $\eta^2 = 0.06$. No significant differences were found for introjected regulation.

The trends demonstrated by the independent rankings and students' self-reported data are displayed in Fig. 4. Raters' rankings broadly matched with students' self-reported data for both engagement and quality of motivation. Both engagement and autonomous motives (i.e., intrinsic and identified regulations) increased in relation to engagement, while external regulation decreased.

5. Discussion

Table 3

Gender effects on latent variables and achievement outcomes. Coding: Female = 0, Male = 1.

	<i>t</i> -test (<i>df</i> = 421)	Male 95% CI	Female 95% CI	Cohen's <i>d</i>	Gender β
1) Engagement	2.29*	3.66, 3.87	3.49, 3.73	0.18	-0.12*
2) Intrinsic regulation	4.07***	3.34, 3.61	3.74, 3.96	0.40	-0.18***
3) Identified regulation	2.90**	3.73, 4.02	4.05, 4.27	0.40	-0.10*
4) Introjected regulation	-1.30†	1.80, 2.05	1.70, 1.92	-0.13	0.12*
5) External regulation	-2.59**	2.14, 2.40	1.92, 2.15	-0.25	0.12*

 β coefficients taken from the structural model. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.**Table 4**

Mean engagement and motivation scores by class.

Class	Engagement mean (SD)	Intrinsic mean (SD)	Identified mean (SD)	Introjected mean (SD)	External mean (SD)
A	3.44 (0.70)	3.32 (0.70)	3.91 (1.04)	1.81 (1.02)	2.28 (0.82)
B	3.18 (0.82)	3.18 (1.10)	3.62 (1.19)	1.88 (0.79)	2.23 (1.04)
C	3.45 (1.01)	3.40 (1.05)	3.72 (1.22)	1.85 (0.87)	2.25 (1.04)
D	3.71 (0.78)	3.72 (0.90)	4.35 (0.73)	1.92 (0.82)	2.15 (0.71)
E	3.77 (0.82)	3.77 (1.04)	4.12 (0.87)	1.96 (0.88)	2.10 (0.97)
F	3.86 (0.69)	3.78 (0.79)	4.04 (0.79)	1.93 (1.02)	2.28 (0.95)
G	3.53 (0.75)	3.75 (0.75)	3.97 (0.82)	1.59 (0.60)	1.81 (0.76)
H	4.02 (0.67)	3.92 (0.97)	4.13 (0.74)	1.95 (0.97)	1.90 (0.84)
I	3.43 (1.08)	3.46 (1.16)	4.08 (1.22)	1.75 (1.04)	2.02 (0.89)
J	3.58 (0.78)	3.80 (0.90)	4.08 (0.96)	2.21 (0.86)	2.36 (0.88)
K	3.73 (0.69)	3.38 (0.89)	3.75 (0.92)	1.88 (0.76)	2.58 (0.89)
L	4.00 (0.64)	4.05 (0.55)	4.42 (0.61)	1.74 (0.70)	1.84 (0.75)
M	4.33 (0.53)	4.32 (0.66)	4.53 (0.66)	1.76 (1.16)	1.52 (0.65)
N	4.14 (0.52)	4.12 (0.86)	4.39 (0.70)	1.85 (0.78)	1.77 (0.93)
O	3.45 (0.94)	3.20 (1.04)	3.33 (1.20)	1.81 (0.85)	2.67 (1.29)
P	3.26 (1.06)	3.04 (1.06)	3.49 (1.31)	1.87 (0.90)	3.02 (0.99)

Table 5

Raters' rankings of classes and the final selected ranking.

Class	Rater 1 Ranking	Rater 2 Ranking	Rater 3 Ranking	Final Ranking
A	Moderate	Moderate	Moderate	Moderate
B	Moderate	Low	Low	Low
C	Moderate	Moderate	Moderate	Moderate
D	High	High	Moderate	High
E	High	Moderate	Moderate	Moderate
F	Moderate	Moderate	Moderate	Moderate
G	Moderate	Moderate	Moderate	Moderate
H	High	High	High	High
I	Moderate	Moderate	Moderate	Moderate
J	Moderate	Moderate	Moderate	Moderate
K	Moderate	Moderate	Moderate	Moderate
L	High	High	High	High
M	High	High	High	High
N	High	High	High	High
O	Low	Low	Low	Low
P	Low	Low	Low	Low

theoretical (Pekrun & Linnenbrink-Garcia, 2012) and empirical (Reeve & Lee, 2014) perspectives. The model indicates that students who actively engage in foreign language learning are also more motivated at the end of the term. These results confirm the distinction between motivation as a more general autonomous affective orientation toward a specific goal, and engagement as social interaction, agency, and action taken toward said goal (Svalberg, 2009). Gender shows small but theoretically consistent effects, replicating boys' lower motivation for and engagement in foreign language classes (Henry, 2009; 2010).

In response to Research Question 1 (*To what extent does students' in-class engagement predict their motivation?*), engagement strongly predicted more intrinsic motives, and showed a decreasing relationship across the SDT continuum towards external regulation. This confirmed Hypotheses 1 and 2. Corroborating Hypothesis 3, motivational regulation factors correlated in a fashion consistent with self-determination theory. Results agree with quantitative (Reeve & Lee, 2014) as well

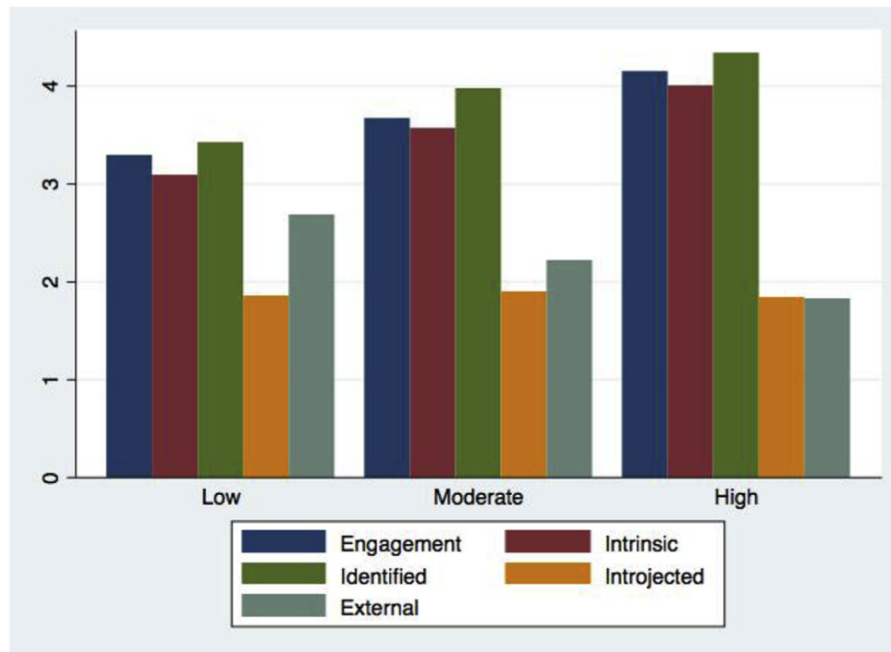


Fig. 4. Student engagement and motivation scores by raters' rankings of classes.

introjected regulation formed a separate factor from identified regulation, showing how the four factors differ. Introjected regulation, classically supposed to be a strong motivator in collectivist societies such as Japan (Markus & Kitayama, 1991) was consistently the weakest form of regulation. While identified and intrinsic regulations were highly correlated, follow up tests demonstrated that students recognize them as different. Results showed no signs of suppression—standardized regression coefficients reflected zero-order correlations. At the same time, intrinsic and identified regulations showed strong correlations. Future studies using these variables should note and account for potential difficulties that may arise from highly correlated predictors when using these motivational factors as independent variables, potentially treating them again as a single latent variable.

Students in this sample demonstrated higher levels of intrinsic and identified regulation than students in previous samples (Carreira, 2012). While urban students may show a greater orientation toward external control, the participants here were more autonomously motivated to learn a foreign language. These results expand the work by Carreira et al. (2013) to show the relationship between an engaging classroom and the differing degrees of extrinsic regulation. As the quality of motivation is regulated simultaneously by intrinsic and external motives (Vansteenkiste et al., 2009), the degree of both internal and extrinsic regulation are important. Results show stronger effects of engagement on higher quality motives, indicating that positive engagement leads to more internally regulated, and less externally regulated, motivation.

In response to Research Question 2 (*To what extent does gender predict engagement and outcome motivation?*), gender showed consistently weak but measurable relationships with students' motivation and engagement. Boys showed a tendency toward more maladaptive, externally controlled motives, potentially stemming from their stronger independence from group processes (Henry & Cliffordson, 2013; Henry, 2010). Results confirmed Hypothesis 4. This is consistent with previous studies in elementary schools (Carreira, 2011) and those involving more mature students (Fryer, 2015; Kozaki & Ross, 2011).

Outside raters ranked classes into three ranks of low, moderate, and high engagement classes. Interrater reliability was substantial, indicating broad agreement between the observers. These ranks demonstrated the differences between high and low engagement classes. Taken together, these triangulations indicated both the internal and external validity of engagement as a part of the classroom process leading to positive motivation. Findings agree with previous studies demonstrating a relationship between outside observers' ratings and self-report data (Butler & Lee, 2006; Lee & Reeve, 2012). The current students' positive engagement reflected a pattern of more adaptive, autonomous motivation, while less engaged classes showed a trend toward more controlled motives.

5.2. Implications

Results indicate that in order to create the desired long-term motivation and positive affect for learning English, teachers

the more independent, competitive nature that boys often exhibit (Henry & Cliffordson, 2013). Activities and topics in line with the interests of both genders need adequate consideration.

While this study did not measure the classroom climate, previous research has indicated that the classroom environment is centrally, perhaps causally, important to promoting an engaging learning environment (Jang et al., 2010; Oga-Baldwin & Nakata, 2015; Skinner et al., 2008). Unlike in previous studies (Carreira, 2012), students were also generally more autonomously motivated, a trend which increased proportionally to their engagement. Looking at the comparison of the different classes, the most engaged classes were also the most internally motivated at the end of the term. External ratings show that students' engagement in class was visible to observers. Results indicate the importance of an environment where students enjoy, pay attention to, and work hard on their classroom tasks. Engagement, as a part of the actional phase in the process of classroom learning (Dörnyei, 2000), represents an important aspect of developing student motivation over time.

6. Conclusions

Given the centrality of developing positive affect for a foreign language under current Japanese educational policies (MEXT, 2008), high quality, internally regulated motivation may be considered an appropriate outcome of the learning process, especially for elementary schools (Moore et al., 2015). These results indicate that in order to achieve the central policy goal of intrinsic motivation for foreign language learning in elementary schools (MEXT, 2008; Oga-Baldwin & Nakata, 2014), actively engaging students in their schoolwork offers a valuable step in the dynamic motivational process (Dörnyei & Ryan, 2015). Consistent with prior empirical work (Reeve & Lee, 2014; Skinner et al., 2008), these findings show how students' activity and enjoyment during class dynamically influences their future motivation. In the context of Japanese elementary foreign language learning, engagement in class may help students to feel a sense of positive affect, value, and interest in English at the end of the school term.

Acknowledgements

This research was supported by JSPS grant-in-aid for young scientists (B) 24720260 (KAKENHI).

References

- Ainley, M., & Ainley, J. (2011). Student engagement with science in early adolescence: The contribution of enjoyment to students' continuing interest in learning about science. *Contemporary Educational Psychology*, 36(1), 4–12. <http://dx.doi.org/10.1016/j.cedpsych.2010.08.001>.
- Aline, D., & Hosoda, Y. (2006). Team teaching participation patterns of homeroom teachers in English activities classes in Japanese public elementary schools. *JALT Journal*, 28(1), 5–22.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Berwick, R., & Ross, S. (1989). Motivation after matriculation: Are Japanese learners of English still alive after exam hell? *JALT Journal*, 11(2), 193–210.
- Butler, Y. G., & Lee, J. (2006). On-task versus off-task self-assessments among Korean elementary school students studying English. *Modern Language Journal*, 90(4), 506–518.
- Carreira, J. M. (2011). Relationship between motivation for learning EFL and intrinsic motivation for learning in general among Japanese elementary school students. *System*, 39(1), 90–102. <http://dx.doi.org/10.1016/j.system.2011.01.009>.
- Carreira, J. M. (2012). Motivational orientations and psychological needs in EFL learning among elementary school students in Japan. *System*, 40(2), 191–202. <http://dx.doi.org/10.1016/j.system.2012.02.001>.
- Carreira, J. M., Ozaki, K., & Maeda, T. (2013). Motivational model of English learning among elementary school students in Japan. *System*, 41(3), 706–719. <http://dx.doi.org/10.1016/j.system.2013.07.017>.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. NY: Plenum.
- Dörnyei, Z. (2000). Motivation in action: Towards a process-oriented conceptualisation of student motivation. *British Journal of Educational Psychology*, 70(4), 519–538. <http://dx.doi.org/10.1348/000709900158281>.
- Dörnyei, Z., Ibrahim, Z., & Muir, C. (2015). 'Directed motivational currents': Regulating complex dynamic systems through motivational surges. In Z. Dörnyei, P. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 95–105). Bristol: Multilingual Matters.
- Dörnyei, Z., & Ryan, S. (2015). *The psychology of the language learner revisited*. New York: Routledge.
- Education First. (2015). *EF English proficiency index 2015*. Available from: <http://www.ef.co.uk/epi/>.
- Fredricks, J. A., Blumenfeld, P., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <http://dx.doi.org/10.3102/00346543074001059>.
- Fryer, L. (2015). Predicting self-concept, interest and achievement for first-year students: The seeds of lifelong learning. *Learning and Individual Differences*. <http://dx.doi.org/10.1016/j.lindif.2015.01.007>.
- Good, T., & Brophy, J. (2008). *Looking in classrooms* (10th ed.). New York: Longman.
- Guilloteaux, M.-J., & Dörnyei, Z. (2008). Motivating language learners: A classroom-oriented investigation of the effects of motivational strategies on student motivation. *TESOL Quarterly*, 42(1), 55–77. <http://dx.doi.org/10.1002/j.1545-7249.2008.tb00207.x>.
- Hancock, G. R., & Schoonen, R. (2015). Structural equation modeling: Possibilities for language learning researchers. *Language Learning*, 65(S1), 160–184. <http://dx.doi.org/10.1111/lang.12116>.
- Heckhausen, H. (1991). *Motivation and action*. Berlin: Springer-Verlag.
- Henry, A. (2010). Gender differences in L2 motivation: A reassessment. In S. A. Davies (Ed.), *Gender gap: Causes, experiences and effects* (pp. 81–102). New York: Nova Science.
- Henry, A., & Cliffordson, C. (2013). Motivation, gender, and possible selves. *Language Learning*. <http://dx.doi.org/10.1111/lang.12009>.
- Hiramori, T. (2003). What enhances language learners' motivation? High school English learners' motivation from the perspective of self-determination

- Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 103(2), 588–600. <http://dx.doi.org/10.1037/a0019682>.
- Jang, H., Reeve, J., Ryan, R. M., & Kim, A. (2009). Can self-determination theory explain what underlies the productive, satisfying learning experiences of collectivistically oriented Korean students? *Journal of Educational Psychology*, 101(3), 644–661. <http://dx.doi.org/10.1037/a0014241>.
- Kim, T., & Schallert, D. L. (2014). Mediating effects of teacher enthusiasm and peer enthusiasm on students' interest in the college classroom. *Contemporary Educational Psychology*, 39(2), 134–144. <http://dx.doi.org/10.1016/j.cedpsych.2014.03.002>.
- Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York: Guilford Press.
- Kozaki, Y., & Ross, S. J. (2011). Contextual dynamics in foreign language learning motivation. *Language Learning*, 61(4), 1328–1354. <http://dx.doi.org/10.1111/j.1467-9922.2011.00638.x>.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174.
- Lee, W., & Reeve, J. (2012). Teachers' estimates of their students' motivation and engagement: Being in synch with students. *Educational Psychology*, 32(6), 727–747. <http://dx.doi.org/10.1080/01443410.2012.732385>.
- Lo, J., & Hyland, F. (2007). Enhancing students' engagement and motivation in writing: The case of primary students in Hong Kong. *Journal of Second Language Writing*, 16(4), 219–237. <http://dx.doi.org/10.1016/j.jslw.2007.06.002>.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- McEown, M. S., Noels, K. A., & Saumure, K. D. (2014). Self-determined and integrative orientations and teachers' motivational support in a Japanese as a foreign language context. *System*, 1–15. <http://dx.doi.org/10.1016/j.system.2014.06.001>.
- Meece, J. L., Glienke, B. B., & Burg, S. (2006). Gender and motivation. *Journal of School Psychology*, 44, 351–373. <http://dx.doi.org/10.1016/j.jsp.2006.04.004>.
- MEXT. (2012). *Hi, friends! 1*. Tokyo: Kyouiku Shuppan.
- MEXT. (2008). *Shogakkou gakushuu shidou youryou kaisetu: Gaikokugo katsudouhen [Explanatory commentary for the elementary school curriculum guidelines: Foreign language activities]*. Retrieved 8/26/10 from http://www.mext.go.jp/component/a_menu/education/micro_detail/_icsFiles/afieldfile/2009/06/16/1234931_012.pdf.
- Moore, K. A., Lippman, L. H., & Ryberg, R. (2015). Improving outcome measures other than achievement. *AERA Open*, 1(2). <http://dx.doi.org/10.1177/2332858415579676>.
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus version 7.3*. Los Angeles, CA: Muthén & Muthén.
- Nakata, Y. (2006). *Motivation and experience in foreign language learning*. Oxford: Peter Lang.
- Nishida, R. (2010). *Empirical studies of affective variables and motivational changes among Japanese elementary school EFL learners*. Unpublished doctoral dissertation. Osaka, Japan: Kansai University.
- Noels, K. A. (2013). Promoting the motivation of Japanese learners of English through autonomy, competence, and relatedness. In M. T. Apple, D. Da Silva, & T. Fellner (Eds.), *Language learning motivation in Japan* (pp. 15–34). Bristol, UK: Multilingual Matters.
- Noels, K. A., Clément, R., & Pelletier, L. G. (1999). Perceptions of teachers' communicative style and students' intrinsic and extrinsic motivation. *The Modern Language Journal*, 83(1), 23–34.
- Noels, K. A., Clément, R., & Pelletier, L. G. (2001). Intrinsic, extrinsic, and integrative orientations of French Canadian learners of English. *Canadian Modern Language Review*, 57, 424–442.
- Noels, K. A., Pelletier, L. G., Clément, R., & Vallerand, R. J. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. *Language Learning*, 50(1), 57–85.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw–Hill.
- Oga-Baldwin, W. L. Q., & Nakata, Y. (2014). Supplementing the elementary foreign language course of study with a self-determination framework. *International Journal of Curriculum Development and Practice*, 16(1), 13–26.
- Oga-Baldwin, W. L. Q., & Nakata, Y. (2015). Structure also supports autonomy: Measuring and defining autonomy-supportive teaching in Japanese elementary foreign language classes. *Japanese Psychological Research*, 57(3), 167–179. <http://dx.doi.org/10.1111/jpr.12077>.
- Pekrun, R., & Linnenbrink-Garcia, L. (2012). Academic emotions and student engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 259–282). New York, NY: Springer.
- Plonsky, L., & Oswald, F. L. (2014). How big is "Big?" interpreting effect sizes in L2 research. *Language Learning*, 64(4), 878–912. <http://dx.doi.org/10.1111/lang.12079>.
- Reeve, J. (2012). A Self-determination theory perspective on student engagement. In *Handbook of research on student engagement* (pp. 149–172). Boston, MA: Springer US. http://dx.doi.org/10.1007/978-1-4614-2018-7_7.
- Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology*, 105, 579–595.
- Reeve, J., & Lee, W. (2014). Students' classroom engagement produces longitudinal changes in classroom motivation. *Journal of Educational Psychology*, 106(2), 527–540. <http://dx.doi.org/10.1037/a0034934>.
- Reeve, J., & Tseng, C.-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36(4), 257–267. <http://dx.doi.org/10.1016/j.cedpsych.2011.05.002>.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 749–761.
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: University of Rochester Press.
- Siegel, H. (2004). High stakes testing, educational aims and ideals, and responsible assessment. *Theory and Research in Education*, 2(3), 219–233. <http://dx.doi.org/10.1177/1477878504046515>.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571–581. <http://dx.doi.org/10.1037/0022-0663.85.4.571>.
- Skinner, E. A., Furrer, C. J., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology*, 100(4), 765–781. <http://dx.doi.org/10.1037/a0012840>.
- Spinath, B., & Steinmayr, R. (2008). Longitudinal analysis of intrinsic motivation and competence beliefs: Is there a relation over time? *Child Development*, 75(5), 1555–1569. <http://dx.doi.org/10.1037/a0028115>.
- StataCorp. (2013). *Stata statistical software: Release 13*. College Station, TX: StataCorp LP.
- Svalberg, A. M.-L. (2009). Engagement with language: Interrogating a construct. *Language Awareness*, 18(3–4), 242–258. <http://dx.doi.org/10.1080/09658410903197264>.
- Svalberg, A. M. L., & Askham, J. (2014). Student teachers' collaborative construction of grammar awareness: The case of a highly competent learner. *Language Awareness*, 23(1–2), 123–137. <http://dx.doi.org/10.1080/09658416.2013.863897>.
- Taguchi, T., Magid, M., & Papi, M. (2009). The L2 motivational self system among Japanese, Chinese and Iranian learners of English: A comparative study. In Z. Dörnyei, & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 66–97). Bristol: Multilingual Matters.
- Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational profiles from a self-determination perspective: The quality of motivation matters. *Journal of Educational Psychology*, 101(3), 671–688. <http://dx.doi.org/10.1037/a0015083>.
- Wang, M.-T., & Eccles, J. S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a

- Trang, M. T., & Leong, J. S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a multidimensional perspective. *Learning and Instruction*, 28(C), 12–23. <http://dx.doi.org/10.1016/j.learninstruc.2013.04.002>.
- Yamauchi, H., & Tanaka, K. (1998). Relations of autonomy, self-referenced beliefs, and self-regulated learning among Japanese children. *Psychological Reports*, 82(3), 803–816. <http://dx.doi.org/10.2466/pr0.1998.82.3.803>.