Teaching to Engage: Deriving Practical Conclusions From Longitudinal Data

W. L. Quint Oga-Baldwin
Waseda University
Luke K. Fryer
University of Hong Kong

Reference Data:
Oga-Baldwin, W. L. Q., & Fryer, L. K. (2018). Teaching to engage: Deriving practical conclusions from longitudinal data. In P. Clements, A. Krause, & P. Bennett (Eds.), *Language teaching in a global age: Shaping the classroom, shaping the world*. Tokyo: JALT.

Teaching to promote motivation in Japanese elementary schools is about helping students engage with material. Engagement describes how students think, act, and feel when they work on their learning tasks. Research has indicated that supportive teaching in elementary schools involves several specific elements, including pacing, clarity, and interest of instruction. In this study, we worked from a single research question: "How does teachers' initial support predict students' in-class engagement at two future time points?" The two goals of this study were (a) to demonstrate how effective teaching early in the school year has a continued influence on elementary school students' engagement across a single school year; and (b) to provide an example of two facets of quantitative research, namely cross-sectional and longitudinal modeling. Results indicated supportive teaching early in the year had a predictive effect on engagement. We discuss the theoretical and practical implications of these findings.

小学校において児童への英語に対する動機付けの為、授業の取組み（エンゲージメント）は大事である。理論上、エンゲージメントは児童の授業中に示す情緒、認識、積極的参加のことである。先行研究では、小学校英語の効果的な支援的な教育に必要な要素は良いペース、明確な指導、興味の促し、適した量・質の高い英語のインプットである。この研究では、「小学校英語の授業において、教員の年度の始めに当たる1学期の支援教育が、2学期と3学期のエンゲージメントへどのような影響を及すのか」という疑問を探究した。研究の目的は二つあった：1）教員の支援の長期的な影響を明記する。2）量的研究の横断的・縦断的モデルの基本の例を明確にする 。結果として、1学期に行った指導は2学期と3学期において影響を及ぼした。その結果を基に、研究と教育現場への理論的、実践的な影響を提案する。

All good teachers seek to engage their students in learning tasks. The question of how this is effectively accomplished is a complicated one. Researchers and teacher educators have attempted to tackle this question for years, and although there is broad consensus on subquestions (Hattie, 2009; Nuthall, 2005; Reeve & Jang, 2006), much work remains to be done on specific contexts (Nishino & Watanabe, 2008). Two important questions concern how we empirically measure good teaching and whether this teaching has its desired outcome. Given that many elementary school teachers in Japan struggle with ways to engage their students (Machida, 2016) and that experts differ in their ideas of what constitutes quality foreign language instruction (Butler, 2015; Oga-Baldwin & Nakata, 2013, 2014a, 2014b; Otsu, 2004), more empirical work on effective classroom practice in elementary schools is necessary.

Quantitative research can provide empirical evidence to support a lay understanding of good quality teaching. The basic element of quantitative research involves expressing concepts, such as good teaching, in terms of countable phenomena and then gathering sufficient data to analyze these phenomena using appropriate statistical approaches (Fryer, Larson-Hall, & Stewart, 2018). As teachers, we develop hypotheses on what kind of teaching will support students' engagement, and using good measurement, we quantify these hypotheses to test them. Should our hypotheses prove valid, the resulting evidence can help to justify our choices beyond simple anecdotes. Quantitative research is therefore necessary to demonstrate proper conclusions in situations in which reasonable people might differ.

In the current study, we sought to demonstrate how elementary school teachers engage their students using effective instructional support. We further sought to illustrate a longitudinal model to validate previously studied classroom phenomena.

Engaging Teaching

Engagement is well recognized as a crucial part of the teaching and learning process (see Christenson, Reschly, & Wylie, 2012; Fredricks, Blumenfeld, & Paris, 2004). Researchers have defined this concept as the point in time when students are actively involved in thinking, acting, and the emotional experience of classroom tasks (Oga-Baldwin & Nakata, 2017). Willingham (2009) stated that cognition, emotion, and behavior are what students remember when they recall learning material. Engagement occurs at the intersection of personal motivation and environmental influences (Oga-Baldwin, Nakata, Parker, & Ryan, 2017). It is further related to the quality of students' motivation and may define how students move between motivational profiles (Oga-Baldwin & Fryer, 2018). There is evidence that engagement acts as a "Rubicon Moment" (Heckhausen, 1991), when students make the conscious or unconscious choice to act, leading them toward future action (Oga-Baldwin, Nakata et al., 2017; Reeve & Lee, 2014). Likewise, although many teachers talk about wanting to "motivate their students," teachers often have difficulty in recognizing the quality of students' motivation (Lee & Reeve, 2014). Thus, what teachers may often describe as a desire to motivate students may better be understood as a desire to engage them in learning.

Like teachers, prior researchers have used a variety of terminology to describe engagement, although most researchers conceptualize engagement as students actively thinking about and working on classroom materials. Some researchers have talked about an "actional phase" in which students carry out classroom tasks (Dörnyei, 2000). Others have measured "motivated behavior" as a description of what students do in class (Nakata, 2006). Still others use the term "on-task behavior" to measure students' activity levels. Although some have also used the concept of "intended effort" (Taguchi, Papi, & Magid, 2009), it should be made clear that this construct is clearly different from engagement. "Effort" measured at the time of the event might indeed be synonymous with engagement, but the key adjective "intended" frames the idea toward the future. It further equates this concept with a unitary quantity of motivation, which research has indicated is inaccurate in comparison to a flexible quality of motivation (Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). Motivation provides reasons for actions, and thus any discussion of students' activity and active learning is a clear reference to engagement.

Given this definition, engagement is a crucial construct in exploring effective teaching: Nothing happens without action. As the visible point of action when students pay attention, actively listen, and successfully produce language (Oga-Baldwin & Nakata, 2017), engagement may be seen as one clear indicator of successful instruction (Oga-Baldwin, Nakata et al., 2018; Reeve, 2012). Teachers who engage their students see them grow and achieve better grades (Jang, Kim, & Reeve, 2012). By assessing whether teachers are effectively engaging students, we may recognize the quality of learning that an instructor brings to the classroom. What teachers do and say in their classes is thus directly related to students' degree of engagement (Oga-Baldwin, 2015; Oga-Baldwin, Nakata et al., 2017; Reeve, 2012)

In the teaching of English as a foreign language, Japanese schools are plagued with numerous instructional problems (Sakai & Kikuchi, 2009); key among them is that teachers often do not effectively engage students through interesting, meaningful activities. Accordingly, students may suffer deficits in motivational quality upon entering secondary and then tertiary education (Fryer, 2015, 2017; Fryer, Ginns, & Walker, 2014, 2016). Even as early as elementary school, students may show lower engagement and interest in learning a foreign language (Carreira, 2011).

Recent work has demonstrated how positive emotional, behavioral, and cognitive engagement can predict students' motivation over the course of a semester (Oga-Baldwin & Nakata, 2017). Follow-up work has shown how engagement mediates both prior motivation and the classroom environment to predict students' achievement and motivation at the end of a school year (Oga-Baldwin, Nakata et al., 2017).

In the present study, the researchers measured the quality of motivation as it developed over the course of a year of elementary school. The research showed that future motivation and achievement develop at the intersection of the teaching environment and students' prior motivation, hinging on engagement as the central point tying the model together. Thus, by engaging students, teachers help students to develop more high-quality motivation over the course of a school year. A person-centered follow-up to this study (Oga-Baldwin & Fryer, 2018) demonstrated that engagement was indeed related to improving the quality of student motivation. In an examination of engagement as a covariate of latent profile transition analysis results using intrinsic and extrinsic motivation, students who moved toward higher quality motivational groups were found to show higher levels of engagement in class. Engagement thus may be an important catalyst for changes in motivational quality over time.

Although these results indicate an important role for engagement in education, the research conducted in Japan has not measured engagement longitudinally. Given the question of how Japanese elementary teachers can effectively engage students in foreign language education (Machida, 2016), longitudinal work on how teachers' practice influence student engagement in a natural classroom setting is necessary.

Longitudinal Research

Sound research, by its very nature, must be replicable. As has been noted in commentaries (Cumming, 2012; Kline, 2009), replication represents a serious question for social science research. Cross-sectional research may hint at results, but measuring both the same samples and the same constructs over time gives us a better understanding of how phenomena impact the real world. The advantage of longitudinal research is that it reduces (though does not eliminate) the issue of replicability, as a successful longitudinal project measures and re-measures the same variables. At the same time, there is a significant need to replicate the results of even longitudinal research to verify the results.

In one recent example, researchers measured Japanese secondary school students' self-efficacy for English, mathematics, and Japanese over the course of a school year (Fryer & Oga-Baldwin, 2017). This study used an auto-lag cross-lag design, meaning that self-efficacy for each of the three school subjects was used to predict (a) the same variable at the end of the year (auto-lag) and (b) the other two variables at the end of the year (cross-lag). This was done to control for the potential effects each variable might have on the other variables. The results showed that, contrary to popular belief (Otsu, 2004), students with a higher self-efficacy for English at the beginning of the school year ended the school year with an accordingly higher self-efficacy for Japanese. The reverse effect was not found: Self-efficacy for Japanese had no effect on English. No predictive effects were found for either language on mathematics.

Important to the research above is the fact that the same construct (self-efficacy) was measured twice over the course of the school year for each of the three school subjects using the same large, representative sample of secondary school students. By using simple correlation or regression with only two of the variables—for example, mathematics self-efficacy in the spring and English self-efficacy in the fall—the researchers might have demonstrated a positive relationship between the two. Indeed, mathematics self-efficacy correlated with later English self-efficacy at .48, not a small correlation. Were these two variables considered in isolation, the researchers might have (incorrectly) concluded that mathematics self-efficacy would predict self-efficacy for English as a foreign language. However, once the researchers controlled for prior correlations, the predictive effect between mathematics and English disappeared, thus discouraging these and future researchers from pursuing erroneous future research.

Presenting an alternative, although not equal, approach, an earlier body of research studies started with cross-sectional investigations (Oga-Baldwin & Nakata, 2017). This research used engagement as a lagged predictor of self-determined motivation (Deci & Ryan, 1985), which meant that engagement was sampled several weeks prior to the outcome variables. Unlike many cross-sectional studies that sample all the measured variables at the same time, the researchers took measurements at two time points, but did not measure the same variables at both times. Although this meets the necessity that one variable occurs before another in time (Kline, 2009), it does not meet any of the other necessities for indicating potential causality. Most importantly, as noted above in the discussion of the study by Fryer and Oga-Baldwin (2017), this study had the potential to misrepresent the predictive relationship between engagement and quality of motivation because of a lack of appropriate controls.

Both theory (Reeve, 2012) and empirical work (Jang, Reeve, Ryan, & Kim, 2009) have indicated that the time-lagged cross-sectional predictive relationship should also be replicable as part of longitudinal work. This relationship was borne out in a follow-up study involving a similar cohort of students, studied for a full year (Oga-Baldwin, Nakata et al., 2017). This study used an auto-lag cross-lag model to account for the effects of prior motivation on students' motivation at the end of the year. The same pattern of relationships was reproduced in this study, with similar (though weaker) predictive effects replicated between engagement and outcome motivation. This further illustrates the need for replication, resampling, and longitudinal designs to compensate for any misspecifications in the model; the weaker effects will likely be replicated in other studies that appropriately account for covariates.

To countermand the potential for error, researchers must honestly address the question of longitudinal and cross-sectional sampling and accurately represent their conclusions in light of the gap between the two approaches to research design and analysis. In the current paper, we illustrate some of the issues involved in cross-sectional and longitudinal research into the construct of engagement as well as present potential pitfalls.

Aims

To investigate the effects of the learning environment on engagement, we sought to answer the research question: *How does teachers' initial support predict students' in-class engagement at two future time points?* We performed this investigation for two reasons. First, we sought to demonstrate the continued predictive validity of the instruments used in previous studies (Oga-Baldwin & Nakata, 2017; Oga-Baldwin, Nakata et al., 2017) with a later subsample of the same cohort. This work may thus be understood as an extension of the previous work. Second, we hope to provide an illustration of a very basic cross-sectional and longitudinal model using these instruments. The aim was that future

generations of language education researchers may operationalize the principles outlined above and reproduce our findings on the topic of engagement in their classrooms.

Method

Sample

Public elementary school students in western Japan (n = 272: female n = 137, male n = 135; ages 11-12) agreed to participate in the research. Students were in their 6th year of elementary school and had one year of prior English learning experience. English classes were primarily listening and speaking classes, in accordance with the national guidelines (MEXT, 2008). Research participation was coordinated through meetings with the board of education, school principals, and teachers. Six schools located in a suburban area answered the call to participate in the study. The municipality was largely representative of Japan as a whole (Japan Statistics Bureau, 2016). Surveys were administered at the beginning of the 2014-2015 school year. Ethical permission to conduct this research was granted by the Fukuoka University of Education Ethics Review Board.

Instruments

Students completed the Supportive Structure Questionnaire developed for elementary school English classrooms (Oga-Baldwin, 2015; Oga-Baldwin & Nakata, 2015). This survey measured students' perceptions of how their teachers supported students' basic needs and engagement through clarity, pacing, appealing to students' interest, amount and quality of English spoken, and direct instruction. Internal reliability was acceptable (> .70; DeVellis, 2012). Surveys were completed in April of 2014. This sampling was the cross-sectional portion of the model.

To test how teacher support influenced students' in-class behavior, we measured engagement 6 months later in October 2014 and again in February 2015. We measured engagement using scales developed by Jang et al. (2012). This 11-item instrument was piloted, translated, and externally validated by the authors (for a review of the instrument, see Oga-Baldwin & Nakata, 2017; Oga-Baldwin, Nakata et al., 2017). Internal reliability for these scales was good (Cronbach's α_{FALL} = .88, α_{WINTER} = .91). This sampling should be considered the longitudinal part of the model.

All items, their validation process, and factor loadings are presented in greater detail in the previous studies (Oga-Baldwin & Nakata, 2015, 2017; Oga-Baldwin, Nakata et al., 2017). The current instrument's descriptive statistics and correlations are presented in Table 1. Item wordings are in the Appendix.

Analyses

All statistical analyses were performed in M*Plus* 8.0 (Muthén & Muthén, 2017). We constructed a predictive auto-regressive structural equation model. The predictive portion of the model used teacher support to predict engagement in both the fall and winter. The longitudinal portion of the model used engagement in the fall to predict engagement in the winter. The hypothesized model is presented in Figure 1. It should be noted that this model could also be considered a partial mediation model; however, mediation has not been explicitly tested.

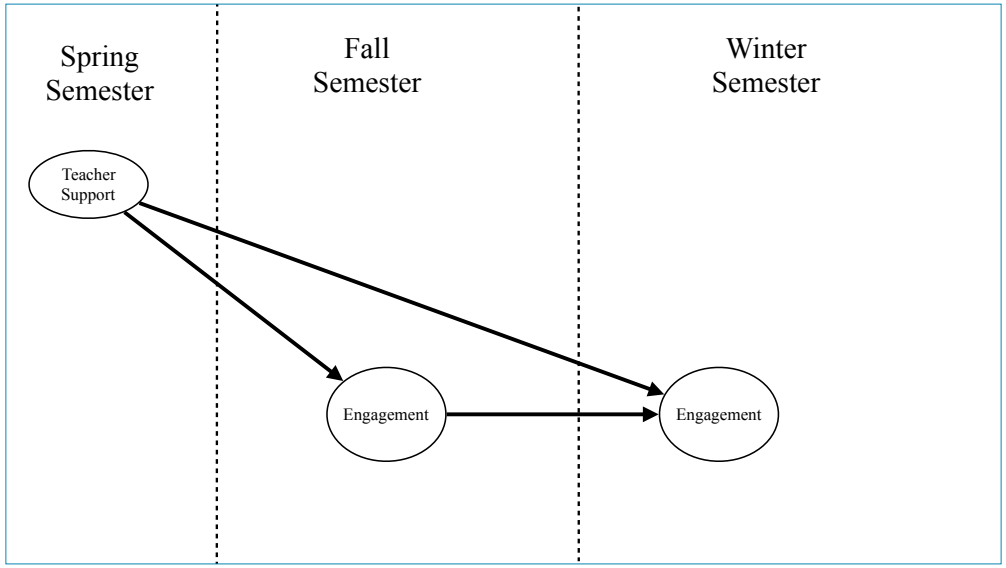

Figure 1. Hypothesized model; uses teacher support in spring semester to predict engagement in both the fall and winter semesters.

Results

Table 1 presents the complete descriptive statistics and correlations. Students generally rated the teachers' support as quite positive overall; The mean score was just over 4 out of 5 points on the scale. Similarly, students rated themselves as highly engaged as well, $mean_{FALL}$ = 3.95, $mean_{SPRING}$ = 3.95. The table of correlations showed engagement and

teaching quality positively correlated at both time points, $r_{FALL} = .50$, $p < .001$, $r_{WINTER} = .67$, $p < .001$. Engagement positively correlated with itself over time, $r_{FALL\text{-}WINTER} = .54$, $p < .001$.

Table 1. Descriptive Statistics and Correlations

Construct	1	2	3
1. Teacher support spring	-		
2. Engagement fall	.50***	-	
3. Engagement winter	.67***	.54***	-
M (95% CI)	4.02 (3.93, 4.10)	3.95 (3.86, 4.03)	3.89 (3.80, 3.98)
SD	.69	.72	.72
Cronbach's α	.70	.88	.91

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

In the hypothesized model (Figure 2), teacher support predicted student engagement similarly at both time points, $\beta_{FALL} = .50$, $p < .001$, $\beta_{FALL} = .53$, $p < .001$. Longitudinally, engagement showed only moderate auto-correlation, $\beta_{FALL\text{-}WINTER} = .28$, $p < .001$. This weaker beta value should be noted; it is roughly half the zero-order correlation presented in Table 1. The results indicate that students' perceptions of teacher support in the spring semester strongly predict engagement in both the fall and winter semesters. The fit for this model was highly acceptable (Kline, 2011).

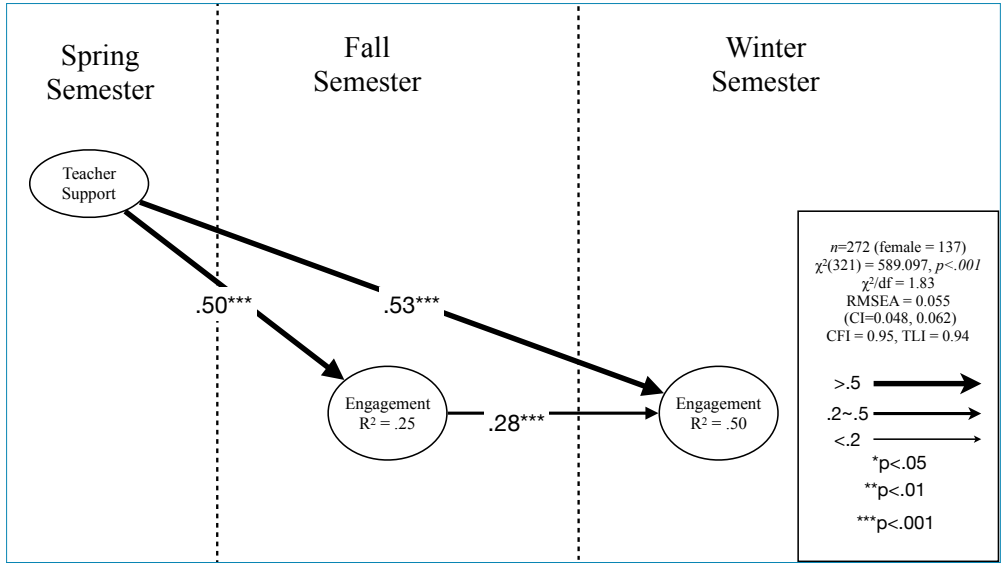

Figure 2. Predictive longitudinal model of teacher support on student engagement.

Discussion

This study successfully answered the question: *How does teachers' initial support predict students' in-class engagement at two future time points?* Confirming previous research (Jang et al., 2012; Oga-Baldwin, Nakata et al., 2017), the data indicate that the quality of teachers' instructional support positively predicts elementary students' engagement across the school year. Teachers' practices are thus an important part of the process in engaging students in learning activities. At the same time, engagement at one time only moderately predicts future engagement, indicating that the influence of the teacher, even across several months, remains relatively strong, but students' level of behavioral, cognitive, and emotional activity may be inconstant. Thus, unlike motivation, which may have trait-like attributes indicated by strong auto-regressive correlations, engagement is a much more situational construct.

After comparing the table of zero-order correlations and the hypothesized structural regression model, had we taken only two of those variables we might have made different conclusions. The predictive effect of teacher support on engagement at the end of the year was weaker than might be imagined when reviewing the zero-order correlations.

Likewise, without controlling for the influence of teacher support, we falsely might have assumed that the relationship between engagement at different time points is stronger than it actually is. As a result, we gain a more nuanced understanding of how prior engagement partially mediates the effects of teacher support at the beginning of the school year on student engagement at the end of the year.

Implications

The implications of this research are twofold. First, we see that according to the instruments used, positive teacher support has a strong predictive effect on student engagement at two distal future time points. This shows the importance of creating a clear and interesting learning environment, within which teachers demonstrate clear leadership. Students respond to these factors and engage with the learning material. Likewise, engagement at the first time point has a mediating effect on engagement at the second time, indicating the importance of keeping students continuously engaged in the learning process. Given these findings, within-person engagement fluctuates from class to class. The strength of the predictive relationships between teacher support and engagement further indicates the importance of setting a positive learning environment early in the year.

Limitations and Future Directions

Given that this was designed as a partially longitudinal model to illustrate basic research design, we must take care when interpreting these findings beyond a demonstration of modeling principles. Other environmental and personal elements, such as prior motivation, may also influence students' engagement. Furthermore, a truly predictive longitudinal model would measure all of the variables in question in a cross-lagged auto-lagged model (i.e., all variables measured twice and modeled as predicting themselves as well as other constructs). Due to the nature of the current data, this approach to modeling was not possible; only a partial model could be constructed. Future studies should take care to address these issues and create a truly reciprocal longitudinal model to verify the relationships.

Conclusion

In this study, we have given an example of how to test a basic predictive model across the course of a school year as well as a longitudinal auto-regressive model, all using structural equation modeling. These models indicated that quality teacher support can predict engagement at two future time points, demonstrating the importance of how teachers create their learning environment early in the school year. Elementary school teachers should work toward providing interesting, clear, and high quality direct instruction early and often to engage students in English classes.

Bio Data

W. L. Quint Oga-Baldwin trains elementary school English teachers and teaches research methods. He is a professor in the School of Education at Waseda University. He can be reached at <quint(at)waseda.jp>

Luke K. Fryer is the Head of Faculty and Postgraduate Teaching and Learning Programs at the University of Hong Kong. His email is <fryer(at)hku.hk>

References

Butler, Y. G. (2015). English language education among young learners in East Asia: A review of current research (2004-2014). *Language Teaching, 48*(03), 303-342. https://doi.org/10.1017/S0261444815000105

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. https://doi.org/10.1016/j.system.2011.01.009

Christenson, S. L., Reschly, A. L., & Wylie, C. (2012). *Handbook of research on student engagement*. Boston, MA: Springer US.

Cumming, G. (2012). *Understanding the new statistics: Effect sizes, confidence intervals, and meta-analysis*. New York, NY: Routledge.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

DeVellis, R. F. (2012). *Scale development: Theory and application* (3rd ed.). Thousand Oaks, CA: Sage.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109. https://doi.org/10.3102/00346543074001059

Fryer, L. K. (2015). Predicting self-concept, interest and achievement for first-year students: The seeds of lifelong learning. *Learning and Individual Differences, 38,* 107-114. https://doi.org/10.1016/j.lindif.2015.01.007

Fryer, L. K. (2017). (Latent) transitions to learning at university: A latent profile transition analysis of first-year Japanese students. *Higher Education, 73*(3), 519-537. https://doi.org/10.1007/s10734-016-0094-9

Fryer, L. K., & Oga-Baldwin, W. L. Q. (2017). One more reason to learn a new language: Testing academic self-efficacy transfer at junior high school. *Frontline Learning Research, 5*(4), 61-75. https://doi.org/10.14786/flr.v5i4.301

Fryer, L. K., Ginns, P., & Walker, R. (2014). Between students' instrumental goals and how they learn: Goal content is the gap to mind. *British Journal of Educational Psychology, 84*(4), 612-630. https://doi.org/10.1111/bjep.12052

Fryer, L. K., Ginns, P., & Walker, R. (2016). Reciprocal modelling of Japanese university students' regulation strategies and motivational deficits for studying. *Learning and Individual Differences, 51,* 220-228. https://doi.org/10.1016/j.lindif.2016.08.032

Fryer, L. K., Larson-Hall, J., & Stewart, J. (2018). Experimental and longitudinal advances in language learning research. In A. Phakiti, P. D. Costa, L. Plonsky, & S. Starfield (Eds.), *Palgrave handbook of applied linguistics research methodology*. New York, NY: Palgrave.

Hattie, J. (2009). *Visible learning*: A synthesis of over 800 meta-analyses relating to achievement. New York, NY: Routledge.

Jang, H., Kim, E. J., & Reeve, J. (2012). Longitudinal test of self-determination theory's motivation mediation model in a naturally occurring classroom context. *Journal of Educational Psychology, 104*(4), 1175-1188. https://doi.org/10.1037/a0028089

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. https://doi.org/10.1037/a0014241

Japan Statistics Bureau (2016). *Japan statistical yearbook 2016.* Available from http://www.stat.go.jp/english/data/nenkan/index.htm.

Kline, R. B. (2009). *Becoming a behavioral sciences researcher.* New York, NY: Guilford.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.

Lee, W., & Reeve, J. (2012). Teachers' estimates of their students' motivation and engagement: Being in synch with students. *Educational Psychology, 32*(6), 727-747. https://doi.org/10.1080/01443410.2012.732385

Machida, T. (2016). Japanese elementary school teachers and English language anxiety. *TESOL Journal, 7,* 40-66. https://doi.org/10.1002/tesj.189

MEXT. (2008). *Shogakkou gakushuu shidou youryou kaisetu: Gaikokugo katsudouhen* [Explanatory commentary for the elementary school curriculum guidelines: Foreign language activities]. Retrieved August 26, 2010, from http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2009/06/16/1234931_012.pdf

Muthén, B., & Muthén, L. (2017). *Mplus version 8.0*. Los Angeles, CA: Statmodel.

Nishino, T., & Watanabe, M. (2008). Communication-oriented policies versus classroom realities in Japan. *TESOL Quarterly, 42*(1), 133-138. https://doi.org/10.1002/j.1545-7249.2008.tb00214.x

Nuthall, G. A. (2005). The cultural myths and realities of teaching and learning. *Teachers College Record, 107*(5), 895-934. http://www.tcrecord.org/library/abstract.asp?contentid=11844

Oga-Baldwin, W. L. Q. (2015). *Student engagement and motivation in primary foreign language classes: a mixed- methods longitudinal study* (Unpublished doctoral thesis). Hyogo University of Teacher Education, Japan.

Oga-Baldwin, W. L. Q., & Fryer, L. K. (2018). Schools can improve motivational quality: Profile transitions across early foreign language learning experiences. *Motivation and Emotion, 52*(03), 317. https://doi.org/10.1080/00461520.2011.614526

Oga-Baldwin, W. L. Q., & Nakata, Y. (2013). Native vs. non-native teachers: Who is the real model for Japanese elementary school pupils? *The Journal of Asia TEFL, 10*(2), 91-113.

Oga-Baldwin, W. L. Q., & Nakata, Y. (2014a). 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. (2014b). Optimizing new language use by employing young learners' own language. *ELT Journal, 68*(4), 410-421. https://doi.org/10.1093/elt/ccu010

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. https://doi.org/10.1111/jpr.12077

Oga-Baldwin, W. L. Q., & Nakata, Y. (2017). Engagement, gender, and motivation: A predictive model for Japanese young language learners. *System 65,* 151-163. https://doi.org/10.1016/j.system.2017.01.011

Oga-Baldwin, W. L. Q., Nakata, Y., Parker, P., & Ryan, R. (2017). Motivating young language learners: A longitudinal model of self-determined motivation in elementary school foreign language classes. *Contemporary Educational Psychology, 49,* 140-150. https://doi.org/10.1016/j.cedpsych.2017.01.010

Otsu, Y. (2004). *Shogakko de no eigo kyouiku wa hitsuyou ka [Is elementary school English education necessary?].* Tokyo, Japan: Keio University Press.

Reeve, J. (2012). A self-determination theory perspective on student engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 149-172). Boston, MA: Springer US. https://doi.org/10.1007/978-1-4614-2018-7_7

Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology, 98*(1), 209-218. https://doi.org/10.1037/0022-0663.98.1.209

Reeve, J., & Lee, W. (2014). Students' classroom engagement produces longitudinal changes in classroom motivation. *Journal of Educational Psychology, 106*(2), 527-540. https://doi.org/10.1037/a0034934

Sakai, H., & Kikuchi, K. (2009). An analysis of demotivators in the EFL classroom. *System, 37*(1), 57-69. https://doi.org/10.1016/j.system.2008.09.005

Willingham, D. T. (2009). *Why don't students like school?* San Francisco, CA: Jossey-Bass.

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. https://doi.org/10.1037/a0015083

Appendix

Instruments Used in This and Previous Studies

Japanese	English
Teacher Support	
先生の説明は分かりやすかった	My teacher's explanation was easy to understand
活動のすすむはやさが良かった	The pacing of the lesson was good
先生は何をすればいいかしめしてくれた	My teacher told me what to do
先生は日本語より英語を多く話した	My teacher used more English than Japanese
先生は楽しい授業をしてくれた	My teacher made the class fun
Engagement (Emotional)	
ウキウキした気分になった	I felt upbeat
楽しめた	I had fun
授業に興味を持てた	I was interested in the lesson
知らなかったことばやぶんかを学べてうれしかった	I was happy to learn new things
Engagement (Behavioral)	
活動に参加できた	I participated in the activities
私は活動に最後まで取り組んだ	I worked hard until the end of activities
私は先生の話や活動に集中できた	I paid attention to my teacher
Engagement (Cognitive)	
自分の言いたいことを英語で伝えようとした	I tried to say what I wanted in English
相手の言いたいことをわかろうとした	I tried to understand what my partners were saying
自分の言いたいことが英語で伝わるようにがんばった	I tried to make myself understood in English
先生や友だちの話をわかろうとした	I tried to understand what my teachers' and friends' said

Note: In line with previous studies (Oga-Baldwin & Nakata, 2017), the three engagement scales (emotional, behavioral, cognitive) were treated as a single variable.