# Assessing Motivation and Instruction for Languages at Japanese JHSs

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This study examined an integrative model for assessing students' learning experience of foreign and native languages at Japanese junior high schools. The integrated model consisted of perceived control, regulation of motivation, and perceptions of instruction. The hypothetical support and harm of instruction for students' motivations and beliefs was the focus of the pilot study and the broader research programme. As a preliminary step towards longitudinal analyses, the integrative model and its individual constructs were also assessed for construct validity and reliability; interrelationships along with year-end subject achievement were examined. Results support the integrated model as generally fitting well Japanese junior high school and specifically fitting language education. Correlative results for English language learning were theoretically consistent and comparable to past findings in other domains and cultural contexts. The practical implications of the findings and future directions for research in this area are discussed.

　本研究は、中学校における言語学習に関する動機付けと指導のモデルを評価したものである。このモデルは認知制御（perceived control）、動機の調整（ regulation of motivation）、指導の認識（perceptions of instruction)を基に、概念の妥当性や信頼性、内的関係性が検証された。その結果、中学校の言語学習に適していることが明らかになった。言語学習の相関的結果は、他領域及び他文化における過去の研究結果と一致していた。調査結果及び本研究分野における今後の方向性について論じた。

Junior high school, middle school, lower secondary school—its label may change across national borders, but the challenges it presents for young adolescents are transnational. Among the many difficulties students face during the transition to this sector of education and then across this educational experience are the well-established declines in student motivation for learning. Although this issue has seen substantial research in North America (Eccles et al., 1983; Eccles, Lord, & Midgley, 1991; Eccles & Midgley, 1989; Eccles et al., 1993; Wigfield, Eccles, Maciver, Reuman, & Midgley, 1991), less research has addressed this issue internationally and scant work has been conducted in Japan.

In Japan, junior high school, in addition to being an important transition to a new type of formal education, has historically been the beginning of students' foreign language education. During the past decade, curriculum reforms have introduced foreign language activities to elementary school and in 2020 English will become a formal course of study for year 5 and year 6 students.

Facing this intense period of curriculum reform and looking to a future of adapting to the changing language learning landscape in Japanese junior high school, it is essential that we effectively assess the student language learning experience. We need to assess it both generally and with specific attention to how and why students are motivated to learn. Student motivation must be understood within domain specific learning contexts. Furthermore, students' broader educational experiences and connections between the courses students engage in need clarification.

Motivation for learning a language has classically been researched in a handful of applied linguistics-specific models organised by well-established SLA researchers (see Dörnyei & Ryan, 2015; Gardner & Lambert, 1959). Although they are important for describing second language acquisition across the life span, the models propagated by SLA researchers have less explanatory power within the structures of formal education. In formal education environments, we suggest that theories of human motivation,

which have established practical and theoretical usefulness in a broad range of learning contexts, are often a more powerful means of supporting language learning.

In the present research programme (Oga-Baldwin & Fryer, 2016), for which the current study is a measurement-oriented pilot, one motivation model, one belief model, and a model of instruction are briefly reviewed. These models are then piloted together as an integrative framework for understanding the junior high school student experience. Analysis of the pilot study included convergent and divergent construct validity, construct reliability, and the interrelationships between motivational and belief variables and teacher instruction. In the current study mathematics, native language, and foreign language course experiences were explored, in an effort to test whether the models fit each of these domains of study during junior high school. Descriptive and correlative results for foreign language learning classes were then exclusively reviewed to determine whether the interrelationships in this specific domain were consistent with past research in other domains of learning. This study will lay a foundation for future work in Japanese junior high schools. It will encourage future researchers to examine foreign language learning in the broader context of learning at junior high school, rather than as a separate and unique motivational- or belief-related experience.

## Background

Longstanding (e.g., fit-stage expectancy-value theory; Eccles et al., 1993) and more recent (e.g., implicit theories of intelligence; Dweck, 1999) research in the area of junior high school motivations and beliefs regarding student learning have demonstrated the potential negative effects of these learning environments. Research examining the transition to and experiences across secondary school has generally presented broad declines in both motivations for and beliefs about ones' ability to learn (Wigfield, Muenks, & Rosenzweig, 2015). Expectancy-value has perhaps been the most commonly utilised framework for researching junior high school motivations and beliefs. It is a longstanding model combining key motivations and beliefs about learning. It is, however, a model focused squarely on individual differences and aimed at understanding an individual's choices. It is not well disposed to unravel the interaction between classroom instruction, curricula, and students' motivations and beliefs.

Two theories that examine each motivation or ability belief in a more fine-grained manner and share an overlapping model of teacher–student interaction are self-determination theory (SDT) (Deci & Ryan, 1985) and perceived control theory (Skinner, Zimmer-Gembeck, Connell, & Wellborn, 1998). Based on recent research undertaken in Japanese higher education (Fryer, 2015, 2017; Fryer, Ainley, & Thompson, 2016; Fryer,

Ginns, Howarth, Anderson, & Ozono, 2018; Fryer, Van den Broeck, Ginns, & Nakao, 2016) and elementary schools (Oga-Baldwin & Fryer, 2018; Oga-Baldwin & Nakata, 2015, 2017; Oga-Baldwin, Nakata, Parker, & Ryan, 2017), these models were selected and combined to provide an in-depth and integrative examination of the students learning languages in the transition to and then across junior high schools in Japan.

SDT was drawn on to provide a comprehensive and contiguous model for explaining why students learn: that is, their qualitative reasons for engaging with learning materials. SDT (Deci & Ryan, 1985) models motivation for engaging in an activity across a continuum from *amotivation* (complete lack of motivation), to *extrinsic motivation* (motivated for entirely external reasons), to *introjected motivation* (motivated by significant others), to *identified motivation* (motivated for mostly internally-regulated reasons), and finally to *intrinsic motivation* (motivated for entirely internally regulated reasons). Recent research has suggested that SDT's continuum is well suited for the Japanese educational context (Oga-Baldwin & Nakata, 2014).

There are a plethora of perceived control (ability-beliefs) related constructs (Skinner, 1996). The most famous and empirically relevant of this family is self-efficacy (Bandura, 1997). Self-efficacy is defined loosely as the belief that one is able to sufficiently accomplish a specific task. Academic self-efficacy and its mediators are regularly listed by meta-analytic findings (e.g., Hattie, 2009) as one of the most powerful predictors of achievement across a broad range of domains. Academic self-efficacy is generally accepted as being a crucial belief for students' perseverance (Bandura, 1993). Perseverance is clearly important for any type of learning but in the context of learning a language—a process that never really ends and can be very frustrating—self-efficacy is of the utmost importance.

Internally regulated value (as defined by SDT) for learning is hypothesised as being enhanced by instruction that is autonomy supportive: that is, supporting motivations and emotions across the learning experience. Externally regulated value for learning is hypothesised as being encouraged by teaching that is perceived by students as controlling. Academic self-efficacy, as an example of a perceived control construct, is hypothesised as being increased by instruction that is well structured, easy to understand, includes assessment that is fair and provides students with helpful feedback (Skinner, 1995).

In the current study, the constructs discussed to this point were modelled together as latent variables within an integrative framework. Confirmatory factor analysis was used to establish the convergent and divergent validity of the constructs. Raykov's rho (Raykov, 1997) was utilised to assess the composite reliability of each construct. As a final

step in the present study, descriptive statistics for the integrative model and the latent intercorrelations were calculated and compared.

## Aims

There were three objectives for the current study: (a) present a framework for understanding motivations and beliefs for learning a language in formal classrooms, (b) demonstrate the measurement properties of this framework for both foreign and native language learning, and (c) establish that the interrelationships between the framework's components for language courses is consistent with past research findings in a broad array of other domains of learning. Mathematics was included to determine whether fit observed for language studies (Japanese and English) was substantively different than other totally unrelated subjects.

## Methods
### Sample and Procedures

For the current validation study, a random sample of 500 (from a total of 847 students; male = 432, female = 415) 1st-year junior high school students from three schools in Western Japan was selected. Participating students were between 12 and 13 years old. Student participation in the study was organised through meetings with the local board of education and school staff. Students' participation was voluntary. Students' parents were notified regarding student involvement in the study. Ethical oversight for the current study was a part of the review process for the grant supporting the overall research programme (JSPS Grant-in-aid for Scientific Research). Surveys regarding students' motivations, beliefs, and perceptions of instruction were undertaken in their Japanese, English, and mathematics classes at the beginning of their 1st year of junior high school.

### Instrumentation

Surveys included eight scales in total. Four scales assessed the regulation of students' motivation (each three items): intrinsic, identified, introjected, and extrinsic motivation taken from the self-regulation questionnaire (Ryan & Connell, 1989; Yamauchi & Tanaka, 1998). These scales were specifically re-developed for the Japanese public school context (Oga-Baldwin & Nakata, 2015; 2017). One scale (from the patterns of adaptive learning inventory; Midgley et al., 2000) assessed academic self-efficacy with five items.

Three scales assessed students' perceptions of the quality of their teacher's instruction: structure, autonomy-support (Belmont, Skinner, Wellborn, & Connell, 1988), and external control (Jang, Reeve, Ryan, & Kim, 2009). These three scales had previously been successfully tested in the context of Japanese higher education (Fryer, Nakao, & Anderson, 2012). A full list of items with translations is included in the Appendix.

Surveys were given to students during classes for the subject of mathematics, Japanese, and English as a foreign language separately. Students self-reported their agreement with scale items across the Likert-formatted scale, from 1 (*I don't think so at all*) to 6 (*I think so*). The scale for each subject had a stem to differentiate the items (e.g., In my English class this year . . .; In my Japanese class this year . . .; In my mathematics class this year . . .).

## Analyses

Prior to analyses, missing data (< 1%) were coded and then accounted for by full information maximum likelihood estimation within Mplus 7.2 (Muthén & Muthén, 1998-2015). Configural confirmatory factor analysis was undertaken for each of the three subjects (i.e., English, Japanese, and math). Fit for structural equation models were assessed with incremental (comparative fit index [CFI]) and absolute (root mean square error of approximation [RMSEA]) measures to determine model fit. Acceptable/good fit were based on CFI values above .90/.95 (McDonald & Marsh, 1990) and RMSEA values below .05/.08 (Browne & Cudeck, 1993). Analyses then proceeded with assessing reliability (Raykov's rho; Raykov, 2009).

Student achievement used in the current study was obtained from schools as a part of the overall programme of research. Term 3 student grades (in Japanese, foreign language, and mathematics), which were calculated by the subject teachers, were used. As the raw data these grades were based on was not available, their reliability could not be calculated.

## Results

A configural test of the full model was undertaken for each of the students' experiences in their mathematics, Japanese, and English subjects. The fit for each configural model (Table 1) was adequate and consistent across the three subjects.

## Table 1. Model Fit for English, Japanese and Math Subject Study

|  | RMSEA | CI 90% | CFI | Chi-square |
|---|---|---|---|---|
| English | .06 | .05 - .06 | .94 | 804.61 (289) |
| Japanese | .06 | .05 - .06 | .94 | 682.00 (271) |
| Math | .06 | .05 - .06 | .95 | 527.78 (209) |

*Note.* CFI = comparative fit index; RMSEA = root mean square error of approximation.

The latent intercorrelation for all variables and yearend achievement were calculated (Table 2). As we would expect, internally regulated motivation (intrinsic and identified) and self-efficacy beliefs presented the strongest relationships with achievement. Perceptions of instruction were not significantly related to achievement. Introjected motivation was negatively (significantly) related to achievement. With the exception of introjected motivation and controlling teaching, all the variables were above 3 (out of a possible 6). The strongest type of reported motivation was identified motivation (*M* = 3.74). Latent reliability for all variables was acceptable. Reliability for extrinsic motivation was the lowest suggesting it is the least congruent with Japanese middle school experiences—at least at the beginning of their 1st year. The confirmatory factor analysis loading for each item, along with all items, is presented in the Appendix.

## Table 2. Correlation, Reliability, and Descriptive Statistics for Foreign Language Course Learning

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Achievement | | | | | | | | | |
| 2. Intrinsic | **.25** | | | | | | | | |
| 3. Identified | **.34** | **.82** | | | | | | | |
| 4. Introjected | -.03 | **.52** | **.53** | | | | | | |
| 5. Extrinsic | **-.17** | **-.39** | **-.26** | **.26** | | | | | |
| 6. Self-efficacy | **.28** | **.71** | **.76** | **.47** | **-.29** | | | | |
| 7. Structure | .09 | **.29** | **.30** | **.16** | -.09 | .34 | | | |
| 8. Autonomy Support | .00 | **.26** | **.31** | **.21** | -.11 | **.33** | **.85** | | |
| 9. External control | -.07 | -.05 | -.12 | .07 | .11 | -.07 | -.08 | .00 | |

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *M* | 3.35 | 3.74 | 4.57 | 2.53 | 3.12 | 3.82 | 4.15 | 3.66 | 2.29 |
| *SD* | .94 | 1.47 | 1.35 | 1.16 | 1.19 | 1.23 | 1.08 | 1.15 | 1.13 |
| Raykov's rho | | .92 | .90 | .80 | .66 | .91 | .76 | .82 | .81 |

*Note.* Correlations in bold are significant (*p* < .01).

## Discussion

### Overview

Established constructs from well-known psychological theories were reviewed and presented as an integrative model of essential motivations and beliefs for junior high school classroom learning, both generally and specifically in foreign language classrooms. The confirmatory factor analysis of the integrative model for mathematics, English, and Japanese subject learning suggested that fit for the motivation-belief-instruction model was acceptable for all three subjects. Furthermore, composite reliability in the context of English language study was at least sufficient, and for many of the constructs it was high. These findings support the use of this motivational-belief-instruction model for researching English language learning in junior high school classrooms, along with other subjects.

Students' self-reports of the integrated model's constructs indicated that students were primarily motivated for internally regulated reasons. Furthermore, students perceived structure (i.e., instruction that supports students' competence-related beliefs, e.g., providing feedback regarding progress) to be the most prominent component of classroom instruction. In contrast, students reported being less motivated for more externally regulated reasons (i.e., extrinsic and/or introjected). At least at the beginning of the year, students reported low experiences of controlling teaching (i.e., teachers using forceful language, constraining students' choices).

The interrelationships between the integrated model's constructs were consistent with past research in the areas of SDT and perceived control, suggesting a good fit for examining classroom language learning. Furthermore, internally regulated motivation and self-efficacy were important correlates of achievement, pointing to their pivotal role in language learning experiences.

## Theoretical Implications

The present study reviewed and tested the validity and reliability of an integrated model for examining the interplay between key motivations and beliefs, perceptions of instruction and school achievement. The results demonstrate that the integrated model and its constructs fit junior high school learning generally (Japanese and mathematics) and specifically English language classroom learning. The integrative model results place English language classroom learning clearly with other subjects, rather than as a special type of learning necessitating the use of language learning specific theories for motivation, beliefs, and perceptions of instruction.

## Practical Implications

The current study presents evidence supporting the construct validity and reliability of the integrated model presented. These robust measurement qualities are the foundation for the kinds of longitudinal and intervention studies necessary to substantively improve classroom learning and instruction in Japanese junior high schools. The reviewed and tested model presented in this study is well situated to support such research.

Too often both teachers and students see instruction primarily as a means of shaping and conveying content—teacher to student. However, recent meta-analytic findings have established the crucial role of motivation for achievement (Hattie, 2009). Hence, it is essential that teachers have a bifocal approach to curricula and instruction. As the current study suggests, teachers need to ensure they are supporting internally regulated motivation and students' perceived self-efficacy. Furthermore, the study's results point clearly to structure and autonomy-support as the instructional tools whereby this might be achieved.

This study established that English language instruction can be researched alongside other subjects, employing the same model for understanding motivation, beliefs, and instruction. Moving one step further, recent findings in the area of self-efficacy transfer actually point to the importance of researching English language instruction together with other subjects rather than as a "special" subject. Fryer & Oga-Baldwin (2017) tested and replicated a longitudinal model demonstrating that self-efficacy for English language studies actually supported self-efficacy for native language studies as well as itself in the future. This finding buttressed the importance of students arriving at junior high school with strong foreign language skills, a finding not possible if English language learning research was not undertaken alongside other school subjects.

## Future Directions and Limitations

Despite having been undertaken with students from six different junior high schools, the current study is still limited by its cross-sectional, single cohort sample. Replication of these findings across Japan and in other countries would support greater external validity for the findings.

There is still much to be done in this area of research, both broadly in junior high school and specifically on the topic of language learning in these formal classroom settings. The majority of junior high school research has been undertaken in the U.S. and knowledge about Japanese and broader Pacific-Asian junior high school experiences is limited. In the area of language learning, the majority of the research has employed theories developed by applied linguists, rather than educational researchers. This has left a significant gap in our understanding, as theories designed to explain language development, often across the life span, have dominated our questions about how students learn languages in highly structured learning environments like school classrooms. We encourage language researchers and instructors to draw on the considerable resources available within education and educational psychology for future work in these areas. The model presented in the current study is just one tool for such future research.

## Conclusion

An integrative model combining well-established components of self-determination theory and perceived control theory was reviewed and its measurement properties tested. The motivation–belief–instruction model presented strong measurement properties across three subjects of study. Reliability and intercorrelation results for students' language-learning experiences were consistent with past research in other countries, learning contexts, and domains of study. These findings, along with robust relationships between internally regulated motivation, self-efficacy beliefs, instruction (structure and autonomy support), and course achievement point toward the integrated model as a useful tool for researching classroom language learning. This integrated model also has the potential to be a substantive source of direction for enhancing teaching and learning in junior high school in a comprehensive manner. Utilising the model presented in this study, researchers and educators can begin to fit foreign language teaching and learning into the school experience, rather than treating it like something that needs a whole new set of theories and resulting practices.

## Bio Data

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## Appendix
### *Factor Loading Coefficients and Item Wordings for Each Indicator*

| Factor | Item wording | Item wording (Japanese translation) | Beta |
|---|---|---|---|
| Intrinsic 1 | English is fun | やりたいと思うから | .87 |
| Intrinsic 2 | I'm interested in English | 英語について興味があるから | .88 |
| Intrinsic 3 | I like learning English | 英語を学ぶことは好きだから | .87 |
| Identified 1 | English will help me in the future | 将来のための準備になると思うから | .81 |
| Identified 2 | I want to be able to use English in the future | 将来、英語が使えるようになりたいから | .87 |
| Identified 3 | English will help me grow | 自分の成長にとってやくだつから | .87 |
| Introjected 1 | I want my teacher to like me | 先生に気に入られたいから | .77 |
| Introjected 2 | I want my parents and teachers to praise me | 親や先生にほめてもらえたいから | .62 |
| Introjected 3 | I want my friends to think I'm good at English | 友達に英語が良くできると思われたいから | .76 |
| Extrinsic 1 | If I don't participate my teacher will get angry | しないと先生に怒られるから | .64 |
| Extrinsic 2 | Participating is one of the rules | 参加することは決まりごとだから | .47 |
| Extrinsic 3 | I have no other choice | やるしかしかたないから | .66 |
| Autonomy Support 1 | My teacher understands me | 私の先生は、私のことを理解している | .65 |
| Autonomy Support 2 | My teacher listens to how I would do things | 私の先生は、私がやりたい方法を聞いてくれる | .76 |
| Autonomy Support 3 | My teacher tries to understand how I see things before suggesting a new idea | 私の先生は、新しい方法を提案する前に、私の考えを聞いてくれる | .84 |

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| Factor | Item wording | Item wording (Japanese translation) | Beta |
|---|---|---|---|
| Structure 1 | If I can't solve a problem, my teacher shows me different ways to try to. | もし、私が問題解決できないなら、先生が別の方法を示してくれる | .71 |
| Structure 2 | My teacher shows me how to solve problems for myself. | 私の先生は、私自身が問題解決できる方法を示してくれる | .69 |
| Structure 3 | My teacher reviews previous material at the start of class. | 私の先生は、授業の始めに復習をする | .78 |
| Control 1 | My teacher uses forceful language | 私の先生は、命令的な言葉を用いる | .71 |
| Control 2 | My teacher tries to control everything I do | 私の先生は、私のことすべてについて指示する | .69 |
| Control 3 | My teacher puts a lot of pressure on me | 私の先生は、私に多大なプレッシャーをかける | .78 |
| Self-efficacy 1 | I'm certain I can master the skills taught in class this year. | 今年、授業で教わる技能を習得することができると確信している。 | .78 |
| Self-efficacy 2 | I'm certain I can figure out how to do the most difficult class work. | 最も難しい授業の学習方法が分かると確信している。 | .87 |
| Self-efficacy 3 | Even if the work is hard, I can learn it. | たとえ勉強が大変でも習得できる。 | .86 |
| Self-efficacy 4 | I can do even the hardest work in this class if I try. | やりさえすれば、この授業の最も難しい勉強でもついていくことができる。 | .76 |
| Self-efficacy 5 | I can do almost all the work in class if I don't give up. | もし、あきらめなければ、授業でほとんどすべての勉強についていくことができる。 | .76 |