Student Engagement in Japan: Investigating student engagement from high school to university

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Student engagement is a multidimensional construct (Fredricks, Blumenfeld, & Paris, 2004), defined in terms of cognitive, behavioral, emotional, and sometimes agentic engagement (Parsons, Nulland, & Parsons, 2014; Reeve, 2012). Student engagement has been extensively studied in the US and is an essential tool for policy makers. Used in conjunction with scholastic performance tests, student engagement can be used to show which students are likely to succeed in school. While the student engagement construct has been widely applied in American school contexts, it has not been used in Japan.

Student engagement research has its foundations in investigating the causes of student drop-out (Finn & Voelkl, 1993). Although originally designed as a construct for use measuring overall engagement in school, it has been adapted to subject specific research (Sinatra, Heddy, & Lombardi, 2015; Wang, Fredricks, Ye, Hofkens, & Linn, 2016), as well as to second language acquisition (SLA) settings (Jang, Kim, & Reeve, 2012, 2016; Reeve & Tseng, 2011). The use of the student engagement construct in SLA settings hints at its power to address issues of engagement in contexts other than the US.

In Japan, there has been little research on the topic of student engagement, with extant research looking at engagement in schools without attention to specific domains (Oga-baldwin & Nakata, 2017). In other Asian contexts, most notably Korea, student engagement measures have been shown to be strong predictors of student success (Reeve & Lee, 2014). This study addresses this gap in the literature by first validating the student engagement construct for use in Japan, and then investigating student engagement levels at the high school and university level.

To address this gap, this study was designed with two goals: first to translate and assess the usability of existing student engagement scales in a Japanese context, and second, to investigate the changes that occur to students' engagement with school as students transition from high school to university. This exploratory research investigated what form student engagement takes in both Japanese high school and university. Student engagement was assessed using established instruments which were translated into Japanese for the purpose of this study. The paper will explain the validation process and discuss the results of the student engagement measure as it relates to engagement in high school and university.

Literature review

Student Engagement

The development and then implementation of student engagement measurements has a long history in the United States. Pioneering work done by Finn and Voelkl (1993) studied the connection between student engagement and drop-out rates. Their work was specifically designed to assess engagement in high-risk students. It is from their work that the engagement construct began to be used to assess all areas of education, from general school engagement (Archambault, Janosz, Fallu, & Pagani, 2009), to subject specific engagement (Fredricks et al., 2016; Greene,

Debacker, Ravindran, & Krows, 1999; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996; Ryan, Patrick, Anderman, Edelin, & Midgley, 2001), to STEM subjects (Wang et al., 2016).

Fredricks, Blumenfeld, and Paris (2004) in a summary of the engagement construct in American schools, considers engagement a multidimensional construct composed of behavioral, emotional, and cognitive engagement. It is this multidimensional construct that I have applied to a Japanese context. It is first important to understand the different aspects of the student engagement construct as it is a powerful tool for understanding student behaviors.

Multidimensional Student Engagement Construct

Behavioral engagement is defined by Skinner, Kindermann, and Furrer (2009) as being marked by "effort, exertion and persistence" (p. 495). Fredricks et al. (2004) state that behavior engagement includes such things as "following the rules and adhering to classroom norms" (p. 62). This type of engagement is exemplified by students who are diligent in their studies.

Fredricks et al. (2004) also note that different operationalizations of behavioral engagement are often not clearly defined, nevertheless, definitions in different studies overlap. There are generally agreed upon aspects of behavioral engagement: following rules (Finn & Rock, 1997), being involved in school academically (Fredricks et al., 2004; Skinner, Kindermann, & Furrer, 2009), and participation in athletics or extracurricular activities (Finn & Voelkl, 1993). Other more specific behaviors may be included which are often more specific to the context under study.

Emotional engagement is defined as students' emotional reactions to school, or more specifically to academic subjects. Skinner et al. (2009) investigated the degree that students felt "energized emotional states" focusing on "enthusiasm, interest, and enjoyment" (p. 495). Emotional engagement is students' positive and negative emotions toward learning and the classroom.

There are limitations to emotional engagement as it is strictly defined in terms of how students react in the classroom environment. Often items which assess emotional engagement ask students about their enjoyment level in class. One weakness in these scales is that most measures of emotional engagement rely on asking students how they feel during or after school, through survey or interview. It is possible that students may not accurately remember their emotional state, or perhaps may answer based on what they believe the researcher would like to hear.

A caveat to emotional engagement is the possible effect that relationships between students and their peers may have (Philp & Duchesne, 2016). Personal relationships between students in a classroom may play a major role in the degree to which students emotionally engage. Reeve (2013) states that some students may have a stronger sense of agency, arguing that they can "enhance their curiosity and minimize their anxiety and frustration" (p. 581). This would suggest that students are able to, a certain extent, control their emotional engagement in the classroom.

Emotional engagement as a construct is characterized by more than students having fun in class, but by them being emotionally invested in their own learning outcomes. The connection between the conceptualization of emotional engagement and its measurement is one issue that persists in engagement research. Another frequent issue is that emotional engagement is similar to motivational behavior. The difference between the two is that emotional engagement only assesses the emotions that are on the surface; it not does address what students are feeling deeply, nor their intentions or goals.

Cognitive engagement is characterized by investment in learning. It is comprised of actions

such as self-reflection, referring to prior knowledge, and focused attention. Greene (1996) made use of surveys to assess cognitive engagement. She points out that this was primary a set of tools for understanding learner achievement. Greene succeeded in showing that cognitive engagement mediates the relationship between motivation and achievement. However, cognitive engagement was shown to only partially account for both motivation and achievement, and did not account for all variations in the data (Greene, Miller, Crowson, Duke, & Akey, 2004).

Agentic engagement is defined by Reeve (2013) as how students contribute to the "flow of instruction their receive" (p. 579). This is the actions that students take to influence the course of learning. It may be characterized by students who make comments or suggestions to the teacher. An important point is that these comments or suggestions may not advance or improve the quality of learning (Reeve, 2013).

Disengagement

Just as students become engaged, so too can they become disengaged. Students who lack attention or have poor self-control could be considered to be cognitively disengaged (Christenson, Reschly, & Wylie, 2012). Fredricks, Wang, Schall, Hofkens, Sung, Parr, and Allerton (2016) note that signs of cognitive disengagement are more difficult to notice as they may be more subtle signs such as only memorizing information. These signs may be more obvious as things such as students who have stopped trying or appear to have given up.

Behavioral disengagement, or disaffected behavior, has been studied in some depth. Skinner et al. (2009) state that this is an absence of engagement. It is important to note that there is disagreement in the field of what exactly disengagement is in all domains. Some argue that disengagement is a lack of engagement, while others would argue it is a distinct state. Skinner et al. (2009) state that it might be obvious to consider engagement as a bi-polar construct (p. 498), but argue that when taking students' complex interactions into consideration a multidimensional construct is more likely. Skinner et al. (2009) further argue that true disengagement is impossible as it would result in an exit from school, which is generally not possible for students.

The survey tools used in this study make the distinction between engagement and disengagement, viewing them as distinct concepts. This follows in the footsteps of other researchers (Jang et al., 2016; Tanaka, 2017) who have looked more specifically at lack of interaction in the classroom, going further to specifically target behavioral disengagement, as being separate from a lack of engagement. Engagement and disengagement are separate and distinct dimensions and are measured as such.

This study takes the position that engagement and disengagement are distinct constructs. While there is much debate over whether a distinction is necessary, the argument for that distinction is strong. While both engagement and disengagement are likely strongly related, there is much to be learned about student engagement by assessing them as distinct constructs.

Measurements of student engagement

There are many scales that have been designed to measure school engagement (for review see Fredricks et al., 2004). Most scales focus on three aspects of engagement: behavioral, cognitive, and emotional (Skinner, Kindermann, & Furrer, 2009). A recent study in Korea (Jang et al., 2016) made use of the afore mentioned scales in addition to agentic scales to assess both student engagement

and disengagement. That work included in-depth discussions of the validity and choice of those scales. As this study makes use of the same set of scales, in translation, a discussion of scale selection will not be made.

Methods

As this study is concerned with changes in student engagement from high school to university, this study measured the level of cognitive, behavioral, emotional, and agentic student engagement/disengagement of freshman university students using scales that have been extensively used in other contexts. Statistical analysis was applied to assess the changes in engagement that occurred between high school and the first semester of university.

Research Question

This exploratory research addressed the following question:

- Does student engagement/disengagement change in the transition from high school to university?

This question was combined with the validation of the Japanese version of the student engagement instrument to form the basis of this study.

Participants

Participants (N= 34) were freshman students in the English department at a small university in Japan. Participants of this study had graduated from Japanese high schools. Although the majority of the students came directly from high school to university, a small number (n=2, 5%) had worked for some years before entering university. Their ages ranged from 18 to 22 with a median age of 18. There were 24 female (70.5%) and 10 male students (29.5%). This ratio reflects the male-female ratio of the school. The participants were also 95% Japanese with only two participants of a different nationality.

Instruments

This study made use of Likert scales to measure student engagement. Behavioral engagement and disengagement, and emotional engagement and disengagement scales were draw from the work of Skinner, Kindermann, and Furrer (2009), with cognitive engagement scales from Senko and Miles (2008), cognitive disengagement scales from Elliot, McGregor, and Gable (1999), agentic engagement scales from Reeve (2013), and finally agentic disengagement scales from Jang, Kim, and Reeve (2016).

These scales have been used in different contexts, and they have been used together as part of a large study in Korea (Jang et al., 2016). After an extensive literature review it was decided that these would be the most effective measures of the student engagement construct. They were adopted with slight changes for use in Japan. This included slight adjustments in wording to account for translation difficulties. The items were translated by the researcher and then checked by a native Japanese speaker. As Japanese students tend to prefer selecting a neutral answer (Taguchi, Magid, & Papi, 2009), a 6-point Likert scale was adapted anchored with 1- strongly disagree, and 6- strongly agree.

Procedures

To assess levels of student engagement in high school, new university students were surveyed during their first month at university. They were asked to consider their time in high school when answering the questions. Most of the subjects of the study had graduated from high school only a month prior, therefore it was decided that their memory of their engagement in high school would be sufficiently fresh to answer accurately. To assess levels of university student engagement, the same students were asked to answer a similar questionnaire at the end of the first semester. The students were asked to consider their experiences over the semester and answer the questions based of those experiences.

The questionnaires were distributed during class time and informed consent was obtained. It was explained that participation was voluntary. Although no risks were identified, it was made clear that even if students choose to participant, they were free to skip any questions that made them feel uncomfortable, and indeed they had a right to withdraw from participation at any time prior to submission of the survey.

To allow students more choice in participation, the questionnaire was given at the end of class. Students were instructed to put the completed surveys into a box and leave when finished. As Japanese students tend to be susceptible to peer-pressure, it was explained that students who did not wish to participate, but felt that their peers/teacher would watch/judge them, could simply answer all of the questions with the number 1, further they were instructed to either not answer the biographical questions, or just write scribbles. This would allow the students to abstain from participation without feeling singled out. Indeed, one individual took advantage of this method to indicate they did not wish to participate.

Analysis

The internal consistency of these scales was verified by calculating Cronbach's alpha for each domain. Although similar versions of the same scales were used for both assessing high school and university student engagement, the validity of the scales when applied to high school and university was different. Table 1 shows the Cronbach's alphas for each question set for both high school and university student engagement. A Cronbach's alpha of .9 or better is considered an excellent fit, between .7 and .9 is considered a good fit, and between .6 and .7 is considered an acceptable fit (Kline, 1998). As can be seen in table 1, all scales meet the internal consistency requirement.

Table 1.

Cronbach's alpha for questionnaires

Dimension	High school Engagement scale Cronbach' s alpha	University Engagement scale Cronbach' s alpha
Behavioral engagement	0.83	0.83
Behavioral disengagement	0.65	0.68*
Emotional engagement	0.82	0.77
Emotional disengagement	0.88	0.87
Agentic engagement	0.86	0.88
Agentic disengagement	0.84	0.66
Cognitive engagement	0.83	0.85
Cognitive disengagement	0.88	0.93

*With item 3 = 0.41

When assessing behavioral disengagement, it was found that the third item, *in class I do just enough to get by,* was not a good fit to the model and was removed from further analysis. Further analysis of the items in behavioral disengagement at the university level found that item 3 was negatively correlated to the other items, suggesting perhaps that the question wording was not appropriate when applied to a university context (further discussion below).

Descriptive statistics

To understand the changes that take place in student engagement between high school and university, it is useful first to understand the general level of engagement at the high school level and university level.

All of the scales used had a range of answers from 1- strongly disagree, to 6- strongly agree. A summary of the means of the student engagement instrument for both high school and university is presented in table 2. The results for high school students are discussed first, followed by a summary of the university level scores.

As can be seen in table 2, behavioral engagement had a mean score of 4.42. This would indicate that the students were behaviorally engaged. This is complimented by behavioral disengagement which had a mean of 3.29, which indicates that students were generally not disengaged. This pattern is mirrored with emotional engagement and disengagement with means of 4.14 and 2.91 respectively.

Agentic engagement had a mean score of 3.65 and agentic disengagement, 3.32. A score of 3.5 would indicate that the students neither agreed nor disagreed with the statements. As these results are not far from a neutral answer, these results indicate that the students were not agentically engaged, nor disengaged. Cognitive engagement and disengagement showed a similar pattern, cognitive engagement had a mean score of 3.57, and a score of 3.26 for cognitive disengagement. This also indicates that students were generally neutral in their levels of cognitive engagement.

University student engagement and disengagement also showed similar patterns. Behavioral engagement had a mean score of 4.5, indicating slightly engaged students. Behavioral disengagement had a mean score of 3.21. Emotional engagement showed a mean score of 4.26 and emotional disengagement a score of 2.82. This suggests that at the university level students are engaging both behaviorally and emotional with their classwork. Agentic engagement had a mean score of 3.90 and disengagement a score of 3.24. Cognitive engagement had a mean score of 3.50 and disengagement a score of 2.88.

Table 2.

Mean scores for student engagement

dimension	high school engagement	university engagement
Behavioral engagement	4.42	4.5
Behavioral disengagement	3.29	3.21
Emotional engagement	4.14	4.26
Emotional disengagement	2.91	2.82
Agentic engagement	3.65	3.90
Agentic disengagement	3.32	3.50
Cognitive engagement	3.57	3.50
Cognitive disengagement	3.26	2.88

Table 3.

Correlation table for high school student engagement

	Behav	BehavDis	Emo	EmoDis	Age	AgeDis	Cog	CogDis
Behav	—							
BehavDis	-.65**	—						
Emo	.52**	-.38*	—					
EmoDis	-.53**	.39*	-.78**	—				
Age	.42*	-.24	.77**	-.57**	—			
AgeDis	-.46**	.62**	-.62**	.61**	-.54**	—		
Cog	.58**	-.27	.61**	-.51**	.52**	-.35*	—	
CogDis	-.44**	.49**	-.51**	.58**	-.35*	.64**	-.30	—

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlation tables were created for all of the scales at both the high school and university level. This allowed for a better understanding of the interactions between the different aspects of engagement. The results of the correlation analysis can be found in table 3. As can be seen there was a statistically significant correlation between most of the individual scales used. This was to be expected as similar results were found by Jang et al. (2016).

This demonstrates that this student engagement questionnaire as a whole is interconnected and measuring the different dimensions of the multidimensional student engagement construct. Table 4 contains the correlation statistics for the student engagement construct at the university student level. As can be seen in the table there was a statistically significant correlation between most factors of the construct. One data point of note is the lack of statistically significant correlation between agentic engagement and behavioral disengagement in the university level. As a negative correlation was found at the high school level, a negative correlation was also expected at the university level.

Table 4.

Correlation table for university student engagement

	Behav	BehavDis	Emo	EmoDis	Age	AgeDis	Cog	CogDis
Behav	—							
BehavDis	-.52**	—						
Emo	.48**	-.46*	—					
EmoDis	-.34	.48**	-.66**	—				
Age	.32	.02	.45*	-.41*	—			
AgeDis	-.27	.32	-.30	.42*	-.35	—		
Cog	.61**	-.42*	.34	-.29	.34	-.40*	—	
CogDis	-.28	.41*	-.19	.35	-.12	.28	-.65**	—

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

T-Tests/Mann-Whitney U

Further statistical analysis was carried out, but no significant changes between high school and university engagement were found. Both independent T-tests and Mann-Whitney U tests were performed on all data sets. Due to the limited sample size (N=34) the data lacked normalcy. First T-tests, which are robust to non-normalcy, were performed. No statistically significant differences were found. While t-tests are robust to non-normalcy, this is mostly true with larger sample sizes. As this study had a relatively small sample size there was worry that non-normalcy might

influence the results of the independent T-tests. Thus, the Mann-Whitney U test was performed, this also yielded no statistically significant results.

Discussion

This study had two main purposes; to assess the student engagement questionnaire and determine the changes in student engagement from high school to university. When making use of any research instrument in a new context it is essential to ensure that the tools are appropriate for the subjects and context of the study.

The first purpose of this study was accomplished, the translation of the student engagement questionnaire into Japanese was successful. With minor modifications and elimination of one item from the university test, a robust test of student engagement for Japanese university student was created. This instrument may be used in the future for the assessment of student engagement at both high school and university levels.

One point to emerge from the validation of this scale was the problem with behavioral disengagement item 3: *In class I do just enough to get by.* The researcher theorized that as students had made the conscious choice to attend university (while participation in high school, although not mandated by law, is essentially required), in the first semester of the first year it is unlikely students would do only enough to pass their classes. This indicates that it is important to understand students' motivation for studying when assessing their engagement.

The correlations between the different scales were also significant. While Jang et al. (2016) use a model of student engagement with engagement and disengagement as distinct constructs, the statistically significant, and negative, high correlations between engagement and disengagement suggest a strong connection. However, this does little to answer the question of whether engagement and disengagement should be viewed as a single construct or not. The high correlation between the factors of the student engagement construct does indicate that they are measuring similar things. A larger sample sizes might allow for further speculation about the connection between student engagement and disengagement.

It is the statistically insignificant correlations between factors that are most telling. There was a statistically insignificant correlation between cognitive engagement and disengagement. Students were not cognitively engaging with the material, but at the same time they were also not ignoring the content and actively disengaging. This might be a result of a lack of skills. Students in Japan are generally not taught critical thinking skills, and this may lead to the situation found in this study, where students do not engage cognitively, but also do not disengage; they may have intentions to engage but lack the skills to do so.

It was also of note that at the university level agentic engagement and behavioral disengagement did not show correlation. It was expected that students who were agents of their own learning would be behaviorally engaged, which would result in a negative correlation between agentic engagement and behavioral disengagement. Agentic engagement and behavioral engagement show a statically significant correlation ($r = 0.32$). It was expected, that similar to the high school scale, a similar negative correlation would exist. This unexpected result warrants further research.

The second purpose of this study was to assess the changes in student engagement after

matriculation to university. As the results indicate, there was no statistically significant change from high school to university. This may be the result of a small sample size (N=34), or possibly the limited amount of time that had passed between matriculation and assessment of university engagement.

The researcher theorized that for many students, they may view university as a continuation of high school. After high school graduation in March, student only have a few weeks break before university begins in April. As freshmen, the students in the study also had a full schedule. In their first year at university, they spend nearly the entire day in class. This may have created a feeling similar to high school. It is theorized that as a result of this, their attitudes and behaviors toward learning did not significantly change. Future research might continue to assess student engagement as students progress through university.

Limitations of the study

As with any quantitative research, the limit in the number of participants limits the strength of the statistical analyses applied. A larger student sample would allow for a fuller picture of the student engagement construct. Additionally, the limited time frame, one semester, may only provide a small window into the changes that occur in student engagement of Japanese students. Future studies might investigate changes in student engagement over longer periods of time, perhaps following the development of student engagement as students progress through their full four years at university.

The issue of context may also play an important role in study design. While the scales used were translated with only minor modifications, it might be worthwhile tailoring the questions to better reflect the curriculum and teaching styles students encounter.

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