Measurement and Analysis of Student (Dis)engagement in Higher Education: A Preliminary Study

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Abstract

Higher education is attracting more participation from an increasingly diverse student body. This diversity invites concerns on effective instructional delivery as the extent of students' engagement in learning now varies widely. Anecdotes on students' "undesirable" dispositions in course participation are not uncommon in higher education settings. This project set out to develop a questionnaire, developed for higher education in the Japanese context, on a range of student dispositions. The scale was a five-point Likert instrument designed to interpret learners' disengagement as an attitudinal disposition. The paper discusses the conceptual contours of disengagement as a student disposition that provided the basis for the context-specific scale items. It reports the procedures taken to obtain the factor structures of the dataset. The questionnaire was administered to 145 engineering students in Japan. An exploratory factor analysis revealed a five-factor solution – lack of commitment, distractedness, lack of preparedness, anti-social orientation, and lack of focus. Avenues for further research are suggested, and implications for practice are discussed.

Keywords: higher education; learner engagement; student attitudes; rating scales.

Introduction

Participation in higher education is increasing worldwide, and the demands placed on post-secondary education are changing (Laurillard, 2012). A much larger proportion of the population take on a degree program at universities, and higher education has become much less elitist. In Japan, this trend was observed earlier than in other parts of the world. The relaxation of regulations governing the organization of universities and their education provision took place in the 1990s (Amano, 2014). This liberalization of higher education led to a rapid increase of tertiary institutions. This phenomenon was accompanied by a steady rise in the numbers of university goers. Higher education enrolment in Japan is now as high as nearly 75% (Kariya, 2011) with 56.7 % for enrollment in 4-year institutions in 2014 (see Harada, 2015). However, enrollments are decreasing quickly as the number of 18-year-olds continues to drop in an increasingly aging population.

In the mid-2000s, following an extended period of economic stagnation, Japan seemed to enter a new phase of economic recovery. The role that public reforms played was important in laying the foundation for growth during this period. From the late 1990s onward, at the center of the government's reform measures for an economic turn-around was the tertiary education system. Particularly notable was the Koizumi administration's partial privatization of national universities (Yamamoto, 2004). These higher education institutions now operate as corporations with considerable autonomy from centralized control. Education is a political issue as it is framed and funded by the state to a great measure, and this invites competing pressures from market and business industry as well as from academia and education lobbyists. There is now a general and widespread recognition that tertiary education is a driving force in boosting economic competitiveness in a knowledge-driven globalized economy (Newby, Weko, Breneman, Johanneson, & Maassen, 2009). This entails that higher education provides conditions for learners to develop a reasonable level of academic achievement and practical skills across disciplines, while simultaneously, balancing these skills with professional knowledge. This trend has been gaining traction in higher education both abroad and in Japan. It is now the role of tertiary education institutions to provide the conditions and opportunities for shaping the student mindset toward lifelong learning and personal development.

Increasing participation in higher education worldwide has brought greater diversity to the student body in terms of academic bent (Altbach, Reisberg, & Rumbley, 2009). Increasing enrollments suggest that the degree of academic orientation and commitment of students is accordingly varied. Within a university, the range of dispositions and ability within courses is diverse. In the sociological literature, it is axiomatic that a household's standard of living is implicated in access to higher education, and books in the home are a proxy for cultural capital in the family (Kariya, 2011). The economic and cultural capital and students' dispositions nurtured by these resources increase both the chance of enrolling in higher education and students' academic success at university (e.g., Kariya, 2012). These socio-economic indicators and cultural background variables translate into observable differences, such as whether students have relevant background knowledge and a curiosity about a particular subject. Namely, there are now a considerable number of students who would not have considered or been able to go to university a mere generation or two ago.

Thus, it is not just that enrolment rates are higher than at any other time in history, the emphasis is now on concerns about effective teaching and outcome. Conceiving ways to actively engage students in their learning now poses a real challenge. In the Japanese higher education context as well as in other parts of the world, the challenge that educators face is how to empower

students so that they take greater autonomy for their learning. Addressing this concern requires learner-centered teaching methods such as an active learning approach, which more effectively stimulates students' use of higher cognitive activities that a successful student would use spontaneously (American Psychological Association [APA] Work Group of the Board of Educational Affairs, 1997; Cavanagh, 2011; Prince, 2004). Concord between the current instructional models, new pedagogical trends, and students' needs are necessary as Japanese society continues to evolve as a post-industrial knowledge-based economy. This paper addresses one roadblock to this endeavor common in Japan: teachers sometimes find that students do not engage in a way that is expected or desired for learning and success in higher education settings. For instance, Escandon (2004) refers to lesson disruption in a Japanese tertiary setting, "The class objectives cannot be achieved because most of the students avoid learning … or keep other fellow students from engaging [in] learning practices, [and] teachers have to commit themselves to disciplining students instead" (p. 3). While acknowledging that these unnervingly "undesirable" dispositions ought not to be interpreted from the instructor's perspective alone, as we discuss subsequently, the paper reports on a project in which a scale was developed to measure students' disengagement as a disposition in higher education.

Engagement is a key construct linked with learning and academic success, such as higher grades, completion rates, and achievement test scores: Evidence suggests that engagement is responsive to changes in pedagogic practices and holds great potential as a key target of intervention and improvement efforts (Fredricks, Filsecker, & Lawson, 2016). The scale reported in this study was designed to measure the dispositions of students displayed in relation to current university learning, with the scale being the interpretative continuum of the dialectical attitude of compliance with and resistance to the institutional assumptions which shape "desirable" forms of engagement in tertiary education settings in Japan.

Literature Review

The literature on engagement abounds with a variety of theoretical inclinations and pedagogical focuses (see Christenson, Reschly, & Wylie, 2012). While there is much variation regarding how engagement has been defined and researched, there is some agreement that it is a multifaceted construct (Fredricks, Filsecker, & Lawson, 2016). In the sociological literature, some undesirable forms of engagement are conceived as resistance, which represents students' reactions to a school's attempts at defining them as a person of less worth than others in a way that often results in their exclusion from the path to academic achievement (Alpert, 1991). From this perspective, failure to learn emerges as a result of political resistance, not of an innate disability. The literature states that resistance could take shape in a subtler form. Students can minimize participation in school practices while displaying exterior conformity to the ideological assumptions of schooling as a mode of quiet subversion (Giroux, 1983). In more psychologically-oriented studies, undesirable forms of participation are understood as misbehavior which indicates a behavior that is perceived *by the instructor* to interfere with the primary vector of the learning activity. Other scholars have addressed the issue using school connection and life course theories to explain the role engagement plays in whether or not a student completes his or her schooling (Fredricks, 2014). Along with this line of inquiry, some studies report students' perspectives, which suggest that they view schooling as standing in the way of them socializing with their peers, leading them to invest minimal effort in their school work.

Some past studies operated within only the teacher and school's perspective and tended to misconstrue the meaning of students' oppositional dispositions (Alpert, 1991). Alpert argues

that both conceptions of students' dispositions as resistance and misbehavior are limiting as some oppositional dispositions could be construed as legitimate modes of participation in a democratic society of which the schools are a part. Students' limited engagement in classroom discussion and criticism of the instructor over instructional delivery, for example, can be commonly observed phenomena. Notably, these modes of rejection and challenge are revealed without resorting to violence or leading to class disruption. Hence, while investigating disengagement as an oppositional disposition is important, labeling these as mere misbehaviors can be inaccurate as they do not involve formal rule violation. In the Japanese higher education context, McVeigh (2002) and Escandon (2004) reported their observations of disengagement in the form of students' "disruptive practices" that are manifested as students' resistance – apparent apathy, neglect, and lack of interest, among others. The theoretical position adopted by McVeigh regarding resistance was unlike that which had been described in the sociological literature. Rather, he states that resistance "designates actions and attitudes that do not directly challenge but scorn the system. This form of subtle resistance ignores … and is a type of diversion … from … the dominant structures" (McVeigh, 2002, pp. 185–186). Drawing upon McVeigh's (2002) conceptions based on anecdotes and his personal observations in the Japanese context, Escandon (2004) enumerated possible forms of resistance in the following categories 1 to 7.

1. Bodily dispositions: These describe physical conditions in which students are positioned. These conditions are thought to exercise impact over whether desirable or undesirable learning comes to be shaped.
2. Absence: Expressed in students' attitude and behavior that denigrate the importance of attending and participating in class activities.
3. Unresponsiveness: Displayed in students not responding and pretending not to know.
4. Neglect and forgetfulness: These behaviors manifest as willful inattention and a learned neglect of in-class activities, translating into forgetfulness as regards learning materials and assignment due and exam dates.
5. Indifference: This form of resistant attitude manifests itself in a range of behaviors such as sleeping in class, daydreaming, and not taking notes.
6. Inaccuracy: This is observable in end-products, such as disregarding lecture points and task instructions, such as essays.
7. Rudeness: This is manifested in behaviors which are disrespectful to the teacher and peers, such as chattering with friends and ignoring requests to be quiet (pp. 6–8).

We stress that these are not empirically established categories and only informed the construction of the questionnaire items that we have modified and added to as reported subsequently (see Appendix). We therefore avoided making any presumption about whether the items in our questionnaire would cluster together in the same manner as the asserted categories as above may imply. We note that there is a difference between asserting these categories from the instructor's personal observation and demonstrating these as well as latent explanatory factors in an empirically based manner. McVeigh (2002) and Escandon (2004) are among the few scholars who have investigated disengagement in higher education in Japan. However, neither of them examined the extent of Japanese tertiary students' dispositions *per se*. Escandon attempted to ascertain whether students would assess a list of simulated student behaviors as being disruptive or not disruptive as well as their perception of the extent of these behaviors being observed within the research site (see Escandon, 2004). Therefore, in order to buttress our understanding of current students' dispositions in the Japanese context, we sought to measure their dispositions as reported by students themselves.

Methodology

Participants

A convenience sample of 145 engineering students at a regional university in the northern part of Japan participated voluntarily. The authors, Saito and Smith, teach English as a Foreign Language to first- and second-year students. In some of his classes at the university, Saito distributed information about the project which included details such as the purpose of the study, the research policy assuring participants' anonymity and privacy, and an estimate of the time required to complete the survey online. Participants' privacy and anonymity throughout the research process included explaining the use of quotations, and informed consent that they could withdraw from the project at any time without incurring any penalty. Written consent was obtained from those who agreed to take part in the survey. Initially, 146 responses were returned, but one incomplete survey was excluded from analysis. The sample was dominantly male (n = 123, 84.8%), and the proportion of females was 15.2 percent (n = 22). Their ages ranged from 18 to 21. The participants majored in six different areas of study including system and information engineering (n = 48), mechanical engineering (n = 26), electronic-electrical engineering (n = 25), civil engineering and architecture (n = 23), design engineering (n = 13), and bioenvironmental science/engineering (n = 10).

Apparatus

The current study sought to empirically explore the structure of students' dispositions through the questionnaire items (Appendix). The current study, like other studies of learner engagement, did not draw upon any single definition or conceptualization of the multifaceted construct of disengagement. We sought to examine a wide range of undesirable dispositions such as disengagement to determine whether context-sensitive learner dispositions could be measured, what perceptions and behaviors they displayed, and how their responses related to one another. The following priorities guided the development of the instrument: (a) the need for a context-specific questionnaire, which taps into dispositions relevant to a higher education setting in Japan; (b) the instrument to which respondents can respond in their first language, Japanese; and (c) the context-sensitivity informed by local professionals' observations and experience as well as the literature.

The item pool of the scale was drawn from the conceptions of student dispositions as observed in Japanese higher education contexts (Escandon, 2004; McVeigh, 2002). We added a group of items to this list of dispositions so that we would be able to see the degree to which students were adaptable to more dialogic, active learning approaches, as noted earlier, toward which current higher education pedagogical practices are increasingly inclined. This *ad hoc* construct reflects student attitudinal dispositions toward a classroom pedagogic style, which draws upon the more active learning mode of education (Cavanagh, 2011; Prince, 2004). A total of 34 items were selected from the item pool initially. These items constituted the self-report questionnaire consisting of two parts. In Part 1, 34 Likert-scale items elicited participants' self-reports of their attitudes including behavioral dispositions in relation to university learning. Part 2 asked participants' demographic information such as gender and major. The Likert-scale items were created and refined in accordance with guidelines for the development of a valid and reliable inventory (Dörnyei, 2003).

In Part 1, a five-point Likert scale where 1 represents "never" and 5 represents "frequently" was used for all the items (never = 1, rarely = 2, sometimes = 3, occasionally = 4, frequently =

5). These 34 five-point Likert scale items were randomized in order in an online format. The questionnaire items were drafted in Japanese and reviewed by two English-Japanese teachers with seven years of experience for translation accuracy and readability for Japanese students. The questionnaire was pilot-tested with three engineering students (aged 19, 20 and 21). Based on the feedback obtained from these informants, the wording in the questionnaire items was revised for accuracy and validity.

Procedure

A cover letter was distributed among potential participants, which included an explanation of the aim of the study and assured potential participants' anonymity and right to withdraw in the midst of participation. This was done through some regular classes at Saito's workplace. In this way, informed consent was obtained from all the potential participants. Participants were asked to respond to items on the final Japanese version of the online questionnaire. They entered their responses manually from chosen computers or mobile devices online outside of class time. The data entry period lasted for two months. The completed questionnaires were computer-coded. The data were screened and analyzed using Statistical Package for Social Sciences 22.0. We used exploratory factor analysis, which was designed as a means to explore a dataset as well as to develop an instrument which could be utilized and refined through other inferential options such as confirmatory factor analysis, among others, to test hypothetical constructs (see Costello & Osborne, 2005, p. 8).

The data were subjected to tests of normality and skewness. A graphical inspection of the data indicated that the distributions for a large majority of the items were bell-shaped, except items 6 (skewness = 2.26, kurtosis = 5.89) and 28 (skewness = 2.89, kurtosis = 9.68). The literature suggests that factor analytic procedures that employ maximum likelihood extraction methods are not adversely affected if skewness is smaller than 2.00 and kurtosis not larger than 7.00 (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Because they exceeded these thresholds, items 6 and 28 were excluded from further analysis (see Appendix). The values of skewness and kurtosis of the remaining 32 items came in the ranges between +.037 and +1.95, and between -.89 and +5.89, respectively. For these items, maximum likelihood exploratory analysis was used with a threshold of .45 for factor loadings as a result of the study's sample size of 145 (Hair, Black, Babin, & Anderson, 2009).

Results

Factor Structure

A factor analysis on the 32 items was performed using maximum-likelihood extraction with promax rotation. The Kaiser-Meyer-Olkin values exceeded the recommended value of 0.6 (Kaiser, 1974), and the Bartlett's Test of Sphericity reached statistical significance (p = .000), supporting the factorability of the correlation matrix. An initial analysis was run to see eigenvalues for each factor in the data. Based on the minimum eigenvalue of 1 and a threshold of .45 for factor loadings (Hair et al., 2009), nine cross-loaded items (1, 9, 12, 14, 17, 19, 24, 33, 34) were culled. The same procedure was iterated three more times, and further seven items (2, 3, 4, 10, 21, 25, 32) were dropped. The remaining 16 items yielded a five-factor solution accounting for 65.8% of the total variance, with KMO = .819, and the Bartlett's Test of Sphericity reached statistical significance (p = .000), indicating a reasonable factor analysis (Bartlett, 1954).

Table 1 shows the factor loadings after rotation. The four items that clustered on Factor 1 accounted for 34.0% of the common variance. These items reflected students' behavioral tendency such as absence (*I repeatedly cut class*) and failure (*I fail exams*). We named this factor *lack of commitment* because these items indicate students' inability to act while they are responsible for attendance and preparation as necessary requirements. Factor 2, which accounted for 12.3% of the common variance, included five items that related to non-participation and diverting elements, such as chatting and socializing with peers while attending class. Therefore, we labeled this factor *distractedness*. Factor 3, which explained 7.9% of the common variance, included three items. These items indicated the degree of students' engagement with course requirements, such as homework and assignment preparation, and thus, it was named *lack of preparedness*. Factor 4 included two items, accounting for 7.5% of the total variance, with the factor loadings of .70 and .90. This factor was labeled *anti-social orientation* because the items were related to students' willingness to collaborate with peers who they do not know. Factor 5, the proportion of variance explained by this factor was 6.6%, with factor loadings of .64 and .84. Factors 4 and 5 were measured by only two items each, but we decided to retain these as independent components in terms of interpretability; both pairs of items loaded on each component in a conceptually meaningful way. Furthermore, inspection of scree plots revealed a clear break after the Factor 5, and these five factors met the Kaiser greater than 1 criterion (Kaiser, 1960). Table 1 displays the estimate of reliability for each extracted factor. The extracted factors demonstrated good internal consistency, ranging from .74 to .80. In brief, five factors were extracted from the 16 items. These components represent lack of commitment, distractedness, lack of preparedness, anti-social orientation, and lack of focus factors, which together are hypothesized to constitute disengagement among this particular sample of students. The mean scores of the five factors were lower than the midpoint (3) of the 5-point Likert scale: lack of commitment (M = 1.88), distractedness (M = 2.12), lack of preparedness (M = 2.36), anti-social orientation (M = 1.85), and lack of focus (M = 2.43) (Figure 1). The mean values indicate that instances of resistance and misbehavior are not widespread but less than moderate as far as our results suggest.

Table 1: Factor-loadings for exploratory factor analysis with maximum likelihood rotation of disengagement items (N = 145).

Statement	Loading	*M*	*SD*
F1 Lack of commitment (α = .79)			
5 I repeatedly cut class.	1.02	1.99	1.014
7 I oversleep and cut class.	.618	1.97	1.076
8 I cut class and do something of priority outside school (e.g., socializing with friends, part-time job, family, etc.).	.563	1.56	.686
23 I fail exams.	.505	1.99	1.024
F2 Distractedness (α = .77)			
26 I chat about things unrelated to lecture contents.	.711	2.18	.887
13 I pretend as if I were paying attention, but I am actually doing something else such as texting on my phone and doing assignments for another course.	.681	2.15	.974
29 I disregard requests to be quiet and soon get back to chatting with friends.	.654	1.48	.718
11 When called on I discuss the question being asked of and/or the response with fellow students before giving an answer.	.596	2.37	.912
27 I use digital devices such as smartphones for non-class	.484	2.43	1.026

purposes during class.			
F3 Lack of preparedness (α = .80)			
15 I do not remember that I had assignments to do until I come to class.	.787	2.71	.971
20 I attend class without completing homework.	.718	2.28	.924
16 I forget assignment deadlines and exam dates.	.509	2.10	.963
F4 Antisocial orientation (α = .77)			
30 In group or pair work, I will not talk to the other student(s) if they are people I don't know.	.907	1.79	.843
31 I will not do pair work if the other student is a person I don't know.	.700	1.90	.915
F5 Lack of focus (α = .74)			
18 I daydream during class with my mind focused on nothing in particular.	.842	2.59	.902
22 I cannot concentrate in class.	.643	2.27	.966

Note. Percentage variance explained: total variance, 68.30; F1, 33.97; F2, 12.33; F3, 7.91; F4, 7.47; F5, 6.63.

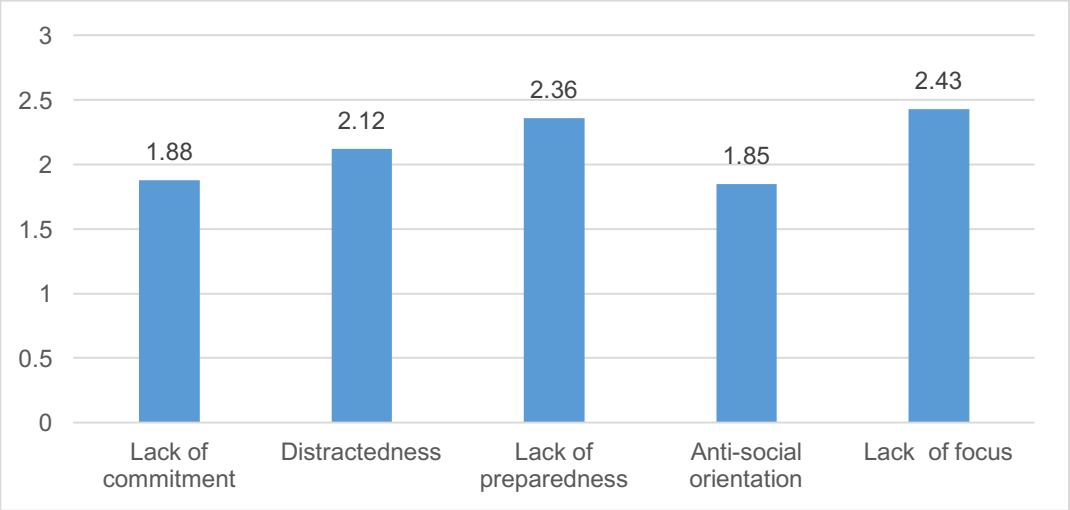

Figure 1: Factors influencing student disengagement with mean values.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: "never = 1", "rarely = 2", "sometimes = 3", "occasionally = 4" to "frequently = 5".

Means of Observed Variables

The mean scores of variables for lack of commitment come in the range between 1.56 and 1.99, with the mean for the four variables being 1.88 (Figure 2). This result indicates these behaviors as indicated in the item statements are only marginally observed among the study's participants. A slightly smaller mean for Item 8 might be construed that only a handful of the students cut

class for miscellaneous reasons outside school.

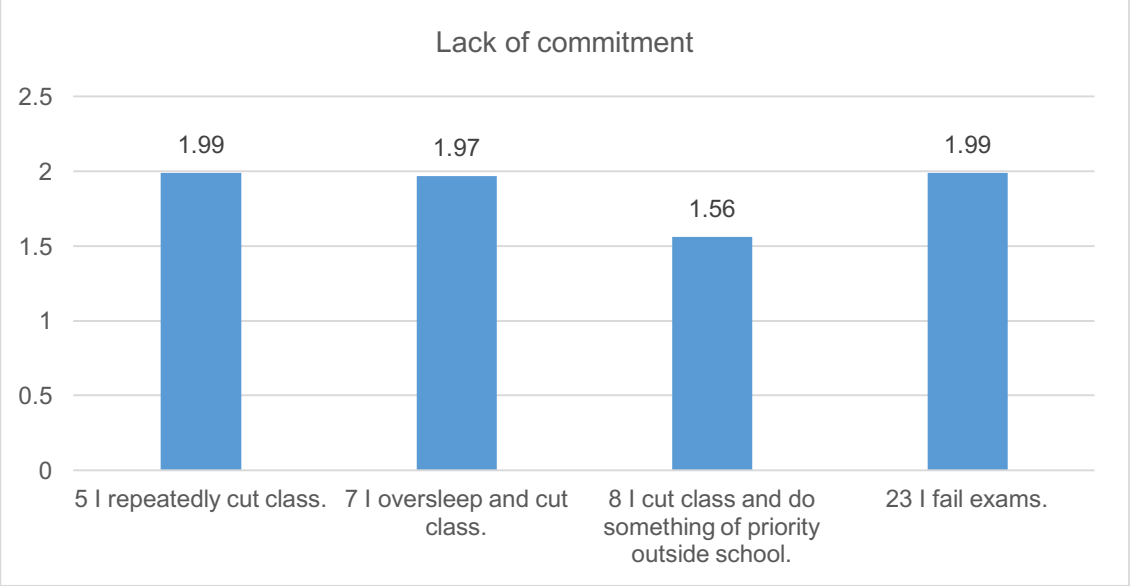

Figure 2: Mean values of measured variables influenced by lack of commitment.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: “never = 1”, “rarely = 2”, “sometimes = 3”, “occasionally = 4” to “frequently = 5”.

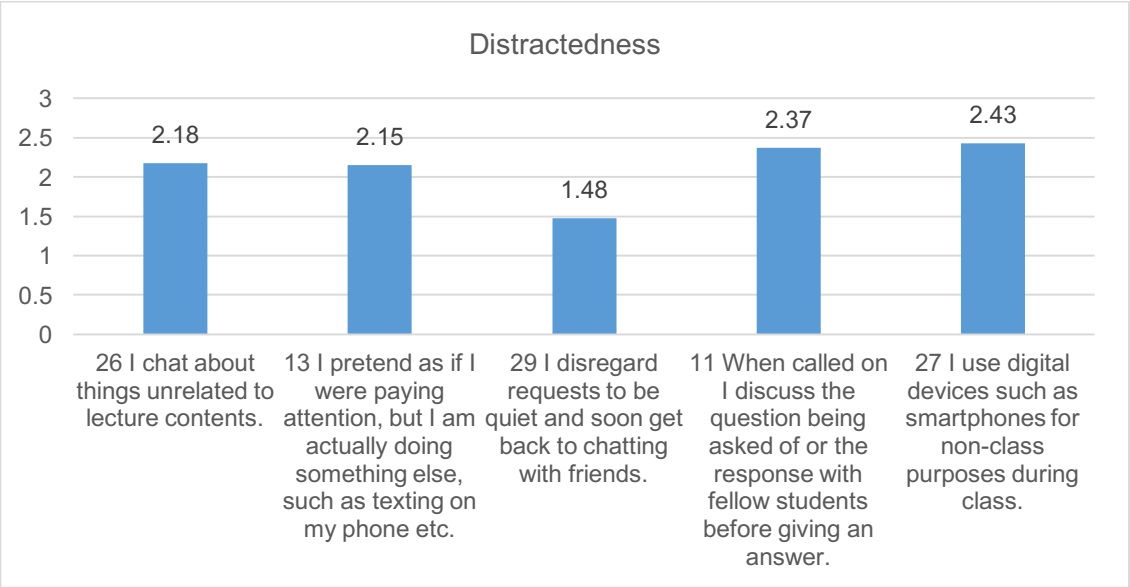

Figure 3: Mean values of measured variables influenced by distractedness.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: “never = 1”, “rarely = 2”, “sometimes = 3”, “occasionally = 4” to “frequently = 5”.

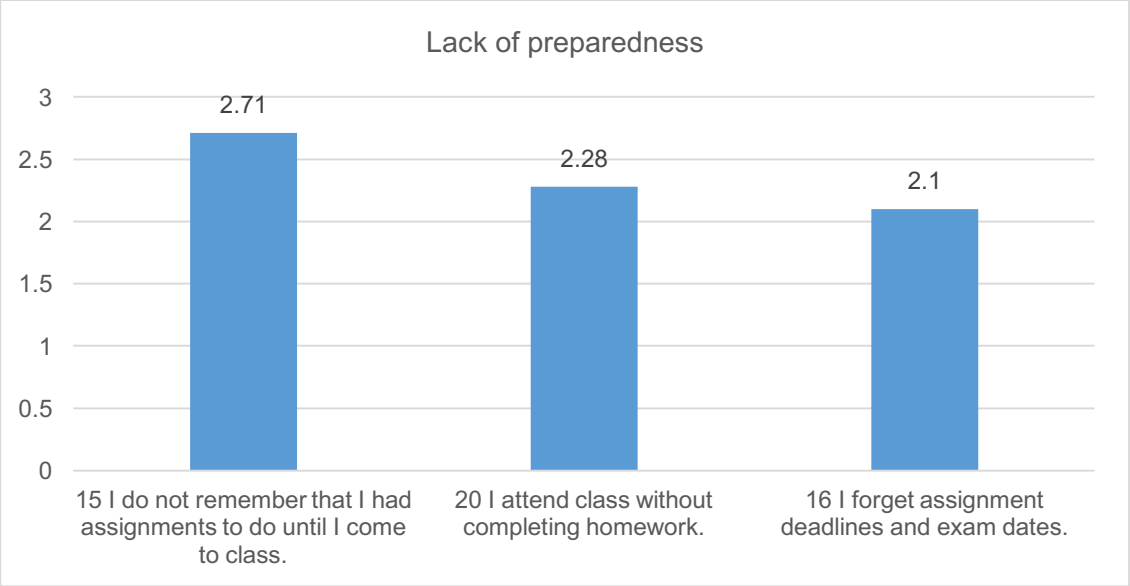

Figure 4: Mean values of measured variables influenced by lack of preparedness.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: "never = 1", "rarely = 2", "sometimes = 3", "occasionally = 4" to "frequently = 5".

Responses on items for distractedness indicate that several distractive behaviors, such as using digital devices and chatting, can be observed (Figure 3). The means for these items come in the range between 1.48 and 2.43, with the mean for the five items being 2.12. The mean for Item 29 was as small as 1.48, indicating most participants' responses came between "never = 1" and "rarely = 2". This result might mean many participants are inclined to respect instructors' request and comply with the behavioral expectations of the class. This characteristic resonates with the discourse of "the well-disciplined behavior of Japanese people", with "conduct in daily life, social solidarity, and education at home" being "the major components of the moral upbringing of Japanese people" (Iwasa, 2017, p. 1). Meanwhile, responses to the items of lack of preparedness (Figure 4) show a certain degree of carelessness in participants preparing for studies, such as routine homework assignments. However, the level of carelessness becomes moderate when their failure to act entails adverse consequences, such as exam and assignment due dates (Item 16).

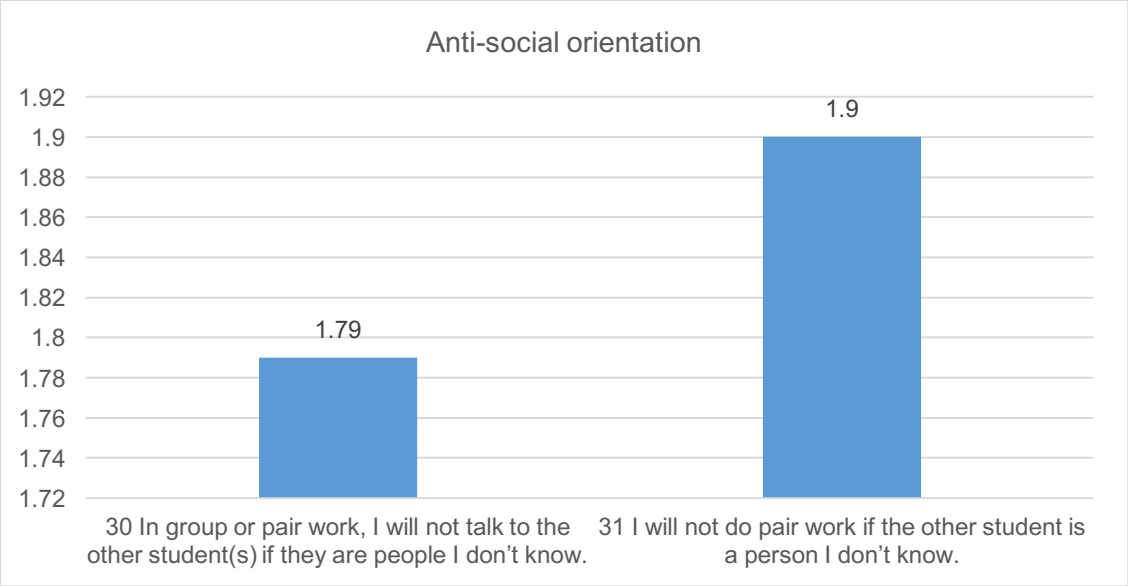

Figure 5: Mean values of measured variables influenced by anti-social orientation.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: "never = 1", "rarely = 2", "sometimes = 3", "occasionally = 4" to "frequently = 5".

The graphs in Figure 5 show that the mean values for anti-social orientation is well below the mid-point of 2.5. This result can be interpreted as a general willingness among participants to cooperate with peers in their studies. In the meantime, the graphs for the statements about lack of focus (Figure 6) show some degree of lack of concentration; although a follow-up survey is necessary to identify the reasons for this scattering of attention.

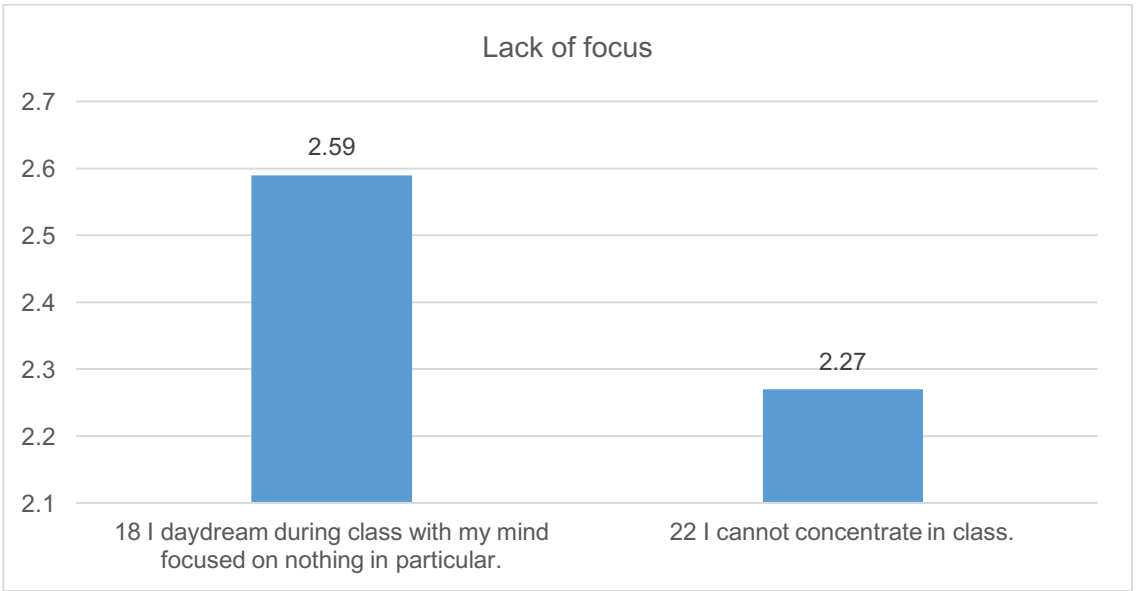

Figure 6: Mean values of measured variables influenced by lack of focus.

Participants chose one from a set of response options on a 5-point scale as regards frequency of a particular behavior stated in each question: "never = 1", "rarely = 2", "sometimes = 3", "occasionally = 4" to "frequently = 5".

Discussion

The project sets out to measure and interpret students' disengagement as attitudinal and behavioral dispositions in a higher education setting in Japan, drawing on the scholarly observations of local tertiary students (Escandon, 2004; McVeigh, 2002). Overall, the results provided good support for the metric properties of the instrument and the five-factor structure of student disengagement as an attitudinal/behavioral disposition with this sample. The study has three implications. Methodologically, we have tested a new measurement scale to assess students' disengagement as an attitudinal disposition informed by the context-specific concerns as well as the literature. Theoretically, the latent structure of student disengagement has been identified with empirical evidence. Practically, the findings open the path to the development of potentially important educational interventions. For example, the means for lack of preparedness ($M = 2.36$) and lack of focus ($M = 2.43$) factors are slightly higher than those of the other latent factors. These factors play a greater role than other factors in shaping students' course participation or lack thereof. We argue that structures ought to be installed which help predispose students to study preparation whilst focusing on the goals to be achieved in university learning. In the introduction section, we identified some challenges we encountered, such as diversity in students' knowledge base and repertoire of skills, practical teaching design, and learner-centeredness in active learning. The curricular structure and interventions could be redesigned so as to help dispose students to developing positive behavioral patterns for participating in learning. In order to achieve this, a mechanism ought to be built in such that the gap between declarative, "university" knowledge and professional, functional knowledge can be decreased. Bridging this gap may be sought, to raise one example, by installing learner-centered, constructive alignment in the curriculum (Biggs, 2014), which is rarely found in higher education settings in Japan, whereby "what the student does is actually more important in determining what is learned than what the teacher does" (Shuell 1986 as cited in Biggs & Tang, 2011, p. 97).

On a more micro level, we argue, a mechanism that helps generate positive behavioral patterns, such as preparing for class participation as well as investing time in outside class assignments, might be of worth. Although Japan's university dropout rate was 10% as at 2005 – the lowest among the 27 developed countries (Matsutani, 2012) – interventions might be possible to further improve this figure. Theories of achievement and motivation state that students' desires to expand their knowledge, understanding, and skills are major contributors to their level of engagement in academic tasks; particularly important is consideration of the extent to which students hold valued long-term goals and the extent to which they perceive their current learning experiences as leading to the attainment of those goals (Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). Miller et al. indicates "the need to emphasize the coordination of proximal goals with distal valued outcomes (future consequences) since the latter may prove to be important for sustaining effort in academic areas of low interest to students" (p. 416). In a similar vein, Jang (2008) argues that providing a rationale that helps students identify a lecture's otherwise hidden value, understand the worth of their effort, discover the usefulness of the lecture, and discover the personal meaning in the lesson. Jang states that when this instructional strategy is successful, it "can help create an opportunity for students to perceive, accept, and personally endorse – hence internalize the self-system – the value of the learning activity" (pp. 798-799). At any rate, there needs to be a system which sustains our practice and that helps students envision the link between their learning experiences and their career paths beyond university. At this micro level, as the identified latent factor anti-social tendency indicates, we contend that creating an inclusive environment and atmosphere which nurtures mutual respect and support among students would be an asset in helping shape more

interpersonal, peer interactions and discussion participation that could potentially lead to cooperative, active engagement. Palloff and Pratt (2005) identifies a learning community as a vehicle through which a course is efficiently conducted: "[b]y learning together in a learning community, students have the opportunity to extend and deepen their learning experience, test out new ideas by sharing them with a supportive group, and receive critical and constructive feedback" (p. 8). Likewise, Elboj and Niemela (2010) have observed an increase in dynamic and supportive interactions along with the solidarity among students by providing them with dialogic and collaborative learning environments. In a series of these efforts to enhance the quality of education, the instrument as we propose here could be used to assess the usefulness of pedagogical interventions by monitoring possible flux in student attitudinal and behavioral patterns and identifying the structure which potentially helps shape positive patterns.

Conclusion

In this paper, we have proposed a scale to measure student disengagement in a tertiary setting in Japan. We have identified the five-factor structure, and the metric properties of the scale were generally well supported. This instrument might be put to use for a diagnostic purpose in higher education. The mean value for each item and factor was below the mid-point of 2.5 on a five-point scale, except Items 15 and 18. This can be construed that most students at the university are well-behaved and diligent, and receptive to the active, collaborative learning style that we facilitate in our English as a foreign language classrooms. This result is in line with our observation of student behavior and performance in our classes at the university. Meanwhile, some limitations warrant caution. First, the measures were self-reports, which might have invited bias in terms of social desirability (Oppenheim, 1992) and self-deception (Hopkins, Stanley, & Hopkins, 1990). Under certain circumstances, people might intentionally claim that they are better than they are, while unconsciously minimizing faults and maximizing virtues in order to maintain a sense of self-worth. It ought to be noted, however, that self-reports offer a range of advantages and may constitute the method of choice for exploring a construct which involves both intra- and extra-psychic processes, such as resistance and misbehavior (Alpert, 1991). Nevertheless, the reliability of the questionnaire should be further reinforced through other means, such as reports via students' self-observation notes, and interviews and focus-groups. Second, because participation in the study was voluntary, it is possible that the participants were the "well-behaved" of the students who were approached. Third, the validity of the instrument was explored among the convenience sample of engineering students only. The scale needs to be cross-validated with larger student cohorts across disciplines and institutions: Factor structures should be further corroborated by conducting confirmatory factor analysis with a larger dataset.

Acknowledgement

This work was supported by the Japan Society for Promotion of Science JSPS KAKENHI (Grant-in-Aid for Young Scientists - B) [Grant Number 26870521].

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Appendix

English Version of the Original Questionnaire Items

Item N	How much do you agree with these statements regarding your behavior? 1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Very often
1	I sit near the back of the classroom.
2	I sit alone away from other students in class.
3	I attend lectures without sufficient sleep or with fatigue from part-time work or club activity.
4	I avoid making eye contact with the teacher when he/she is going to call on students.
5	I repeatedly cut class.
6	I do not attend class on key dates such as quizzes and exams.
7	I oversleep and cut class.
8	I cut class and do something of priority outside school (e.g., socializing with friends, part-time job, family, etc.).
9	I do not respond when the teacher calls on me.
10	I pretend not to be aware of being called upon by the teacher.
11	When called on I discuss the question being asked of and/or the response with fellow students before giving an answer.
12	I pretend as if I have thought out the teacher's question.
13	I pretend as if I were paying attention, but I am actually doing something else such as texting on my phone and doing assignments for another course.
14	I forget to bring necessary materials to class.
15	I do not remember that I had assignments to do until I come to class.
16	I forget assignment deadlines and exam dates.
17	I nap in class.
18	I daydream during class with my mind focused on nothing in particular.
19	I do not take notes of important points in class.
20	I attend class without completing homework.
21	I resort to copying fellow students' assignments or work.
22	I cannot concentrate in class.
23	I fail exams.
24	I get the exam details from friends.
25	I fail to meet assignment requirements.
26	I chat about things unrelated to lecture contents.
27	I use digital devices such as smartphones for non-class purposes during class.
28	I groom myself in class (e.g., do makeup, look in the mirror).
29	I disregard requests to be quiet and soon get back to chatting with friends.
30	In group or pair work, I will not talk to the other student(s) if they are people I don't know.
31	I will not do pair work if the other student is a person I don't know.
32	I do not take a course if I have to do a presentation in class.
33	I do not take a course if it has group- or pair-work activities in class.
34	I will not take a course if it has a teacher hovering over in class to talk to individual students.