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# Designing motivating online assignments and telecollaborative tasks in the time of a pandemic: evidence from a post-course survey study in Japan

## Abstract

Online learning methods in a variety of forms have been used for many years. However, the key difference between teaching conventional courses and emergency online courses necessitated by the global health crisis (Hodges et al. 2020) is the speed and urgency with which transition is expected to take place and the effect of other social and psychological factors on this process (Green et al. 2020). Studying under these conditions influences students' motivation to complete and turn in course-related assignments, especially newly enrolled freshmen taking L2 online courses. The aim of this qualitative study is to examine various factors influencing Japanese college freshmen's (*n*=80) motivation when completing graded online assignments as part of asynchronous English reading courses held during the COVID-19 pandemic. The post-course survey of students from three separate classes was used to capture a detailed panorama of learner motivation. Results from an inductive content analysis of responses indicated that higher levels of motivation were strongly associated with assignments that facilitated learner autonomy, social interaction, personal interest, and practical utility of the task. Conversely, demotivation appears to be strongly associated with assignments reinforcing the perception of high difficulty, personal inefficacy, and cognitive overload.

#### Keywords

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Online assignments, instructional design, learner motivation, COVID-19, Japanese college freshmen.

# Introduction

Students' attitudes toward online learning are closely related to intrinsic motivation to satisfy curiosity and extrinsic motivation to engage with the course material (Kim and Frick 2011). Thus, they suggest that the instructional design of self-directed online learning environments can play an important role in enhancing learners' experiences (Ferrer et al. 2020). Given that instructional strategies are key for stimulating student motivation and engagement during online learning, previous studies suggested that online assignments should (1) provide learners with relevant and useful content, (2) incorporate multimedia presentations with hands-on and real-world activities, (3) create collaborative learning opportunities using online communication tools, and (4) match content difficulty with the learners' zone of proximal development (Martin and Bolliger 2018).

In addition to the design of online assignments, formative assessments conducted online through group discussions and interviews, quizzes, and tests have been positively associated with student engagement and learning performance (Dalby and Swan 2018). These findings have implications for how learners can be engaged in an online course, and the instructors' need to design online learning environments that foster student engagement and interest. Moreover, these assignment designs and formative assessment strategies are consistent with the Attention-Relevance-Confidence-Satisfaction (ARCS) theoretical model that links instructional design and learner motivation (Keller 1987). They more generally link with the Expectancy-value theory (EVT) of motivation, suggesting that students' expectations for success and subjective task values predict their motivation to complete a given assignment (Rosenzweig et al. 2019). Online assignments designed by teachers have a major effect on how students approach online learning. However, the nature of this interaction has not been explored qualitatively to date, in the context of L2 online learning involving Japanese freshmen, nor on the current understanding of emergency online learning during the COVID-19 pandemic. This study contributes to the empirical and the theoretical understanding of the mechanisms that link assignment design and freshmen motivation within an asynchronous online learning environment, and by accounting for environmental conditions related to the pandemic situation.

# Literature review

Over the past decade, many studies have been undertaken to examine what motivates or demotivates students to perform tasks in both online and face-to-face learning environments. Expectancy-value theory was developed to explain how individuals' expectancies and values affect their motivation to pursue certain tasks and activities (Eccles and Wigfield 2002). According to EVT, two main factors determine students' motivation to learn including how well they expect to perform a task and how much they value their outcome of the assignment completion (Hidi, Renninger and Northoff 2019). Self-determination theory (SDT), in contrast, posits that the attainment of autonomy, competence, and relatedness are key determinants of motivation to learn and perform tasks (Ryan and Deci 2000). It is not coincidental that SDT, with its inclination toward self-growth and personal development, has played an important role in invigorating scholarly debates on intrinsic and extrinsic motivation within the educational context. These studies show, for example, that when driven by internal rewards that are naturally satisfying, intrinsically motivated learners generally demonstrate persistence and high qualifications. When learning online, they demonstrate a deeper understanding of the course material (Hoskins and Van Hooff 2005) and exhibit lower attrition rates (Kim and Frick 2011). Autonomy plays a key role in motivating learners because of its volitional (self-endorsed) functioning (Ryan and Deci 2000). From this point of view, autonomy supports motivation and engagement by promoting personally valued interests and needs.

Another useful model to consider is the motivational design of instruction or the ARCS model (Keller 1983). This model focuses on improving the motivational appeal of instructional materials, including course assignments and tasks. The difference between this model and other theories of motivation is that ARCS uses four conceptual categories that characterise human motivation (Attention, Relevance, Confidence, Satisfaction) to develop a set of strategies to improve the motivational appeal of instruction. In terms of assignment design, this model promotes the instructional techniques that attract learners' attention by arousing their interest and sense of the relevance of tasks at hand. For example, studies of online learning posit that during activities and assignments the engagement levels of learners who are personally interested in the topic are higher (Xie et al. 2006).

#### The aim of the study and research questions

The aim of the current study is to qualitatively examine various factors influencing Japanese college freshmen's motivation when completing online assignments during an asynchronous English reading course conducted during the COVID-19 pandemic. The study was guided by the following research questions:

- 1. What factors influence students' motivation and interest to work effectively on assignments in L2 emergency online courses, and which assignments are perceived as motivating?
- 2. What factors influence students' amotivation and disengagement when working on assignments in L2 emergency online courses, and which assignments are perceived as demotivating?

# Methodology

#### **Participants**

The current research utilised the convenience availability sample of three separate first-year undergraduate student classes (n=80), predominantly Japanese (95%), enrolled in English reading skills online courses at a large public university in Japan. There were 37 (46.3%) men and 43 (53.7%) women. Only four students (5%) were international, and none of them were native speakers of English. The students were enrolled in a fully asynchronous online course during the spring semester (May–August) of 2020, taught through the learning management feature of the Microsoft Teams application. Students who completed and returned the post-course surveys belonged to media arts, science and technology (22.5%), humanities (32.5%), comparative culture (28.8%), Japanese language and culture (6.2%), and Chemistry (10.0%).

## Procedures, Data Collection and Analysis

Due to the on-demand nature of the instruction, the word 'assignment' is used rather flexibly in this study to denote homework and/or classwork, depending on the time the students were completing it. Both researchers took part in the assessment of the assignments submitted by their respective groups, providing their students with detailed feedback as well as regular guidance throughout the course using the Microsoft Teams app chat and email facility. In Appendix, we present an overview of the eight assignment designs that we analysed in this study. A semi-structured post-course question guide was developed by the researchers based on motivation theories and constructs reviewed in the previous section

The questionnaire was sent to students one week after the final grades were announced to eliminate the fear that their responses might influence instructors' subjective end-of-course evaluation. The questionnaires were distributed in electronic format using the Microsoft Forms application, which allowed the creation of both open-ended and multiple-choice questions. The use of this format was determined by the convenience of participating in the survey using both mobile and desktop devices. Eighty out of 91 students (87.9 %) have completed and returned the post-course survey. Following Silverman (2004), the collected survey responses were analysed using *an inductive content analysis approach*.

To ensure the reliability of the content analysis to the extent that both researchers agreed on the coding of the content of interest and applied the same coding procedure, the authors engaged in an intercoder reliability test. A total of 156 open-ended responses were analysed, producing 185 units of meaning. Ten cases involved a disagreement between the researchers when including certain units of meaning into specific categories. The test resulted in 94.6% inter-coding agreement on the analysed content. The researchers did not edit the student responses for grammatical correctness before or during the coding stage to avoid miscoding the data.

# Results

Q1: What factors influence students' motivation and interest to work effectively on assignments in L2 emergency online courses, and which assignments are perceived as motivating?

Content analysis of the students' responses identified ten themes associated with motivation and interest when completing online assignments (see Figure 1). The primary focus of the content analysis was to present the range of factors affecting students' motivation to complete course-related assignments rather than to highlight some factors over others. These themes included learner autonomy, social interaction, personal interest in the topic, perceived practical utility, meaningful activity, self-efficacy, sense of joy and/or discovery, authentic



Factors associated with motivation

*Key*: LA = Learner autonomy: SI = Social interaction; PI = Personal interest in the topic; PPU = Perceived practical utility; MA = Meaningful activity; SE = Self-efficacy; SJ/D = Sense of joy and/or discovery; AA = Authentic activity; OP = Outside pressure; IG/F = Instructor guidance and/or feedback. activity, outside pressure, instructor guidance and/or feedback. Three themes, learner autonomy, social interaction, and personal interest in the topic of assignment were more frequently mentioned by freshmen.

#### Figure 1. Factors influencing motivation to complete online assignments

Among these three themes, a significant number of responses, as shown in Figure 1, emphasised the importance of autonomy and the degree of freedom that students were given to complete a particular task. One student's remark exemplifies responses in this category: 'I could write the essay freely. In most of the assignments in this semester, the content was about what we learned. Reviewing is, of course, very important. But it was too much for me. So, I could feel relaxed and interested in writing a free-style essay.' The students' perceived autonomy and control seemed to be associated with various abilities. Examples included: self-worth-'It was because I can write what I like and I can express myself freely'; perseverance—'To write a 500.+ word essay is a hard task for me so it took me a long time to complete it, but because the essay topic was not specified, I enjoyed writing while thinking about the theme'; cognitive presence—'It is interesting to think about the structure and expressions to clearly tell readers about the charm of what I like.'

Social interaction was mentioned in student responses when describing the lack of opportunities for face-to-face socialisation with peers during pandemic-induced remote learning. One response is typical in this category: '...because I really enjoyed talking with my friends in English, and it was an extremely rare chance for me to talk with my new friends from the University during the epidemic.' Other students mentioned various useful aspects of online peer-to-peer learning, including: 'They [online team members] were not from the school of science and engineering which I belong to. Thus, we could exchange information about classes in other departments.' Another student added that 'it was refreshing to talk to other people and do an assignment. It took a lot of time, but it was fun.'

Responses under the third most frequently mentioned theme were characterised by students' high level of personal interest, even though some learners initially perceived these assignments as difficult or challenging. One student's response can illustrate this sentiment: 'I had a hard time coming up with more than 500 words for the essay, but I was able to write about something that I like, so it was much more motivating for me than just writing about something I am not interested in.' Another student said that 'the book *Rich Dad, Poor Dad* itself was interesting. I usually do not like reading assignments because it is obvious that it takes much time. However, this assignment luckily had a topic that I was interested in, so I enjoyed it.'

A more detailed look into students' responses revealed that the online assignments, such as writing a 500-word free-style essay by comparing or contrasting two pieces of information (e.g. a favourite book, manga comics, movie, etc.), or conducting a virtual interview of classmates after reading a newspaper article were perceived as motivating by many students (see Figure 2). Students who mentioned these assignments were more likely to mention learner autonomy, social interaction, personal interest in the topic, and perceived practical utility as their primary motivators.



Key: PHDT = Perceived high-difficulty of task; SE = Self-efficacy; CO = Cognitive overload; OP/O = Outside pressure and/or obstacle; PLM/LLE = Perceived lack of meaning and/or low learning effect; LPI = Lack of personal interest; U/II = Unclear and/or insufficient instructions ; F = Fatigue; LFCT = Lack of feedback on completed tasks: PLI = Perceived lack of intensives.

Figure 2. Assignment types perceived as motivating

Q2. What factors influence students' amotivation and disengagement when working on assignments in L2 emergency online courses, and which assignments are perceived as demotivating?

Similarly, the researchers conducted an inductive content analysis of the students' responses to examine themes associated with amotivation and disengagement when given online assignments. Coincidentally, the analysis facilitated the identification of ten themes (see Figure 3), including perceived high difficulty of task, low self-efficacy, cognitive overload, outside pressure and/or obstacle, perceived lack of meaning and/or learning effect, lack of personal interest, unclear and/or insufficient instructions, fatigue, lack of feedback on completed assignments, and perceived lack of incentives. From these ten demotivating factors, students mentioned perceived high difficulty of task, negative self-efficacy, and cognitive overload more frequently.

For example, the perceived high difficulty of a task appears to hinder the effective completion of the task by many students. One typical student response in this context was 'I am not very good at reading in English, and the chapter was too long for me. So, I hesitated to read and do the work.' Many responses highlighted the low self-efficacy associated with students' perceived lack of necessary knowledge and skills to complete an assignment: 'I could not figure out what was What I Know by simply reading the chapter's title that I had never seen before.'



Figure 3. Factors influencing demotivation to complete online assignments

In addition, many students complained about cognitive overload related to their perception of the

Key: A#1 = Watch a video and compose 15 questions; A#2 = Take a short 5-question online quiz; A#3 = Read an article and conduct a virtual interview of your teammates; A#4 = write a 500+ word free-style essay by comparing or contrasting two pieces of information; A#5: Take a long 20-question online quiz; A#6 = Matching task related to the topic of 'cause and effect'; A#7 = Read and analyse a chapter of the book 'Digital Minimalism'; A#8 = Read a chapter from the book 'Rich Dad, Poor Dad' and complete a KWL graph (what I Know, what I Want to know, what I have Learned). For details of each assignment, see Table 2.

excessive amount of work and time required: 'I was reluctant to start reading the chapter due to the amount of time required to finish it and the theme of this assignment.' Such factors as outside pressure and/or obstacle ('It was difficult to adjust our [virtual teamwork] schedule because we watched the video lesson and read the document during the time of this class. So, we had to make the meeting time on the days we did not have other classes, such as on Sunday.'), perceived lack of meaning and/or learning effect ('I thought the book Rich Dad, Poor Dad was not the correct option to choose to make us make the KWL Graph. That book tells us the opinion of that author, so we could not find any facts.'), lack of personal interest ('It was least motivating for me because the [chapter of the] book Digital Minimalism had a long content [sic] and was not really interesting for me.') have also been considered by students as demotivating.

Lastly, significantly few students believed that such factors as unclear and/or insufficient instructions ('Actually, I thought that the instruction was not enough. When I started the assignment, I got confused and did not understand what to do.'), fatigue ('It was a very long chapter for me. I was so tired to read, and I could not fully understand the story.'), lack of feedback on completed tasks ('However, I chose this one because there was an unclear criterion for the correct answers compared to other assignments. I wish I could learn more about why those answers were correct.'), and perceived lack of incentives ('We had a lot of work to do, but there were not many points allocated for this assignment.') played a demotivating role when performing a task.

As for the specific assignments (see Figure 4), notably, many respondents mentioned that reading a book chapter from Digital Minimalism, summarising its main idea, identifying key information and new vocabulary were associated with their experiences of demotivation. Less frequently, respondents mentioned the other seven assignments, including writing a 500+ word-free-style essay, watching a short YouTube video, and comprising essential questions as well as being less motivating and interesting.



Key: A#1 = Watch a video and compose 15 questions; A#2 = Take a short 5-question online quiz; A#3 = Read an article and conduct a virtual interview of your teammates; A#4 = write a 500+ word free-style essay by comparing or contrasting two pieces of information; A#5: Take a long 20question online quiz; A#6 = Matching task related to the topic of 'cause and effect'; A#7 = Read and analyse a chapter of the book 'Digital Minimalism'; A#8 = Read a chapter from the book 'Rich Dad, Poor Dad' and complete a KWL graph (what I Know, what I Want to know, what I have Learned). For details of each assignment, see Table 2.



## Discussion

The results suggest that many theories of motivation provide useful instruments to explain what kinds of instructional materials and assignments to motivate freshmen to learn online during the pandemic. In the current study, the self-determination theory's analytical constructs have proven helpful in explaining why many freshmen find certain kinds of assignments more motivating and interesting than others. The SDT's autonomy and relatedness constructs were particularly noteworthy in this context. This study also determined that higher levels of freshman motivation were associated with learner autonomy and social interaction. These results are consistent with the existing research on motivation in online learning in pre-pandemic situations, suggesting that online learners are more likely to exhibit motivation when they are given a certain degree of freedom over the content and pace of their learning (Abuhassna et al. 2020; Patall and Hooper 2019). Likewise, they are more motivated when given opportunities to interact and socialise with other students through virtual tasks (Hsu et al. 2019).

These results suggest that freshmen taking L2 online courses have been strongly affected by intrinsic motives when performing course tasks (Kim and Frick 2011). Thus, personal interest, enjoyment, freedom of choice, need to socialise during school closure, and social distancing have played important roles. Very few responses reflected learners' motivation from such factors as outside pressure, grades, fear of failure. In contrast to previous research (Hartnett 2016), this study has found a relationship between the instructor's role and students' motivation to learn, suggesting that in the asynchronous learning environment, the assignments that promote learners' freedom of choice may be positively linked to intrinsic motivation. The researchers are of the view that at the time of major pandemic, or for that matter, any emergency of natural or socio-political character, intrinsic motivation plays a more explicit role in enhancing learners' engagement with instructional materials and tasks.

Along with SDT, expectancy-value theory supports several key findings of this study. For example, the results are consistent with the theory that Japanese freshmen's motivation to perform L2 online tasks was associated with their positive expectations to perform a task and how much they valued the outcome of the assignment's completion (Hidi, Renninger, and Northoff 2019). All three forms of perceived task value (Eccles and Wigfield 2002; Trautwein et al. 2019) were strongly reflected in freshman responses, including intrinsic value, attainment value, and utility value. Compared to previous research suggesting personal relevance and

utility value as more predictive of students' motivation to perform tasks (Hulleman and Barron 2016), the current qualitative study observed no significant differences among the three forms of perceived task value. Overall, these findings are consistent with previous research indicating that personal interest in the topic and practical utility play key motivational roles in online learning (Xie et al. 2006).

Moreover, this study argues that the intrinsic value of enjoyment/interest, attainment value of selfworth, and utility value or meaningfulness of the experience are related to learners' intrinsic motives more than to extrinsic ones. Thus, the instructional design that promotes these values may likely result in greater learner motivation and engagement. The ARCS Model of Instructional Design (Keller 1983) is worth mentioning in this context. The design of the assignments in this study and the results of the experiment were found to be compatible with the ARCS model's four constructs (attention, relevance, confidence, and satisfaction). Because this model builds on EVT and several other theories of learner motivation, it is not coincidental that freshman participants paid closer attention to tasks that required their self-reflection or independence, or that they found tasks practical and useful. When working on assignments that were within students' zone of proximal development their personal judgements of self-efficacy, confidence, and possibly their satisfaction were also affected.

It is important, as well, to deconstruct factors that led to freshman demotivation and disengagement. Demotivation seems to be closely related to the perceived high difficulty of tasks as well as Japanese students' perception of inefficacy and cognitive overload, preventing their effective work on assignments. We posit that these triggers of student demotivation are closely interconnected. For example, all three could be explained by the lack of direct academic and social interventions aimed at freshmen during the first months of the study. The need for social distancing during the pandemic caused the cancellation of face-to-face freshmen orientation sessions and suspended all in-person tutoring programs.

Cognitive overload may have played a critical role in shaping students' perception of online assignments as being excessively difficult. An overwhelming majority (75.4%) of students in the current study were enrolled in 16 or more online courses simultaneously during the spring semester. This tendency varies across academic majors, but in general, it reflects the fact that Japanese college freshmen tend to attend many classes per semester. As a result, they exhibit higher levels of fatigue (Ono 2020). Based on this finding, we suggest that the need to be simultaneously enrolled in many online courses during the COVID-19 pandemic is one of the critical elements differentiating emergency online learning from conventional online learning

# Conclusion

Based on this finding, it is crucial to apply a multi-faceted approach to the analysis of factors related to motivation when examining learner motivation in both conventional and non-conventional circumstances (such as the current pandemic or some major crisis). One approach that the authors found particularly promising is the *situation-dependent* explanation of motivation (Hartnett 2016; Turner and Patrick 2008). From this perspective, it is helpful not to restrict one's approach to a simple dichotomous analysis of intrinsic versus extrinsic motivation of online task performance, but instead to consider the influence of broader sets of factors such as psychological (autonomy, utility, relevance), cognitive (information overload), social (relatedness, interaction), technological (synchronous, asynchronous), and environmental (crisis, uncertainty, isolation). Though this analytic strategy may look complex initially, it could eventually serve to calibrate instructional materials to address the learners' motivation requires 'qualitatively differentiated learning experiences ... [that must] begin with the students, aligning what they learn (content), how they learn (processes), and the outcomes of their learning (products) with who they are' (Hartnett 2016, p. 115). The study recommends that teachers deliberately and extensively employ strategies to enhance the motivational appeal of instructional materials and assignments, especially during emergencies.

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#### Appendix

An overview of assignment design for the English reading online courses

#	Module's topic	Assignment description	Point s
1.	Find the essential information	Watch a video titled "Why One Man Owns 2,371 Cell Phones" and write down fifteen 5W1H questions to find out the key information.	5
2.	Find the topic sentence	Please read the passage titled "A Letter to a Pet-sitter" and answer the following five questions using the online quiz.	5
3.	Find the main idea	<i>Read the article "Does Japan Get Enough Sleep?" and, based on the main idea, conduct an online interview of your classmates.</i>	10
4.	Compare & contrast information	Write a 500+ word free-style essay by comparing or contrasting two pieces of information (e.g., your favourite book, manga comics, movie, etc).	20
5.	Vocabulary in context	Take a 20-question online quiz.	20
6.	Identify cause & effect	<i>Mini-task</i> #1: Complete the following sentences with their likely effects.	15

		<i>Mini-task</i> #2: Complete these sentences with possible causes. <i>Mini-task</i> #3: Match the causes with their likely effects.	
7.	Distinguish facts from opinions	Read chapter one of the book "Digital Minimalism" <sup>1</sup> . Summarize the main idea. Identify the key information, one or two opinions and facts, and describe 2–3 new vocabulary discovered.	10
8.	Identify the order of importance	<i>Read chapter one of the book "Rich Dad, Poor Dad"<sup>2</sup> and complete the KWL Chart.</i>	15

Note: <sup>1</sup>Newport, C.C. (2019). *Digital Minimalism: Choosing a Focused Life in a Noisy World*. New York: Portfolio/Penguin; <sup>2</sup>Kiyosaki, R. T. (2017). *Rich Dad, Poor Dad: What the Rich Teach Their Kids About Money That the Poor and Middle Class Do Not*! (2nd ed.). Scottsdale: Plata Publishing.