

《实践報告》

Bringing University Seminars into the Digital Age

Todd Hooper

Since the advent of the Internet, the world has entered the Digital Age—an age in which information about any topic can be easily accessed with a click of a mouse or a tap on a touchscreen. This means that university students who have laptops, smartphones, or tablets have practically unlimited access to information. However, having the ability to use these tools does not mean that they have the ability to use them for educational purposes (Mehran, Mehrasa, Koguchi & Takemura, 2017). This may be due to the fact that they often use computers and digital devices for entertainment purposes, and have comparatively fewer experiences with these tools in educational settings (OECD, 2015).

Another aspect of the Digital Age is that the educational needs of students are different. Merely possessing knowledge is not sufficient for participation in an increasingly competitive and connected global economy. They must be able to process the knowledge that they possess by engaging in critical thinking, and through this process create new ideas and knowledge (Soffel, 2016; Zwiers & Crawford, 2011; Casner-Lotto & Barrington, 2006). This need to create is particularly important because the use of the Internet has led to the rise of a participatory culture in which members need to contribute to the knowledge base of their communities, whether online or offline (Jenkins, Purushotma, Weigel, Clinton & Robison, 2009). When students are using digital tools for entertainment purposes, they are consuming rather than creating, so the digital skills they acquire are inadequate to face the creative challenges of life in a participatory culture. Therefore, it is important that educators provide students with opportunities

to develop their ability to process information in order to create knowledge through critical thinking and rigorous discussion. This paper will examine how digital tools can be used in a university seminar to provide these opportunities for students.

Literature Review

Seminars

Before discussing how digital tools can be introduced into university seminars, it is important to clarify what university seminars are, and what role they play in a university education. A seminar generally consists of a small group of students supervised by an expert in a particular field—usually a professor that teaches at the same university that the students attend (Exley & Dennick, 2004). While seminars can take many forms, there is one key feature that they share—a focus on discussion. It is through this interaction with others that knowledge is constructed, and this requires the active participation of students (Vygotsky, 1978; Vosniadou 2001). Additionally, in this exchange of ideas students learn the importance of asking good questions and doing sound research. These skills contribute to the development of critical thinking—thinking that is purpose driven, flexible, and supported by evidence (Ennis, 1998). So, it could be said that the role of university seminars is to inculcate in students the belief that knowledge is socially constructed and that this knowledge is best developed through the active use of critical thinking skills through discussion.

The Flipped Classroom

In Japan, seminars typically meet once a week over a fifteen-week semester, so it can be a challenge to delve deeply into a topic with so little time. This problem is compounded if the students have little background knowledge on the topic of the seminar. This requires supervisors to introduce background knowledge. If this is done through in-class receptive activities, it takes precious time away from the core activity of seminars—discussion. However, digital tools can be used to preserve in-class time for discussion. One approach is to use a flipped classroom model. The basic premise of this model is to have students work on receptive activities outside of class, while using class time for productive activities, such as discussion (Carbaugh & Doubet, 2016; DeLozier & Rhodes, 2017). The receptive activities done outside the classroom can take many forms. Recorded lectures, assigned readings, or individual e-learning are three common forms. Educators using a flipped classroom model often take advantage of the Internet and students' access to computers or smartphones in order to deliver receptive activities to students. To provide

one example of how the flipped classroom model can be implemented, an educator may ask students to watch and take notes on a pre-recorded lecture posted on the Internet as homework. When those students come to class, they can use their notes from the lecture to hold discussions with their peers in order to confirm their understanding of the content. Once the students have confirmed their understanding of the content, they can then apply what they have learned to a group project. As can be seen, this approach utilizes class time for productive work, reinforces the importance of discussion and group work to socially construct knowledge, and emphasizes reflection on past knowledge for application, which requires students to think critically.

There are some benefits that this increased focus on productive learning provides. First, it creates a classroom environment that is more learner-centered (Bergmann & Sams, 2012). Student-centered learning environments allow students to take a more active role in their learning, which allows them to take ownership of what they are learning, which is not the case in classes where teachers do a majority of the talking (Hattie, 2012). Second, the increased interaction between the seminar members, including the supervisor, allows for stronger relationships to develop. Research in neuroscience shows that positive relationships and interactions can improve learning and boost memory (Sousa & Tomlinson, 2011). Third, flipping the classroom can reduce the cognitive load on students by allowing them to gain exposure to new ideas and concepts before they come to class (Carbaugh & Doubet, 2016). This is important because prior knowledge is a key component in constructing meaning (Hattie & Yates, 2014).

Online Discussion

The flipped classroom model can also be supplemented by the use of discussion boards, social network services (SNS), or other such digital tools in order to hold asynchronous discussions both inside and outside of the classroom. This can be particularly valuable for Japanese students who may feel reluctant to speak up in face-to-face discussions in class due to either personal or cultural tendencies (Nakane, 2006). By posting their ideas, comments, and questions online as text, students may be able to avoid some of the anxiety they feel in face-to-face encounters. Additionally, due to the asynchronous nature of online discussion, students do not need to worry about finding the right timing to participate in a discussion. Additionally, they also have time to construct their ideas without the pressure to perform (Kear, 2011).

Online discussion can also contribute to building community in a seminar. Wellman (2001) defines community as “networks of interpersonal ties that provide sociability, support,

information, a sense of belonging, and social identity” (p. 228). Since learning is socially constructed, a sense of belonging is a vital part of education (Bender, 2003). Online discussion can help create connections between students by increasing the number of interactions they have with each other. These interactions are shared experiences. The more shared experiences students have, the more they will feel like they belong together as a group. This in turn can help students feel more confident to express themselves face-to-face in class. Additionally, students are more likely to collaborate with each other. The more that students collaborate, the more they take ownership of their educational environment, which can improve student motivation (Ushioda, 2009.) Also, online discussion can be important for seminar members who are unable to meet in class due to overseas study or other circumstances, and in fact may be the only contact that they have with other seminar members. In other words, online discussion can play a vital role in building community in seminars where some members are not able to be physically present in class (Kear, 2011).

One disadvantage identified in the use of online discussion boards is that student participation is difficult to maintain. As the novelty of it wears off, students may lose the motivation to participate within a few weeks (Angeli, Valanides & Bonk, 2003; Xie, DeBacker & Ferguson, 2006). Factors that can improve student motivation to participate in online discussion are group size and structure (Frag, 2016), grading and feedback on student participation (Dennen, 2005), relevance of online discussion to course content and projects (Kachel, Henry & Keller, 2005), and direct encouragement to students to participate (Xie, DeBacker & Ferguson, 2006). All of these factors should be considered when using online discussion in seminars.

Research Questions

In this paper, three aspects of using a flipped classroom model with online discussion in a university seminar are explored.

- RQ1 What kind of changes occurred in students’ in-class discussion performance?

- RQ2 What kind of changes occurred in the students’ discussion ability while participating in online discussion?

- RQ3 Were students able to maintain their participation in at-home activities over the course of the semester?

Method

Participants and Procedures

Seven third-year students ($n=7$) at a private Japanese university participated in this study. All of the participants were members of the same seminar, which was supervised by the author of this paper. The participants met once per week for ninety minutes over a 15-week period. The period covered in this study covers weeks two through ten. During this period, a flipped classroom model and an online discussion board were used. Week one was not included in this study because the aim of that session was to introduce the digital tools used in the seminar. Weeks eleven through fifteen were not included in the study because in-class and at-home activities were focused on writing an end-of-term paper during this period, so the flipped classroom model and online discussion were not used during these weeks. Six of the participants attended these weekly sessions. One participant, who was studying overseas, was not able to attend these sessions, but was able to complete assignments online, and was able to maintain contact with other participants through online discussion. In order to protect the privacy of these participants, they will be referred to as participants A through G when mentioned individually.

Since the study had a small number of participants, a qualitative approach to examining the research questions was adopted. In order to answer RQ1, the supervisor of the seminar recorded observations of student participation at the beginning of the study and at the end of the study. These observations were compared in order to determine changes in students' in-class discussion performance.

In order to answer RQ2, two participants were chosen as case studies. Case study one consists of two posts written by Participant B and their associated discussions, and case study two consists of two posts written by Participant F and their associated discussions. The first post in both case studies comes from week three. Week two posts were excluded as they consisted mainly of discussions about how to use the digital tools rather than the content of the lessons. The second post comes from week eight for case study one and from week nine for case study two. These posts were selected because they contained the longest chains of discussion generated by each participant. Only two posts are presented for each case study in order to make the contrast between earlier posts and later posters clearer, which makes the changes in the participants' discussion ability more apparent.

Quantitative data was collected for RQ3. To show that students regularly participated in the at-home activities, the following data were recorded: 1) the number of mind map ideas written and posted online, 2) the number of posts written for online discussion, and 3) the number of words

written for online discussion. While students were given some time to participate in online discussion in class each week, the majority of online discussion occurred at home. Participants had weekly goals for each of these that they needed to reach. The weekly average of the seven participants for each of these three items were calculated. To determine if students were able to maintain weekly participation in at-home activities, these averages were compared to the weekly goals set for students.

Course Design

The course consisted of a university seminar in which a flipped classroom model and online discussion were implemented. The topic of this seminar was comics studies, with a particular focus on comics published in the United States. The objective of this seminar was to teach students how to critically examine comics for visual meaning, theme, and relevance to a variety of social issues. The participants in this seminar had no background knowledge for this kind of analysis of visual text. Therefore, they would need to build a base of knowledge before attempting this kind of analysis.

To help students build their background knowledge, a flipped classroom model was used. Eight recorded PowerPoint lectures were provided during the fifteen-week course. Recorded lectures were chosen because lectures are a familiar format for university students, and they provide students with multiple forms of input—students can either listen to the lecture or read the lecture notes. These lectures ranged from 3.12 minutes to 10.35 minutes, with an average runtime of 6.5 minutes.

In order for a flipped classroom to operate effectively, what students need to do outside of class has to be clear. This is especially true if students do not have prior experience with flipped classroom instruction. In this seminar, students were asked to do receptive activities outside of class (see Table 1.)

Table 1. At-home Activities

Weekly Assignment

1. Watch a recorded lecture (notes provided)
 2. Read an assigned comic book
 3. Write notes on the comic book in the form of a mind map
 4. Write a short report on Edmodo based on the mind map notes
-

For the online discussion section of the seminar, the learning platform Edmodo (www.edmodo.com) was selected. Edmodo was chosen for several reasons. First, Edmodo's system is

very similar to the one used by Facebook. Most of the participants had experience using SNS such as Facebook, so Edmodo was not difficult for them to use. Also, using an SNS format may encourage more social interaction, which can help students form stronger relationships (Lawrence, 2017). Second, unlike Facebook, Edmodo provides privacy for students, which is a major concern for students when using SNS for education (Weber, 2012). Educators can create virtual classes on Edmodo and control who joins those classes. Only people who have been invited to a class can see the content there. This also has the benefit of not intruding on students' existing social networks, which may happen if a more open system is used.

In order to ensure that students maintained their participation in at-home activities over the course of the semester, a grading system was implemented, as recommended by Dennen (2005). In order to create a grading system that would be motivating for students, innovations from game design were adopted. Games are very good at motivating players because they show incremental progress towards goal completion (Willis, 2011). To utilize this model, goals need to be clear, and students should get regular feedback on their progress towards these goals. For this seminar the participation goals were set at ten mind map ideas, five posts, and two hundred words written per week. This was a challenging goal for students, but challenging goals can motivate students to put more effort into their work and to engage with it more deeply (Hattie, 2009; Goff & Ackerman, 1992). In order to measure and give feedback to students on their progress towards the three goals, a leveling system was borrowed from game design. Students received one point for each mind map idea they wrote. When they reached ten ideas, they received a level. They also received one point for each post they made. When they reached five points, they received a level. For the number of words written, they received a point for every 20 words they wrote. For every ten points they received a level. Students were provided with weekly reports of their points and levels, and by comparing their levels with the week number, they could see if they were ahead of the weekly goals. In other words, students could visualize their progress towards their goals easily.

Results

What kind of changes occurred in students' in-class discussion performance? Four changes were observed in the students' performance (see Table 2.). The change in the primary language of discussion shows that students may have become more confident with the material and more comfortable with each other. While students still employed Japanese occasionally even at the end of the semester, they remained on topic in their discussions. Japanese was used to clarify concepts

from the at-home activities that students still found challenging. The supervisor encouraged this, because once students understood the concepts, they could express their ideas in English more easily, so this use of L1 (Japanese) supported the students' ability to express themselves in L2 (English). Second, students became more active in class by asking more questions as the amount of solicited and unsolicited questions increased. This shows that students felt less self-conscious about asking questions. This change also created a more learner-centered classroom environment, because when students ask questions, they gain control over the discussion that occurs in class. Finally, students were more likely to talk with each other or to answer questions from the supervisor, even when they were not sure of their ideas. At the beginning of the seminar, students often stopped talking when they were unsure of what to say in discussions. If asked questions by the supervisor, they were likely to answer with, "I don't know." This led to sudden breaks and very short discussions. Towards the end of the semester, students were more willing to take a risk on their ideas, so the length of discussions increased. This also created a more learner-centered environment as the intervention of the supervisor became less frequent.

Table 2. Four Observed Changes in Students' In-class Discussion Performance

At the Beginning of the Semester	At the End of the Semester
Discussion held primarily in Japanese	Discussion held primarily in English with some Japanese
Students never asked the supervisor questions	Students proactively approached the supervisor to ask questions
Students silent when asked if they had questions	Students asked questions when asked if they had questions
When not sure of an idea, students would not share it	When not sure of an idea, students would try to share it

What kind of changes occurred in the students' discussion ability while participating in online discussion? To examine this, two case studies were examined. There are a few points to make before looking at the case studies. First, the initial post in each discussion thread was a part of the students' at-home receptive activities. After reading a comic, students made notes on the comics using a mind-mapping app. Based on these mind maps, students wrote a brief report summarizing their notes. The discussion followed these initial posts. The supervisor also participated in the discussions. Students had opportunities to participate in the discussion both at-home and in-class. Second, the case studies are presented with some spelling corrections in order to make them easier to read. However, no grammar corrections were made, in order to give readers an idea of the English level of the participants.

Looking at the discussion started on April 17 in Case Study 1 (see Table 3.), initiated by Participant B’s post, it can be seen that there is little student discussion after the initial post. Participant F and D provide a single sentence each praising Participant B’s report. Participant B replies to these comments with thank you messages. Overall, there is not much content in the participants’ posts. When the supervisor asks a question, the discussion ends with no reply from any of the participants. In the discussion that begins on May 31, some changes in discussion ability can be observed. First, Participant B is able to respond to the supervisor’s question, and is even able to follow up a comment with a response, so it can be said that Participant B has become more responsive in discussions. The responses are simple, but even simple responses can continue a discussion. Second, in the post about theme at the end of the discussion, Participant B shows an ability to provide examples to support the idea presented. Finally, comparing Participant F’s comment in the first discussion to the second discussion, shows improvement in that the comment in the second discussion is more than one sentence, and contains a reason for the opinion expressed.

Table 3. Case Study 1: Participant B

April 17, 2017	May 31, 2017
<p>Participant B: (posted a mind map) This week I read Free Comic Book Day Archie's Summer Splash! #1. This story appear a lot of boys and girls. The Archies appear in ZOWIE-PALOOZA concert. They have a lot of fun. They play acoustic music. Cheryl picking on the Archies' member. She sprinkle water. Cheryl watched to play their music. Then she say, "I want to be in ZOWIE-PALOOZA concert." But she can't play instrument and dance and sing. She interferes with The Archies. So Cheryl's brother told false concert place. She went another place. At that time The Archies play music at the beach. Many people have colorful hair, so it was good to understand a character clearly. and they are very expressive.</p> <p>Participant F: I was good to understand characters too.</p> <p>Participant B: Thank you [Participant F]! This comic is fun:)</p>	<p>Participant B: (posted a mind map and favorite comic page) This week read Lumberjanes Don't Axe, Don't Tale. They hiked to look for an edible plant. April and Ripley and Molly and Jo ate an edible wild plant without doubt. However, Mal hesitates about eating. Mal worried that an edible wild plant did not have the pee of the slug. Jen began the talk of the ghost at the campground. The miner who ate food was attacked. And the campground disappeared. As for them, a face became pale to hear this story. This art is colorful and so cute. It is drawn to eyelashes well. My favorite picture is this page. Because it is drawn an aged face of everyone. Everybody is a girl. However, the face of all looks like a boy. In the panel, there is a long shot of everyone. The face of all looks pale. And they grow old. It was totally different from a picture of former Lumberjanes. However, Ripley and Mal and Jo looks like a boy with this picture. After all I thought Lumberjanes is easy and simple. Mutant Turtles was difficult for me. lol. The</p>

Participant D:

Your report is very good at describing the story.

Participant B:

Thank you [Participant D]!!

Supervisor:

I thought your comment on the characters' hair color was interesting. Perhaps that is something that is appealing for Japanese readers? I notice that in anime and on manga covers, characters often have unusual hair colors. For example, it is not unusual to see characters with blue or green hair in anime. I have a question--why do anime characters sometimes have unusual hair colors? Do you think it is OK?

bright color in Lumberjanes create a fun mood.

Supervisor:

Oh, you're right! I didn't notice it at first, but the old miners in the story look very much like the Lumberjane girls. I guess the girls are imagining the same thing happening to them after they ate the plant. By the way, which art did you like better--the art in Lumberjanes #2 or in Lumberjanes: Don't Ax, Don't Tell?

Participant B:

I like Lumberjanes #2, because I was excited at this story.

Participant F:

I want to read this series again!! This story is interesting. Your favourite page is scary. Five men's faces look like zombie.

Supervisor:

It seems like Lumberjanes is very popular. [Participant B], I agree with you. The artist for Lumberjanes #2 gives the characters a lot of energy. [Participant F], there are a lot of strange creatures that appear in the Lumberjanes stories. Perhaps some of them are scary.

Participant B:

[Participant F], my favorite page is scary, I think so.

Participant B:

I feel energy Lumberjanes #2 too.

Participant B:

The theme of Lumberjanes Don't Axe, Don't Tale is the meaning of friendship. For example, on page 1, They act together. On page 2, They ate plant together. On page 6, They listen to Jen's story together.

Looking at the discussion started on April 16 in Case Study 2 (see Table 4.), initiated by Participant F's post, thank you messages are prominent, as they were in the first discussion in Case Study 1. However, there are more posts in the Case Study 2 initial discussion. In the supervisor's first post, the topic of smoking is mentioned. This point was raised by Participant F

in class, so this shows how in-class and online discussion can interact. However, the responses tend to repeat or confirm the ideas previously expressed by others. Without new information, the discussion ends quickly. The discussion that begins on June 5 is much longer. Participant F showed good improvement in discussion abilities by writing responses that are longer than one or two short sentences. Also, new ideas and information are provided in each comment, so it became easier to continue the discussion. Also, when presenting opinions, Participant F provided some supporting evidence, as can be seen in the first response to the supervisor and in discussing the theme of the comic. There is one curious point that can be observed here. As the discussions got longer at the end of the semester, the number of participants in each discussion decreased. As seen in Case Study 2, the number of participants decreased from three to two, and in Case Study 1, the number of participants decreased from four to three.

Table 4. Case Study 2: Participant F

April 16, 2017	June 5, 2017
<p>Participant F: (posted a mind map) This week I read Detective Comics #27: Special Edition pages 3-8. This story located in Gotham City. There is Lambert who is killed and he has three business partners. The one of business partner Stryker wants to control the business so he tries kill his business partners. In the end the Batman comes and kills him. I thought the pictures are very colourful and there are dark shadows and these dark shadows are full of reality. This was the first time to read the American comic.</p> <p>Supervisor: Nice work, [Participant F]! I like how your mind map has more than 10 ideas. That shows you're doing your best. I never noticed that Bruce Wayne always had a pipe in his mouth. That was a very good observation.</p> <p>Participant F: Thank you:) I wonder why he always has a pipe in his mouth too.</p> <p>Supervisor: Perhaps the custom of smoking was much more popular in 1939 (this is when this comic was published). I remember when I was younger that people often smoked in</p>	<p>Participant F: (posted a mind map) This week I read Smile. This comic is real story. Main character is Raina and she is 11 years old. She has younger sister and brother. She is a member of Girl Scouts. One day she went to gather of Girl Scouts after that Kelli's mum drove her home. Kelli is Raina's friend and she is also a member of Girl Scouts. Kelli's mum stopped near Raina's house and she said to Kelli and Melissa " you walked Raina to home". Kelli said " race you guys " and they run. Then Raina fell down and she hit her face on the concrete and her front teeth are gone. She went to dentist with her mother and dentist fixed her teeth. It took for a long time!!!</p> <p>Supervisor: I haven't read this comic before. It's interesting that it is a real story. Would you say this is a sad story, or is the story a bit more cheerful? Could you post your favorite page? I'm interested to see the art style of this comic.</p> <p>Participant F: (posted favorite comic page) I would say this story is a bit more cheerful because she lost her front teeth and at first she was sad and feel down but she was getting. My favorite page is that page. As I mentioned above suddenly she became positive.</p>

restaurants and other public places. However, these days I don't see so many people smoking. I guess that in modern comics, characters that are shown smoking are probably bad or rebellious characters, not heroes.

Participant B:

Like a teacher, I also never noticed that Bruce Wayne always had a pipe in his mouth. Thank you for helping me a while ago, [Participant F]:)

Supervisor:

Actually among smokers, pipe smoking is quite rare these days. Most smokers smoke cigarettes. I wonder when this custom changed.

Participant F:

I see. These days people can't smoke anywhere.

Participant F:

That's okay [Participant B]:))

Participant D:

I thought your awesome observation was amazing

Participant F:

[Participant D] thank you!

Supervisor:

OK, I can see that she has a positive attitude about life. That's a very good message, I think. By the way, I really like the art style in this comic.

Participant F:

The theme of Smile is family and friendship. For example, on page 12, Raina's mum was worried about her. On page 42, she held her birthday party with her friends and got many presents from her friends. On page 48, her family gave her piercing done for her birthday present.

Supervisor:

Those are good examples.

Supervisor:

When you were a child, did you ever think of joining Girl Scouts?

Participant F:

No. Because when I was a child I didn't know about Girl Scouts. I liked go camping with my family!!

Supervisor:

You're so lucky! I never went camping when I was a child. In fact, I still have never been camping! Where did you go camping?

Participant F:

I went camping every summer. Not only family I went with my relatives. I went different places every year.

Supervisor:

My son is in the Cub Scouts. I think he went to Shiga to camp. They stayed in a cabin, not in a tent. When you went camping did you stay in a cabin or in a tent? Which do you prefer?

Participant F:

Yes. I went with many people so it was big event. When I was child we stayed in a tent but when I was a high school student we stayed in a cabin. I like both!!!

	<p>Supervisor: Since I've never been camping, I think I would like to try a cabin first. Perhaps a tent would be too adventurous for my first camping experience.</p> <p>Participant F: A tent was really exciting because it is unusual life. But a cabin is comfortable because it is like our house.</p> <p>Supervisor: Well, comfort is more important to me than excitement, so I guess I will choose a cabin.</p>
--	--

Were students able to maintain their participation in at-home activities over the course of the semester? The data show that all seven participants were able to maintain their participation in the at-home activities (see table 4.). Additionally, they were able to maintain and exceed the weekly goals of ten mind map ideas, five posts, and two-hundred words written per week

Table 5. Online Discussion Participation

	Average Number of Mind Maps	Average Number of Posts Written	Average Number of Words Written
Weekly Average	11.65	5.87	257.68
Week 2	10.29	4.71	184.29
Week 3	12.14	7.00	195.86
Week 4	6.57	7.43	217.57
Week 5	10.14	3.29	133.00
Week 6	10.14	8.00	260.43
Week 7	15.57	5.71	264.86
Week 8	17.43	4.43	304.57
Week 9	13.00	4.43	259.71
Week 10	15.57	7.86	498.86

Discussion

As can be seen by the observations of students' in-class discussion performance, they became less reticent, more open to asking questions, and more willing to speak in English. This provides some evidence that efforts toward community building by increasing interaction were successful. A sense of community is an important part of the seminar experience. It brings

members closer together, and can reduce the anxiety that many students feel when sharing their ideas with others, particularly when doing so in a second language. Participants in this study showed that they felt less anxiety around other seminar members. By asking more questions to the supervisor, they showed that they had less anxiety about being judged for their lack of knowledge or ability. Additionally, they showed that they had less anxiety about having their English ability negatively evaluated by their peers. This was demonstrated by their increased use of English in discussions. These results are encouraging, because the ability to communicate freely without fear of censure is an important part of fruitful discussion, which is vital for seminars, and learning in general.

Participants demonstrated progress in their online discussion skills. While there were still many grammatical errors in student posts, other areas such as the number of sentences per response and the ability to support ideas with evidence showed improvement. The increase in the number of sentences is important for online discussion, because the more sentences there are in a response; the more likely that new information will be added to the discussion. Such new information can be used to drive the discussion forward, and thus increase the length of discussions. An increase of evidence to support ideas demonstrates that students are thinking more deeply. Also, providing evidence without having to be prompted with a 'why' question shows that students are becoming more proactive in discussions. In order to provide evidence, students must make careful observations of sources, whether textual, visual, or verbal. Students who can make careful observations and use them to support their ideas will have much more to contribute to both face-to-face and online discussions.

Participants established that they were able to maintain their participation in at-home activities for the duration of the study. In fact, as the study continued, they participated more. One factor that may have contributed to this increased participation is that students were able to hold longer discussions towards the end of the semester, which led to a larger number of posts, and they were able to write longer posts, which contributed to a larger number of words written online. This increased participation also demonstrates that students were able to adjust to the flipped classroom model and the digital tools (Edmodo, Simple Mind) that were used throughout the course.

Another point about participation: it appears that using a flipped classroom model with online discussion can provide the opportunity for members who are unable to attend classes to participate in university seminars. Providing lectures online allows these students to follow the content of the course. Participating in online discussion allows them to partake in the knowledge

construction that is a vital part of university seminars. However, it should be kept in mind that even with online discussion, these students could feel isolated from their peers, which was one concern expressed by the participant in this seminar that was studying abroad. This can be especially true if online elements of the seminar are strongly focused on course content, as they were in this program. One way to overcome this would be to have overseas students talk about their overseas experiences in the online discussion. Other members could then give their comments and ask questions about those experiences. Through this interest in their experiences, seminar members can show overseas members their support. This support could lead to a closer relationship between seminar members who cannot physically meet.

One limitation of this study is the small number of participants. Due to the small number of participants, it was impractical to create separate groups in order to provide a control group or to isolate variables in the treatment. Even if such groups were created, the number of participants in each group would have been too small for any significant statistical analysis. Unfortunately, seminars by their nature are small and highly individualistic in that the content and format of seminars is highly dependent on the research interests of the professors that teach them, so it is difficult to gather enough seminar students for significant research. In order to overcome this, research questions raised in this study could be examined with larger classes. Significant results from a larger study can then be reapplied to seminars. However, using larger groups also poses a complication. Previous research has shown that students in larger groups participate in discussion less than those in smaller groups, especially in online discussion (Farrago, 2016). Therefore, for the best results, it would be necessary to gather a large number of small groups to participate in a future study.

There are some interesting questions raised by this study that deserve further investigation. First, which had a greater effect on the improvement of in-class discussion ability: the flipped classroom model or online discussion? Both of these factors increased the amount of discussion that students participated in. The flipped classroom model increased in-class discussion time, and online discussion increased opportunities for discussion outside of class. The results of such a study would prove valuable for curriculum planning as online discussion is much more labor intensive than the at-home activities typically assigned in a flipped classroom. Second, can the improvement of in-class discussion ability be attributed to the development of community? In this study, participant attitudes towards classmates were not measured. Measuring student attitudes towards others in the class, and then comparing that data with transcribed in-class discussions may reveal a link between a sense of community and discussion ability. Third,

improvements in online discussion were noted in this study. However, are these improvements the same as those observed when students participate in face-to-face discussions? If so, it would justify the amount of work required for teachers to run online discussions.

Conclusion

As this study shows, students are able to use the tools of the Digital Age to pursue educational goals in seminars. These tools can allow seminar supervisors to provide a wider range of educational experiences for their students. Additionally, these tools can enable students to have more time to talk about their ideas both in and out of the classroom. With more discussion experience, students will become more confident in expressing their ideas and thoughts, more active as creators of knowledge, and more critical in their thinking, which will better prepare them to take part in the participatory culture of the Digital Age (Jenkins, et al., 2009). Therefore, it is vital that students have the opportunity to gain these experiences in their seminars.

References

- Angeli, C., Valanides, N., & Bonk, C. J. (2003). Communication in a web-based conferencing system: The quality of computer-mediated interactions. *British Journal of Educational Technology*, 34(1) 21-43.
- Bender, T. (2003). *Discussion-based Online Teaching to Enhance Student Learning*. Sterling, VA: Stylus Publishing.
- Bergmann, J., & Sams, A. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. Alexandria, VA: ASCD.
- Carbaugh, E. M., & Doubet, K. J. (2016). *The Differentiated Flipped Classroom: A Practical Guide to Digital Learning*. Thousand Oaks, CA: Corwin.
- Casner-Lotto, J. & Barrington, L. (2006). Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce. Partnership for 21st century skills. Retrieved from <http://files.eric.ed.gov/fulltext/ED519465.pdf>
- DeLozier, S. J., & Rhodes, M. G. (2017). Flipped classrooms: A review of key ideas and recommendations for practice. *Educational Psychology Review* 29(1), 141-151.
- Dennen, V. P. (2005). From message posting to learning dialogues: Factors affecting learner participation in asynchronous discussion. *Distance Education*, 26(1), 127-148.

- Ennis, R. (1998). Is critical thinking culturally biased? *Teaching Philosophy*, 21(1), 15-33.
- Exley, K., & Dennick, R. (2004). *Small Group Teaching: Tutorials, Seminars and Beyond*. London, UK: Routledge.
- Farag, M.A. (2016). Instructor guidelines and group size as moderating factors affecting quality and quantity of online discussion participation, satisfaction and learning. *Journal of Arabic Studies in Education and Psychology*, 72, 419-552.
- Goff, M., & Ackerman, P. L. (1992). Personality-intelligence relations: Assessment of typical intelligence engagement. *Journal of Educational Psychology*, 84(4), 537-552.
- Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-analyses Relating to Achievement*. London, UK: Routledge.
- Hattie, J. (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. London, UK: Routledge.
- Hattie, J., & Yates, G. (2014). *Visible Learning and the Science of How We Learn*. Thousand Oaks, CA: Corwin.
- Jenkins, H., Purushotma, R., Weigel, M., Clinton, K., & Robison, A. J. (2009). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. Cambridge, MA: The MIT Press.
- Kachel, D., Henry, N., & Keller, C. (2005) Making it real online: Distance learning for high school students. *Knowledge Quest*, 34(1), 14-17.
- Kear, K. (2011). *Online and Social Networking Communities: A Best Practice Guide for Educators*. New York, NY: Routledge.
- Lawrence, L. (2017). The role of student-led social media use in group dynamics. *The Language Teacher*, 41(5), 17-22.
- Mehran, P., Mehrasa, A., Koguchi, I, & Takemura, H. (2017). Are Japanese digital natives read for learning English online? A Preliminary study at Osaka University. *International Journal of Education Technology in Higher Education*, 14(8). Retrieved from <https://doi.org/10.1186/s41239-017-0047-0>
- Nakane, I. (2006). Silence and politeness in intercultural communication in university seminars. *Journal of Pragmatics*, 38(11), 1811-1835.
- OECD (2015). *Students, Computers and Learning: Making the Connection*. Paris, FR: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/9789264239555-en>
- Soffel, J. (2016). What are the 21st-century skills every student needs? *World Economic Forum*. Retrieved from <https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students/>
- Sousa, D. A., & Tomlinson, C. A. (2011). *Differentiation and the Brain: How Neuroscience*

Supports the Learner-friendly Classroom. Bloomington, IN: Solution Tree Press.

- Ushioda, E. (2011). Language learning motivation, self and identity: Current theoretical perspectives. *Computer Assisted Language Learning*, 24, 199-210.
- Vosniadou, S. (2001). *How Children Learn*. The International Academy of Education and the International Bureau of Education. Retrieved from <http://unesdoc.unesco.org/images/0012/001254/125456e.pdf#search=%27how+children+learn+by+stella+vosniadou%27>
- Vygotsky, L. S. (1978). *Mind in Society: The Development of High Psychological Processes*. M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.); M. Cole, & M. Lopez-Morillas (Trans.). Cambridge, MA: Harvard University Press.
- Weber, A. (2012). Considerations for social network site (SNS) use in education. *International Journal of Digital Information and Wireless Communications*, 2(4), 37-52.
- Wellman, B. (2001). Physical place and cyberspace: the rise of personalized networking. *International Journal of Urban and Regional Research*, 25(2), 227-252.
- Willis, J. (2011). *A Neurologist Makes the Case for the Video Game Model as a Learning Tool*. Retrieved from <http://www.edutopia.org/blog/video-games-learning-student-engagement-judy-willis>
- Xie, K., DeBacker, T. K., & Ferguson, C. (2006). Extending the traditional classroom through online discussion: The role of student motivation. *Journal of Educational Computing Research*, 34(1), 67-89.
- Zwiers, J., & Crawford, M. (2011). *Academic Conversations: Classroom Talk that Fosters Critical Thinking and Content Understanding*. Portland, ME: Stenhouse Publishers.