Does an Online Flipped Classroom Support Students' Autonomy, Competence, and Relatedness to Maintain their Motivation?: Korean as a Foreign Language Learners in Brunei

Introduction

The popularity of Korean culture is known as "Hallyu," which dictates the current high demand for Korean language learning, with learners of Korean outside of the classroom now on the rise. Many people learn the language independently through YouTube, social media platforms, and self-directed learning apps/websites. The learner's generation that dominates this trend was born after 1996 and is defined as "Generation Z" as having grown up in an "always-on" technological environment, meaning that learning from the Internet is an unavoidable part of their lives.[1] This recent phenomenon has changed the classroom environment, and some of these self-directed language learners exhibit high levels of Korean proficiency and motivation to learn the language. However, this new reality is challenging for Korean as a foreign language (KFL) teachers, who now have to deal with students with prior knowledge of Korean.[2] In a teacher-centred language classroom, the teacher delivers all the content and spends considerable time presenting new grammar patterns alongside their form, meaning, and function (Lee and Yun 2017). Students are often passive listeners to the lecture (Arslan 2020); however, self-directed learners can appear as class disruptors. In other words, due to independent language acquisition, proficiency

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1. Pew Research Center. "Defining Generations: Where Millennials End and Generation Z begins." Accessed November 24, 2021. https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/.

2. A recent research by Ryoo (2020) reported that out of 359 university students in Singapore, approximately 20% were already learning Korean at the beginning of the study; among these, 40.05% learned Korean independently online or using books, and 30.43% had been interested in learning Korean from 14 to 16 years of age.

differences in actual classrooms become far more evident.[3] At the same time, many students fail to reach advanced levels. The primary demotivating factor among beginner learners of Korean was difficulty (e.g., excessive vocabulary, complicated grammar) (Hong 2019) and a sense of unfair competition due to other learners with prior knowledge and a bell-curved evaluation system (Jung 2017). A recent study showed that among Americans, interest in boy band BTS positively correlated with positive outcomes of learning Korean online but did not significantly influence the continuity of learning (Kim 2020).

Diverse proficiency in the classroom and fewer students at higher levels are common challenges in KFL learning outside Korea (Han and Kim 2016; Kim, Han, and Shin 2015). Several empirical studies adopted the flipped classroom method to address these challenges and have confirmed that flipping grammar parts out of classes can improve students' speaking ability and promote interaction among teachers and students (Lee and Yun 2017; Han and Kim 2016). In recent years, flipped classroom method has gained significant momentum in language education, especially foreign language education and an increase in publications (Jiang et al. 2020; Arslan 2020) in recent systematic reviews have identified the effectiveness of flipped classroom method in language classrooms. The benefits include: improving language skills, increasing motivation, and encouraging students to be more active and positive (Arslan 2020). However, to measure educational effectiveness, more evidence regarding such outcomes is required (Akçayır and Akçayır 2018; Arslan 2020; Musa et al. 2021). Additionally, although many studies have identified the efficiency of the flipped classroom model, little theoretical analysis has been conducted regarding whether the flipped classroom method enhances students' motivation.

Moreover, since the COVID-19 pandemic disrupted higher education, flipped classrooms, a technology-based method, became the predominant form of learning (Collado-Valero et al. 2021; Divjak et al. 2022). Most advantages of flipped classrooms were related to the flexible timing for students' learning (Divjak et al. 2022), and improving students' learning, attention, and evaluation of courses (Tao et al. 2020). However, some issues such as inequality in access to technology or the Internet and dissatisfaction with synchronous online classes were continually reported as challenges (Kathy et al. 2013; Akçayır and Akçayır

2018; Arslan 2020; Tao et al. 2020; Musa et al. 2021). Moreover, it is necessary to study whether the main advantages of flipped learning model are available in an online environment to implement the flipped classroom method online. Additionally, the role of technology in this method needs to be further studied (Jiang et al. 2020). Furthermore, how the students adapt and maintain their motivation and effectiveness when the class is converted into an online class should be examined.

In summary, this study focuses on whether flipped classroom method maintains students' motivation and supports their needs to learn Korean. All the classes in this study were conducted online because of the second wave of the COVID-19 pandemic in Brunei; this study examined how students adapted to a classroom flipped entirely online using technology. This study aimed to address the following research questions:

> 1. Are student-teacher interaction and peer tutoring using digital devices still possible in a classroom flipped entirely online?
> 2. Does an online flipped classroom sufficiently support students' basic needs for autonomy, competence, and relatedness to maintain their motivation?

Literature Review
Flipped Classroom and Self-Determination Theory

A flipped classroom is a pedagogical approach in which students study information-based learning resources such as pre-recorded video lectures before the class and "spend the in-class time interacting with their peers in the higher-order tasks" (Jiang et al. 2020, 3). In general, the pedagogical contribution of the flipped classroom is its flexibility, which allows students to study at their own pace, time, and space. Students are required to complete pre- or post-class activities to fully benefit from in-class work (Abeysekera and Dawson 2015). At the same time, the majority of flipped classroom challenges are also related to out-of-class activities, such as inadequate student preparation before class (Akçayır and Akçayır 2018). In this regard, some have suggested training sessions to help foster the sense of responsibility (Yang, Yin, and Wang 2018) and the need for well-structured course design. In other words, pre-class/out-

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3. One experimental study confirmed that learners exposed to Korean dramas and films performed better in Korean speaking and fluency (Kim and Choi 2017).

of-class and in-class should be interconnected not to burden students (Han and Kim 2016; Kim and Kim 2017; Mai and Liu 2021).

Additionally, researchers have pointed out the teacher's role; the teacher in the classroom should be there to help students and not just to deliver information (Bergmann and Sams 2012, 17). Teachers' expertise and professional awareness in course design are vital in determining the content provided outside and inside the classroom (Jiang et al. 2020). All these discussions indicate that flipped classroom approach cannot succeed merely by changing the order of the existing traditional teaching method. As one study pointed out, educators should "involve students in the rationale for changes to pedagogy" to "make sure they understand exactly what is expected of them and why" (Raine and Gretton, 2014, 24).

Moreover, "technical and technological challenges, which include developing high-quality out-of-class materials, technology accessibility, and technology competency, also may cause problems in flipped classroom" (Akçayır and Akçayır 2018, 341). Jiang et al. (2020) looked at the role of technology in the flipped classroom in language education, where the technical part is limited only to pre-class content delivery and preparedness checking, which could be led to managing inadequate learners, improving language, and reducing teachers' time-spending on feedback. In this regard, many researchers have asserted that teachers' technological skills are essential in this method and that "posting lectures online requires teachers to have technological skills, especially while dealing with young students who are entirely professional in technology" (Alkhalidi 2020, 3). The author argued that regardless of a student's level of proficiency, they can continue learning outside the classroom because even students with low proficiency may struggle with the language but not with technology. Overall, language learning is not restricted to the classroom; therefore, the use of technology should be expanded, and the role of technology in flipped language classrooms needs to be studied from a holistic perspective (Jiang et al. 2020; Alkhalidi 2020).

Considering that flipped classroom method requires autonomous motivation from students, flipped classroom environment can promote "a sense of initiative and ownership in one's actions" among students (Ryan and Deci 2020, 1), the undertaking of substantial out-of-class work and the motivation to complete such work independently (Abeysekera and Dawson 2015). Abeysekera and Dawson (2015) initiated flipped classroom theorizing through self-determination theory (SDT), a theory of human motivation first developed by Deci and Ryan in 1985. SDT assumes that humans are inherently curious about their environment and interested in learning and developing their knowledge (Niemiec and Ryan 2009). The critical concept of SDT is that it differentiates motivation based on the reasons or goals that give rise to action. For instance, intrinsic motivation refers to doing something interesting or enjoyable (Ryan and Deci 2020). In contrast, extrinsic motivation involves reasons separate from the activity itself (e.g., passing a course, the approval of others, the perceived relevance, or value of learning) (Hartnett et al. 2014). Another crucial aspect of SDT is the basic psychological needs for autonomy, competence, and relatedness and how these needs can be supported. Autonomy refers to a sense of initiative and ownership in one's actions, competence refers to a feeling of mastery, and relatedness refers to a sense of belonging and connection (Ryan and Deci 2020).

First, students experience autonomy when they can willingly dedicate time and attention to their studies (Muñoz-Restrepo, Ramirez, and Gaviria 2020). A key aspect of promoting learner autonomy is teachers providing students with a meaningful rationale for a learning activity's usefulness (Niemiec and Ryan 2009). This idea supports the essential nature of training sessions, as indicated by previous studies.

Regarding competence, this need is best satisfied within well-structured environments that afford optimal challenges, positive feedback, and opportunities for growth (Ryan and Deci 2020). When learning a language, students tend to be more motivated when provided with the necessary guidance to perform learning activities (Muñoz-Restrepo, Ramirez, and Gaviria 2020). Flipped classroom technique develops student understanding and background knowledge before class (Alkhalidi 2020), and this pre-class process, in turn, helps students participate more actively and perceive mastery.

Finally, flipped classroom approach is relatively likely to provide a learning environment that encourages students to establish small learning groups, increasing the level of peer-to-peer relatedness they experience (Abeysekera and Dawson 2015) and promoting opportunities for students–instructor interaction (Akçayır and Akçayır 2018). According to SDT, relatedness in the classroom is deeply associated with students feeling that their teacher genuinely likes, respects, and values them (Niemiec and Ryan 2009). Such relatedness can be promoted by appropriate feedback from teachers.

Method
Course Design

The course in the present study was originally designed as a traditional flipped classroom, which was converted entirely online using various online tools to maintain teaching and learning due to the lockdown during the COVID-19 pandemic.

Textbook

Instead of using textbooks published in Korea, which target full-time language learners in Korea who are focused on Korean culture and not suitable for university students in Brunei, the author of this present study designed all the course content and developed teaching materials.

Pre-recorded Video

The first video was about using the textbook, constituting a commitment between the teacher and students. The video explains how to study the materials, in what order, and what to do before attending each class. Every unit has checkpoints to remind students what to do before and after class. Pre-recorded videos were created by the author using Explain Everything, a digital whiteboard app, and then uploaded to YouTube. The video content was designed to be similar to a classroom setting, with images and illustrations used for teaching purposes. The idea of using YouTube, a medium familiar to students, was that students would experience few or no technical problems. All the learning resources, including grammar-instruction videos, were uploaded to Canvas, the university's learning management system.

In-class and After-class

The assignment included grammar checking sheets, which were to be completed after watching the video but before the class. The lecturer was to check this assignment at the beginning of the class. From the student's perspective, the burden of this assignment was relatively minor because the assignment reduced the number of contact hours from 4 to 3, thereby motivating the students

to complete the pre-class work. Classroom activities as pair/group work were conducted synchronously using breakout rooms/presentations in MS Teams Meet and filled in pair work records after the class. These completed activities were sent to their teacher on WhatsApp to receive feedback. Students completed listening quizzes on Canvas, and their writing assignments were uploaded to Canvas.

Participant, Questionnaire, and Data Analysis

This study's module was the 2021-2022 Korean Level 2 breadth module. The participants included 39 students, 22 continuing from Level 1 (56 contact hours) and 17 who passed a placement test and could skip Level 1. The survey was conducted after completing 14 weeks of the course and took the form of an online questionnaire distributed through Survey Monkey from 18 to 21 November 2021. The questionnaire was given to 38 students (1 was unavailable), of whom 35 voluntarily completed it; three students did not respond. The questionnaires consisted of yes/no, multiple-choice questions, one 6-point Likert scale question ranging from 1 (never) to 6 (always), and nine 5-point Likert scale questions ranging from 1 (strongly disagree) to 5 (strongly agree), and one open-ended question.

Additionally, the questionnaire asked for demographic information (e.g., birth year, Korean language learning experience, motivation for taking the course). Moreover, the students were asked about their overall experience of pre-class preparation, in-class participation, their interactions with other students and the teacher outside of class, class effectiveness, the course structure, and whether they studied independently and were motivated to learn. The open-ended question asked about motivating and demotivating factors in this course. The obtained research data were analysed using descriptive statistics to obtain frequencies, means, and standard deviations and to describe trends.

Results
Demographic Information and Motivation for Taking the Module

Of the 35 student respondents in this study, 26 (74.3%) answered that they had previous experiences learning Korean before enrolling in the study module.

Only nine started learning Korean from scratch at the university. Of the aforementioned 26 students, 15 (42.9%) started learning Korean before the age of 16. The most common learning resource was YouTube (69.2%), followed by language learning mobile apps and websites (50.0%) and K-pop/K-drama/entertainment programs (26.9%). Additionally, all the respondents were born between 1998 and 2002 (see Table 1).

Regarding the students' motivation for taking the module, most were interested in improving their knowledge (94.3%), followed by fun/enjoyment (85.7%), cultural interest (80.0%), and travel (77.1%). Instrumental reasons, such as fulfilling the breadth module requirement (34.3%) and higher CGPA (25.7%), were less influential motivating factors while getting a Minor in Korean[4] (40%) and preparing to go to Korea as an exchange student[5] (65.7%) were more influential reasons (see Table 2). Three students commented: "To be able to watch Korean dramas without looking at the subtitles." Open-ended comments supported the quantitative finding that all 20 students expressed an intrinsic motivation and strong willingness to learn Korean. By contrast, students who were extrinsically motivated were relatively few in number.

> My motivation to keep studying originated from K-dramas and my curiosity to learn more about Korean.

> I was mostly motivated by how interesting it was when the grammar was applied to daily conversations. It is always interesting to see how English and Korean work differently in terms of sentence structure!

> What motivates me to keep studying is definitely first grades and second future personal use—I'd like to be fluent so that I can travel to Korea comfortably and with ease.

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4. After students have obtained 24 modular credits from Korean modules, minors are awarded, which motivates students to take the module.
5. Universiti Brunei Darussalam makes it compulsory for its students to leave the university during their third year of study to undergo a mandatory year out of the university called Discovery Year. Having a chance to go to Korea motivates the student to take the Korean module.

Table 1. Demographics Information

Category		N=35	Percent (%)
In what year were you born?	1998	1	2.9
	1999	4	11.4
	2000	11	31.4
	2001	12	34.3
	2002	7	20.0
How old were you when you started learning Korean?	before 12 years old	4	11.4
	13 years old	6	17.1
	14 years old	1	2.9
	15 years old	1	2.9
	16 years old	3	8.6
	17 years old	5	14.3
	after 18 years old	15	42.9
Have you ever learned Korean before taking the Korean module in UBD?	No		25.7
	Yes		74.3
		N=26	Percent of cases (%)
(Among respondents who have previous learning experience) How did you learn Korean?	K-pop, drama, entertainment program	7	26.9
	YouTube	18	69.2
	Language learning mobile apps/ websites	13	50.0
	With a teacher from other institutions	2	7.7

Table 2. Motivation for Taking the Module

Motivation for taking the module	N=35	Percent of cases (%)
Improving Korean knowledge	33	94.3
Interest in Korean Culture	28	80.0
For fun/enjoyment	30	85.7
To fulfil the breadth module requirement	12	34.3

Higher CGPA	9	25.7
Minor in Korean	14	40.0
Prepare to go to Korea	23	65.7
For my job in the future	4	11.4
Travel to Korea	27	77.1
Other	4	11.4

Pre-class Preparation

Of all the student respondents, 42.9% answered that they always watched the pre-class videos, whereas 28.6% answered they watched the pre-class videos most of the time. 5 students answered that they sometimes watched the videos (see Table 3).

Table 3. Pre-recorded Video Watching

Questions	Scale	N=35	Percent (%)	Mean	SD
I participated in class after studying pre-recorded video lectures	Sometimes	5	14.3	5.00	1.08
	Often	5	14.3		
	Most of the times	10	28.6		
	Always	15	42.9		
	Rarely	0	0.0		
	Never	0	0.0		

Regarding the amount of time spent studying these videos, 40.0% of students studied the videos for 1 hour, whereas 25.7% of students studied the videos for 2 hours (see Table 4). Next, the students employed a variety of learning strategies, including watching, taking notes, pausing, rewinding, and repeating while watching the videos. They commented on their learning strategies, mentioning, for example, "pause and practice pronunciation," "Googling how to use the grammar in more detail when some grammar is confusing," "watching other learning courses on YouTube," and "trying to follow the pronunciation" (Figure 1).

Table 4. Pre-class Spending Time

		N=35	Percent (%)
How long have you spent time studying pre-recorded video lectures for each unit?	less than 1 hour	10	28.6
	1 hour	14	40.0
	2 hour	9	25.7
	3 hour	1	2.9
	more than 3 hour	1	2.9
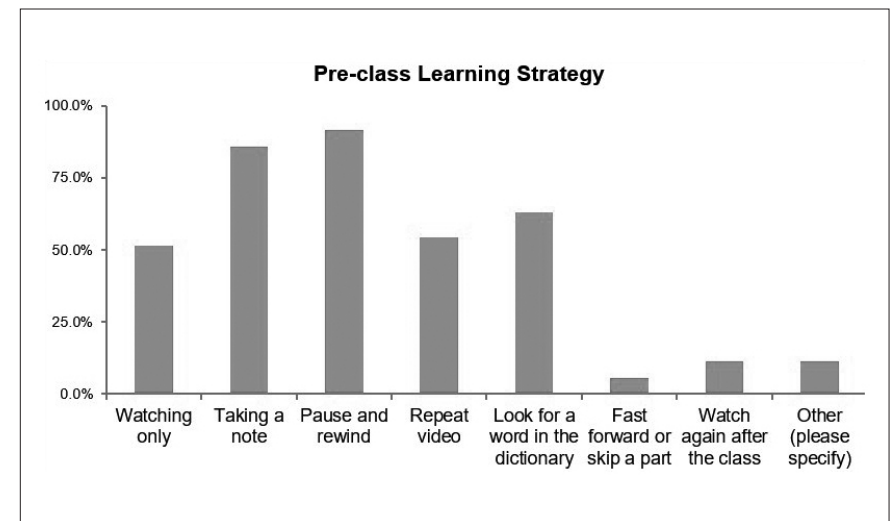
Figure 1. Pre-class Learning Strategy

More than 90% of the student respondents answered the question regarding whether studying pre-recorded videos before class made it easier to understand the course content; 62.9% strongly agreed and 31.4% agreed. Regarding the question, if studying pre-recorded videos made them confident to participate in class activity, 48.6% strongly agreed and 37.1% agreed. However, more than 68% of the respondents agreed that although they studied pre-recorded videos, they often felt their Korean ability was inadequate compared to other students during class (see Table 5).

Table 5. Pre-class Preparation and In-class Participation

Questions	Scale	N=35	Percent (%)	Mean	SD
Studying pre-recorded videos before the class makes it easier to understand the course content.	Strongly disagree	0	0.0	4.57	0.61
	Disagree	0	0.0		
	Not agree or disagree	2	5.7		
	Agree	11	31.4		
	Strongly agree	12	62.9		
Studying pre-recorded videos makes me confident to participate in class activity.	Strongly disagree	0	0.0	4.31	0.79
	Disagree	1	2.9		
	Not agree or disagree	4	11.4		
	Agree	13	37.1		
	Strongly agree	17	48.6		
I studied pre-recorded videos, but I often feel my Korean ability is inadequate compared to other students during class.	Strongly disagree	1	2.9	3.77	1.00
	Disagree	3	8.6		
	Not agree or disagree	7	20.0		
	Agree	16	45.7		
	Strongly agree	8	22.9		

Peer Tutoring and Teacher's Feedback

More than 80% of the student respondents answered "Strongly agree" or "Agree" regarding whether they had learned from other students through pair or group work or through watching other students' presentations (see Table 6). Open-ended comments supported the quantitative finding that students expressed the following: "Having to do pair work or group work has always motivated me to keep studying Korean" and "Seeing my peers do well in Korean class motivated me to learn, especially when working in pairs, as we get to improve each other's Korean."

Although students' comments are positive, this factor seemed either motivating or demotivating, as illustrated in the following comments: "I feel demotivated when I don't understand some of the words that others know" and "Korean is one of my favorite modules, and seeing my peers do well in

Korean class motivates me to do well, too." Additionally, 37% of the student respondents described pair work as a challenging factor (see Tables 8 and 9). Students said:

> When a partner or team member does not prepare, this is a problem that is consistently raised in other subjects as well.

> It is difficult to keep up with the pair work since it is group work, and we need to find time to do the recording task as well as the video assignment.

Furthermore, when asked whether they had received appropriate feedback from their teacher, 100% of students answered "yes" (see Table 6). Eight students mentioned that the lecturer had motivated them to study.

> My motivation was definitely driven by the teacher and the class atmosphere.

> The lecturer really made an effort to make the class interesting by giving useful feedback and encouraging advice and preparing useful study materials.

Table 6. Peer Tutoring and Teachers' Feedback

Questions	Scale	N=35	Percent (%)	Mean	SD
I have learned from other students through pair/group work and watching other students' assignments.	Strongly disagree	0	0.0	4.02	0.78
	Disagree	2	5.7		
	Not agree or disagree	4	11.4		
	Agree	20	57.1		
	Strongly agree	9	25.7		
I had appropriate feedback when I needed it from the teacher.	Strongly disagree	0	0.0	4.57	0.50
	Disagree	0	0.0		
	Not agree or disagree	0	0.0		
	Agree	15	42.9		
	Strongly agree	20	57.1		

Students' Overall Experience of a Flipped Classroom

More than 90% of students answered that their Korean language skills had improved and that they were more motivated to learn Korean and 65.8% of students responded that they had studied autonomously this semester. Additionally, more than 97% of students answered that this course was well structured to improve their Korean (see Table 7). Many students mentioned that the well-structured course and teaching materials effectively assisted their learning. However, few students mentioned their heavy workload.

> I like that the online classroom for this module has been very organized very thoroughly.

> I think the topics of the courses were interesting and fun.

> Sometimes there were too many (4-5) new grammar to learn in certain sessions.

> What demotivates me is when there is too much work, and my mindset doesn't believe I can do it.

Most student respondents answered that learning grammar in advance is an effective way (42.9% of students strongly agreed; 45.7% of students agreed). More than 90% of students strongly agreed or agreed that their Korean improved, and more were motivated to learn Korean through this course. However, many preferred traditional teaching methods where teachers explain grammar in the classroom (28.6% of students strongly agreed; 40% of students agreed). Students appreciated the materials and the course (see Table 7).

Table 7. Students' Overall Experiences of the Flipped Classroom

Questions	Scale	N=35	Percent (%)	Mean	SD
I think learning grammar before class is an effective way.	Strongly disagree	0	0.0	4.31	0.67
	Disagree	0	0.0		
	Not agree or disagree	4	11.4		
	Agree	16	45.7		
	Strongly agree	15	42.9		
I prefer traditional teaching in which the teacher explains new grammar in class.	Strongly disagree	0	0.0	3.97	0.78
	Disagree	0	2.9		
	Not agree or disagree	11	31.4		
	Agree	14	40.0		
	Strongly agree	10	28.6		
I studied self-directed autonomously in this course.	Strongly disagree	0	0.0	3.65	0.59
	Disagree	1	2.9		
	Not agree or disagree	11	21.4		
	Agree	22	62.9		
	Strongly agree	1	2.9		
My Korean improved, and I am more motivated to learn Korean through this course.	Strongly disagree	1	2.9	4.28	0.82
	Disagree	0	0.0		
	Not agree or disagree	2	5.7		
	Agree	17	48.6		
	Strongly agree	15	42.9		
This course (pre-class / in-class / after-class / teaching Material) are well structured for students to improve Korean.	Strongly disagree	0	0.0	4.42	0.55
	Disagree	0	0.0		
	Not agree or disagree	1	2.9		
	Agree	18	51.4		
	Strongly agree	16	45.7		

Additionally, when asked about the "biggest challenges/difficulties this semester," more than 70% of the student respondents mentioned technological

aspects, such as Internet connection. Pair work after the class (for 37.2% of students), online class (for 25.7% of students), and studying pre-recorded video (for 22.9% of students) were the other main challenging factors. Only two students answered that the course content was complex (see Table 8). Furthermore, eighteen students mentioned in the open-ended questionnaire the "online class" as a demotivating factor, while a few students perceived some benefits of the online class: "Sometimes our online classes were recorded; hence, it was great that we could re-visit and re-experience the online class for anything that we missed." However, the online class was challenging for most of the respondents, many of whom did not like the class because of "less interaction with others" and "the Internet connection," and as it was "hard to ask questions." They preferred physical classes and said: "I think work given was overload, but I get it why because if it is in physical class, the thing we need to do is handling the paperwork instead of the recording notes. We have to record everything for assignments" (see Table 9).

Table 8. Challenging/Difficult Things

	N=35	Percent of cases (%)
Studying pre-recorded videos on my own	8	22.9
Online class	9	25.7
Course contents	2	5.7
Pair work after the class	13	37.1
Assignments and quiz	6	17.1
Oral assessments	7	20.0
Internet or technical problem	25	71.4

Table 9. Summary of Common Responses to Open-ended Questions

Overall, can you describe your experience of an entirely online flipped classroom? What motivated you to study?	Number of mentions (total number of students 35)
Class environment (teacher's support, feedback, interesting class and materials, teacher, and the class atmosphere)	15
Interest learning language (interests in learning Korean, improving my Korean/grammar, satisfying feeling of acquiring new knowledge, the curiosity of wanting to know more about the Korean language, and communicate in Korean)	15
Interacting with teachers and peers (sharing my content and watching classmates' content, interacting with lecturer and classmates, and pair work/group work)	6
Getting able to score or Exchange program in Korea	5
Revisit recorded online class	2
Learning new skills (such as Flipgrid)	1
Overall, can you describe your experience of an entirely online flipped classroom? What demotivated you to stop?	Number of mentions (total number of students 35)
Online class (managing time, no interactions with other students, challenge to focus and be motivated during online learning, didn't know other classmates, studying at home, difficult to discuss with others, boring, hard to ask questions, and shy in answering questions)	20
Workload (many grammars, difficult to manage my time to understand each grammar fully, and too much work to do due to online class)	5
Technical issue (the Internet connection, technical problem, and wi-fi connection problem)	4
Pair work (hassle, finding time to do the recording task, and doing the video assignment)	3
Insecurity of my content's creativity	1

Discussions

RQ 1. *"Are student-teacher interaction and peer tutoring using digital devices still possible in a classroom flipped entirely online?"*

To address research question 1, referring to students feeling connected to their classmates and the teacher, it should be discussed whether relatedness using digital devices is still functioning in an entirely online flipped classroom.

First, this flipped classroom method already relies on technology; however, when conducting the class online, some students had technical problems, such as wi-fi and microphone issues, and thus could not participate actively. Secondly, pair work, another essential aspect of a flipped classroom, was replaced with recorded assignments after the class so that the teacher accurately checked

the students' speaking skills and provided feedback. In this regard, most of the student respondents agreed they had learned from other students through pair/group work and received appropriate feedback from the teacher. In addition, students' increasing engagement was noticeable; two oral assessments used Flipgrid, a video discussion platform, while students watched other students' videos and left comments. In a traditional class, students' presentations are one-off, so they rarely double-check their or other students' presentations, give feedback, or comment. Despite all these advantages of using digital tools, activities in online flipped classrooms, including pair work, are conducted synchronous online or out of class seem heavier than in a physical class while all the activities happen in class in a traditional flipped classroom. This finding is in line with the finding that reported investing time and preparation in teachers and students as challenging (Divjak et al. 2022). However, the same study also reported that one of the advantages of the online flipped classroom is the development of twenty-first-century skills and enhancing the quality of student-teacher interactions. These findings are not significantly different from the present study, in which some students showed excellent editing and presentation skills; in particular, when a technical problem arose, the student in question immediately reported the error and shared the helpful information or useful programs they had used for other students. Such teacher-student interaction reminds us that the teacher is no longer the only leader in the class but becoming more facilitator. Additionally, as a student mentioned in an open-ended question, "it was fun to experience a lot of new things like Flipgrid." Flipped classroom methodology allows students to develop digital skills. Furthermore, interaction with the teacher through mobile devices was helpful and kept the students engaged. It is an important finding because it indicates that peer-tutoring and teacher-student relatedness using devices are still functioning and could be more suitable for the present study generation.

To sum up, since the beginning of the COVID-19 pandemic, language education, including the KFL field, has undergone a marked change. Using various new devices this semester increased students' engagement, and the students in the present study adapted well and evidenced that technology is now an advantage rather than a burden. Online teaching that uses various devices improves students' engagement and interactions with their peers and teachers. However, pair work and assignment using various digital tools outside class was a burden to the students.

RQ 2. Does an online flipped classroom sufficiently support students' basic needs for autonomy, competence, and relatedness to maintain their motivation?

First, on quantitative and open-ended questions, most students exhibited a strong will to improve their Korean knowledge. They enjoyed learning Korean because of their curiosity to acquire new knowledge and "the enjoyment of the activity itself, rather than its instrumental value" (Ryan and Deci 2000, 60). This finding is consistent with the earlier study by Hong (2019), which confirmed that beginners of Korean language learners tend to be highly intrinsically motivated in the early stages of learning.

Secondly, one of the aims of this study was to see the "flipped" grammar parts as an asynchronous video format for pre-class activity are efficient way and makes students learn autonomously and give them responsibility for learning. In addition, it was expected that this method would be as efficient as the traditional lecture style as long as the structure (before-during-after the class) is well organized. The quantitative survey result revealed that learning grammar in advance and a well-structured course offered optimal challenges and satisfied the students with respect to their level of competence. Most students attempted to familiarize themselves with the class content before each class in various ways. They participated autonomously and were dedicated to improving their knowledge of Korean through the course. This finding confirmed those of previous studies, namely that pre-class activity gives students the ability to take charge of their learning progress, ownership of the process of learning, and control over their learning style and pace (Pavanelli 2018; Yang, Yin, and Wang 2018; Goedhart et al. 2019; Arslan 2020) and gaining confidence in language learning beyond the classroom (Arslan 2020).

Moreover, from the lens of self-determination theory, this result can be seen as flipped classroom setting helped maintain students' motivation to learn. In other words, when an autonomous supportive setting and affordable competence are essential to maintain intrinsic motivation (Niemiec and Ryan 2009), the student who chooses to undertake out-of-class work and masters that work will be more intrinsically motivated (Abeysekera and Dawson 2015). In addition, the students in this study appreciated textbooks with appropriate example sentences, suitable activities, and topics related to their lives. Given that linguistic difficulty was a demotivating factor in learning Korean, the

flipped classroom method seemed appropriate for Korean language education. Furthermore, this study's results confirmed how autonomy and competence are related.

In sum, from the finding, we can assume that KFL learners in Brunei in this study were intrinsically motivated according to SDT theory and flipped classroom, which needs autonomous motivation and suits them. This method supported and maintained students' motivation and autonomous behaviour. Furthermore, students' independent learning experience seemed helpful for pre-class preparation on their own; however, it needs further investigation.

Next, despite positive feedback on pre-class preparation, over 68% of respondents often felt their Korean ability was inadequate compared with other students during class and preferred traditional teaching methods where teachers explain grammar in the classroom. In this regard, the following critical point of a flipped classroom, which Bergmann and Sams mentioned in their book, should be considered: "to help students come to class with appropriate questions to address their misconceptions" (Bergmann and Sams 2012, 13-14). It was solving/inquiring about the misunderstanding of self-study through in-class activity or the lecturer. However, the data indicates whether the online class in this study's entirely online flipped learning environment satisfied this critical process of a flipped classroom. In other words, students come to the class with questions and inquire about being solved in class with the lecturer or peers, whether it could be functioning in the synchronous online class. In reality, only a few students asked questions, and low-proficiency students remained largely silent during online learning.

> Throughout the semester, I also felt demotivated because of my lack of understanding of Korean. Most of the students knew Korean well. Especially during class, I didn't like to be called upon because I didn't understand most of the class.

> In my opinion, language must be taught in a physical class so that the students can completely understand what the lecturer is trying to teach. However, because of the pandemic, we don't really have that option now.

Some students like those above have felt completely isolated and demotivated to study during the COVID-19 period. Despite the synchronous online class being considered the most similar to traditional face-to-face teaching

because of the possibility of real-time interactions (Divjak et al. 2022), we can assume that it was difficult to reach the teacher and peers to solve the inquiry in the synchronous online class. Particularly, in the classroom setting, which was suddenly changed to entirely online without any physical contact, some students who struggled with learning seemed to face challenges and not get enough support from the teacher. This finding is in line with one study, which pointed out that relatedness was distinct from the strong inter-connections between autonomy and competence in a massive open online courses (MOOCs) context (Durksen et al. 2016). Those authors interpreted these findings as follows: "meeting the need of relatedness through computer-mediated interactions can be more difficult than meeting the combined needs of autonomy and competence" (Durksen et al. 2016, 16). Another recent study examined sudden environmental change (lockdown), and problems in communication with the teacher could lead to a loss of academic motivation or undermine it (Kitova and Troshkin 2020). Studies conducted during COVID-19 reported similar issues, such as communication in synchronous class, student dissatisfaction with online learning, and communication problems with teachers (Tao et al. 2020; Musa et al. 2021; Divjak et al. 2022).

Overall, virtual communication without physical interaction in this study was not satisfying students who expected relatedness from the course. This issue will be a critical point in how we design in-class more active and engaged learning for a successful, entirely online flipped classroom (Musa et al. 2021) because the most significant advantage of the flipped classroom is to make class time more efficiently than in traditional classrooms (Akçayır and Akçayır 2018). Additionally, it could be argued whether a fully online program can be considered a flipped classroom as there is no face-to-face interaction (Jiang et al. 2020).

In conclusion, the findings indicated that flipped classroom method positively affected students' learning engagement and attitude toward autonomy. Additionally, watching videos before classes were helpful for learning and extended the students' learning time. However, low-proficiency learners struggled to adapt to the course, especially in synchronous learning, where students experienced difficulties interacting with the teacher and peers. Moreover, maintaining a strong Internet connection was sometimes a hassle in the synchronous online class. As Abeysekera and Dawson (2015) hypothesized using SDT, flipped classroom improved student motivation if it created a sense

of competence, autonomy, and relatedness; this study's results showed that flipped classrooms did motivate students and adjust their level of competence; however, entirely online flipped classrooms did not satisfy students' need, relatedness.

Conclusion

This study analysed whether the entirely online flipped classroom teaching method motivates students and supports their needs (autonomy, competence, and relatedness) to learn Korean. This study also examined whether flipped classroom instructional model can be implemented to address the common issues in Korean as a foreign language, in which previous learning experienced students in one classroom rather than start from scratch and many motivated students in the beginner's level, but the learning does not continue to an advanced level. More than anything else, in this study, students strongly expressed their intellectual curiosity about language learning, and it seems to have worked well despite the online classroom environment without face-to-face class. As SDT posits that intrinsic motivation is sustained by satisfying the basic psychological needs for autonomy and competence (Niemiec et el. 2009), flipped classroom method seems to satisfy their intrinsic curiosity and to encourage and enhance their initial interest and motivation.

Furthermore, this study focused on students' experiences to see if the benefits of the traditional flipped classroom method are still functioning effectively in the online flipped classroom, especially in a situation where the whole class had changed to fully online due to COVID-19. This study found that student interaction and peer tutoring were still able to function in a classroom flipped entirely online. In particular, pair work using mobile devices and oral exams using Flipgrid increased students' learning time and interaction with peers and suited the current generation. Furthermore, interaction with the teacher through mobile devices was helpful and kept the students engaged. The students generally attempted to adapt to the online classes; however, they still preferred face-to-face classes because of the difficulties of interacting with other students and the teacher in the synchronous online class. An entirely online flipped classroom did not satisfy students' needs or sudden change dissatisfied students and negatively affected students' motivation. This study showed that

the online flipped classroom method should be designed differently from the traditional flipped classroom.

As mentioned in the introduction, this study revealed that students learning Korean independently outside the classroom were noticeable. Almost 75% of students in this study had previous experiences learning Korean before enrolling in the study module with starting learning Korean before the age of 16, and the most common learning resource was YouTube. We can assume that the trend in which learners have previous learning experience before enrolling in the university course will increase.

Regarding future research, personalized learning or different levels of the pre-recorded video should be considered to achieve optimal challenges for learners of all levels for pre-class self-directed learning. Additionally, how online flipped language classrooms should be designed from a holistic perspective needs to be further studied. Furthermore, the data could be compared with the data that employ in-person traditional lecture modes with the same questionnaire.

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