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The Investigation of Flipped Classrooms on Students' Speaking Performance and Self-regulated Learning

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ABSTRACT

Over the years, few studies have investigated the implementation of flipped classrooms focusing on students' speaking performance and self-regulated learning (SRL). However, none of these studies was carried out using rich statistical and qualitative data to study both variables at the same time. This study, therefore, aims to (1) examine the effects of flipped classrooms with various technology tools on students' speaking performance and SRL and (2) explore how students develop their SRL during the implementation process. The explanatory sequential mixed-method approach was used to obtain data from 53 tenth grade students, with 27 in the experimental group and 26 in the control group by employing a quasi-experimental design and an interview method. The result showed that the students taught by flipped classrooms had better speaking and SRL scores than their counterparts in the control group. In addition, the students developed their SRL through three phases, namely *forethought*, *performance-control*, and *self-reflection*, with four possible implications for English Language Teaching.

Keywords: Flipped classrooms, flipped classrooms in speaking, self-regulated learning, speaking performance

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INTRODUCTION

The advent of technology has made it possible to implement flipped classrooms in English Language Teaching (ELT) field, including in teaching speaking skills. Technology is believed to support foreign language learning (Golonka et al., 2014) as it provides various platforms that support

learning and more time to do interactive activities during class time (Bowles et al., 2015). Along with the success of Bergmann and Sams' (2012) study as the pioneer, the implementations of flipped classrooms have been proliferating. Thus, flipped classrooms are one of the relevant topics to be discussed.

Flipped Classrooms

Flipped classrooms are the recent instructional approach where the teacher creates teaching presentations or materials to be reviewed before coming to class, and Face-to-face (F2F) time is used for collaborative activities to improve students' mastery of the materials (Mehring & Leis, 2018). Reviewing material activities in flipped classrooms promotes the opportunity for the students to view and reread the content (Yeo, 2018). Accordingly, Yeo (2018) claimed that students would be more confident when coming to class and ready to do further activities to explore the content. With that being said, flipped classrooms are the instructional approach that might fit with the current education system that values a student-centered approach.

The adaptation of technology has made it possible to implement flipped classrooms to be more innovative and interactive than the earlier version of this approach (Mehring & Leis, 2018). The initial flipped classrooms implementation required teachers to record their presentations as modeled by Bergmann and Sams (2012). Up to the present time, flipped classrooms' materials have evolved and not limited to sitcom videos (Hung, 2017), *TED-ed* (Adnan, 2017; Hung, 2018), and books (Lockwood, 2014). These materials are also supported by other technology tools such as *Telegram* (Adnan, 2017; Amiryousefi, 2019), *Line* (Hsieh et al., 2017) and *Facebook* (Lin & Hwang, 2018). Accordingly, flipped classrooms have evolved into a technology-based instructional approach.

Even though flipped classrooms have been proliferating in ELT, little attention is given to its implementation in teaching speaking skills (Amiryousefi, 2019), leading to more opportunity for investigations. To date, only a few studies have devoted efforts to seek the effects of flipped classrooms on speaking (Hung, 2017; Köroglu, & Çakir, 2017; Lin & Hwang, 2018). Hung (2017) researched the implementation of flipped classrooms in a university in Taiwan in his experimental study, recruiting 43 students to seek the effect of this approach on students' oral performance. By employing an *independent t-test*, Hung then reported that students in the experimental group had better oral performance than their counterparts in the control group. In the same vein, Köroglu and Çakir (2017) recruited 58 students to seek the effect of flipped classrooms on speaking performance. They implemented *Mann-Whitney U* analysis and reported that the students in the experimental group outperformed the students in the control group. Later on, Lin and Hwang (2018) researched 33 students in the experimental group and 16 in the control group to examine the effect of flipped classrooms on students' speaking performance. Using *one-way ANCOVA* analysis, they reported that

students outperformed their counterparts in the control group in speaking performance. Even though Lin and Hwang argued that flipped classrooms help students to be more responsible for their learning, these previous studies gave no attention to investigate students' self-regulated learning.

Self-regulated Learning

The responsibility of one's own learning is often referred to as Self-regulated Learning (SRL), which is defined as the degree to which students are active and responsible for their own learning process (Zimmerman, 2008). In line with this statement, Nilson (2013) added SRL as a total involvement of multiple parts of the brain that were not cognitive. SRL is long believed to be guided by three aspects, such as metacognition, strategic action, and motivation to learn (Perry et al., 2006; Zimmerman, 2001). In earlier years of SRL discussions, Zimmerman (1998) proposed three phases of SRL that involved *forethought* (the strategic processes before the learning process happens), *performance control* (the strategic processes to monitor learning during the learning process), and *self-reflection* (the strategic processes to evaluate the outcomes after the learning process). Moreover, there are some concerns regarding the development of self-regulated learning. For instance, early ages are the best time to develop SRL (Butler, 2018; Carlson et al., 2013), dual-language students have more possibility of having better SRL than monolingual learners (Schmitt et al., 2015), and as students grow older, they will focus more on their goals, and it will be a great source of developing SRL (Butler, 2018). Thus, these discussions shed some light on the literature of SRL, especially leading to its connection to language learning.

SRL is becoming more important and believed to be one of the affective factors of students' academic success in learning (Zimmerman, 2008). Some researchers have put efforts to research students' SRL in ELT, including its relation to learning speaking skills. For instance, Aregu (2013) researched 91 Ethiopian university students in regard to their self-efficacy and speaking performance. In this research, Aregu found that SRL could improve students' self-efficacy and oral performance. In the same vein, El-Sakka (2016) did an experimental study to research 40 Egyptian university students and found self-regulated strategies improved students' speaking performance and reduced anxiety. These findings, of course, strengthen the notion that SRL is vital for students' academic success, including learning speaking skills.

On the other hand, a growing body of studies has investigated the implementation of flipped classrooms regarding the students' SRL. Perhaps, the conversation was started by Shyr and Chen (2016) who researched the implementation of what they called as *Flip2learn* on students' SRL by conducting an experimental study. They recruited 81 sophomore students in Taiwan to obtain the data and performed *ANOVA* analysis which revealed that flipped classrooms could improve students' SRL. Moos and Bonde (2016) continued the conversation by doing

an experimental study and recruited 32 pre-service teachers to collect the data and performed *ANOVA* analysis to reveal that flipped classrooms affect students to perform more self-regulated processes. On the other hand, Wang and Zhu (2019) showed different results. They researched 36 and 37 students in two different groups to research the implementation of Massive Open Online Course-based flipped classrooms on students' SRL. They performed *ANCOVA* analysis and found that there was no statistical difference in students' SRL in both groups.

The above studies have shed some light on the effects of flipped classrooms, and it leads to the notion that flipped classrooms affect students' speaking performance and SRL. However, how flipped classrooms with various technology tools affect students' speaking performance and SRL, altogether remains unclear. Also, how flipped classrooms help to improve students' SRL in speaking classes is unknown. Thus, there is a lack of literature because the previous studies only examined those two variables separately and gave very little attention to how flipped classrooms influenced students' SRL. Such information is, of course, necessary for teachers to embrace the implementation of flipped classrooms with various technology tools when teaching speaking skills. These gaps, therefore, prompted this study to conduct this research.

This study, therefore, aims to (1) examine the effects of flipped classrooms with various technology tools on students' speaking performance and SRL and (2) explore in-depth how flipped classrooms influence students' SRL. This study employed an explanatory sequential mixed-method approach by involving 53 tenth grade students of one public high school in Indonesia to obtain the data. Furthermore, the findings in this study are expected to contribute to the literature on the implementation of flipped classrooms in teaching speaking. Thus, to guide the investigation, this study posed the following research questions:

1. Is there any effect of flipped classrooms with various technology tools on students' speaking performance and self-regulated learning?
2. How do flipped classrooms influence students' self-regulated learning?

METHODS

Research Design

This study used an explanatory sequential mixed-method approach to investigate the implementation of flipped classrooms in teaching speaking skills. This approach requires the researcher to collect quantitative data, and the results are used to inform the qualitative data collection (Creswell & Creswell, 2018). This study then combined quantitative and qualitative methods to guide the research procedure, data collection, and analysis. Such an approach was implemented since the purposes of this study were (1) to examine the effects of flipped classrooms

with various technology tools on students' speaking performance and SRL and (2) to explore how flipped classrooms influence students' SRL. Notably, to achieve the purposes, this study employed a quasi-experiment (by employing an alternative treatment posttest-only with nonequivalent groups design) and interview methods respectively. Furthermore, there were three variables investigated such as the implementation of flipped classrooms (independent variable), students' speaking performance (dependent variable), and SRL (dependent variable).

Participants

This study sampled 53 tenth grade high school students in Indonesia using intact group sampling. This school was selected following the recommendation of a superintendent to use this research site since the students are familiar with technology-based learning. Those 53 students were from two different classes in which a class of 27 students was used as the experimental group, and a class of 26 students was used as a control group. Furthermore, this study employed a purposive sampling technique to select six willing participants in the experimental class to participate in semi-structured interviews to explore their SRL.

Procedure, Data Collection, and Instrumentation

This study was started by conducting the experiment for eight weeks where the last week was used to administer a posttest (see Figure 1). In each week for seven weeks, the students spent approximately 60 minutes for reviewing materials, 90 minutes for classroom activities, and five days to practice with peers, recording videos, uploading videos, watching other's videos, and giving comments. Both experimental and control groups studied the same content but with different approaches and activities (see Table 1). In the eighth week, each student from both groups spent five to ten minutes to take the post speaking test. The experimental group received a flipped classroom approach by using *Schoology* as the media of information-sharing and communication. This approach required the students to review online materials (*Youtube* videos and websites) prior to coming to the classroom. A discussion in *Schoology* was conducted in every meeting to make sure the students reviewed the materials. Then, F2F time was used for collaborative activities such as discussions, composing dialogues, and practicing conversations. Once they had finished those activities, they were told to practice again with their peers, record their performances, and uploaded their performance on *Flipgrid* (see Figure 2), and the teacher gave the reviews of their performances (see Figure 3). Meanwhile, the students in the control group were given a conventional teaching approach where teaching and learning happened in the classroom only.

In regard to the posttest, a modified IELTS speaking test topics, a scoring rubric developed by Amiryousefi (2019), and an SRL questionnaire were administered. Then, semi-structured interviews were

conducted with six participants to explore the students' SRL after the implementation of flipped classrooms. These interviews were conducted over one month in which each participant was interviewed twice, and each session lasted for 30 minutes. The interviews were guided by an interview guide that consisted of questions about students' experience involving *forethought*, *performance-control*, and *self-reflection*.

Table 1

Treatments for the experimental group

Meetings	Materials	Treatment & Class Activities
1st meeting	Showing Intention	Students review the materials before class Teacher and students discuss the materials Students practice language expressions with peers
2nd meeting	Showing Intention	Students review the materials before class Teacher and students discuss the materials Students do peer work to create a conversation Students practice with their peers Students record their conversation
3rd meeting	Showing Intention	Teacher and students gave comments online before the class starts Teacher and students discuss the videos Practicing the conversation again based on the comments given and recorded new videos
4th meeting	Correlative Conjunction	Students review the materials before class Teacher and students discuss the materials Students practice language expressions with peers
5th meeting	Correlative Conjunction	Students review the materials before class Teacher and students discuss the materials Students do peer work to create a conversation Students practice with their peers Students record their conversation
6th meeting	Correlative Conjunction	Teacher and students gave comments online before the class starts Teacher and students discuss the videos Practicing the conversation again based on the comments given and recorded new videos
7th meeting	Correlative Conjunction	Teacher and students discuss the students' revised videos Students practice the conversation again based on the comments given and recorded final videos

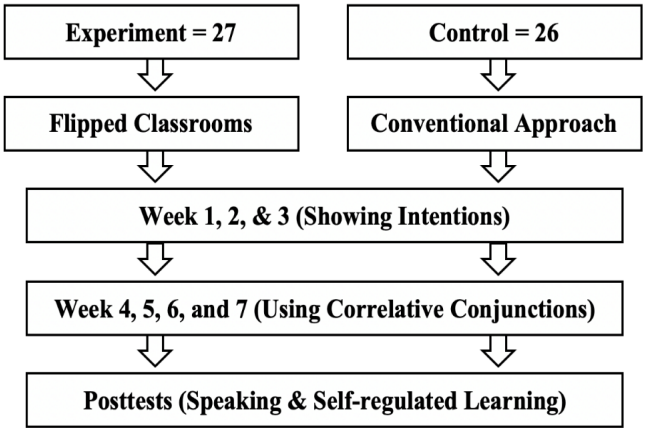

Figure 1. Diagram of the experimental design

Data Analysis

The data in this study were analyzed quantitatively and qualitatively. The quantitative data were analyzed using descriptive statistics to examine the variability of each group. Then, *One-way MANOVA* analysis was performed to test the hypotheses proposed in this study. On the other hand, the qualitative data derived from interviews were transcribed in English and were analyzed using content analysis technique. According to Krippendorff (2004), content analysis is a qualitative technique for making valid inferences from texts. Through the implementation of this analysis technique, the contents about students' SRL from the transcriptions were analyzed using *in vivo* coding by placing the actual spoken words of the participants which supported the three categories (*forethought*, *performance-control*, and *self-reflection* phases) determined in this study. Then, the results of the analysis were presented descriptively.

Figure 2. Students' recorded speaking videos

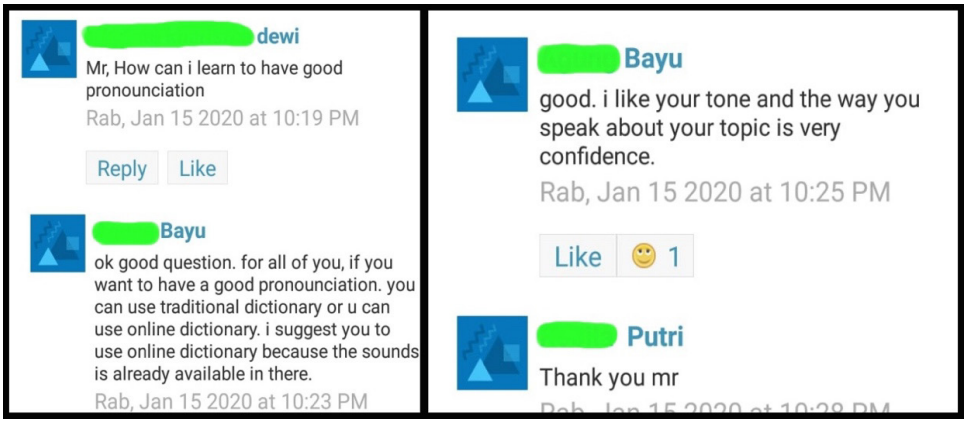

Figure 3. Teacher's comments on students' recorded videos

RESULTS

The Effects of Flipped Classrooms on Students' Speaking Performance and SRL (Quantitative Analysis)

The data collected from posttest were analyzed descriptively prior to performing hypothesis testing. Table 2 shows that the experimental group's variabilities of speaking performance are *Mean*= 83.333, *SD*= 10.160, and *Var*= 103.231. Meanwhile, the control group's variabilities of speaking performance are *Mean*= 68.885, *SD*= 8.955, and *Var*= 80.186. Table 2 also shows that the experimental group's variability of SRL are *Mean*= 115.260, *SD*= 12.446, and *Var*= 154.892. On the contrary, control group's variability of SRL are *Mean*= 103.192, *SD*= 14.114, and *Var*= 199.202.

The data analysis was continued into hypothesis testing since the data have passed the tests of assumptions such as normality, homogeneity, and collinearity. Then, *One-way MANOVA* was performed due to performing hypothesis testing with one independent and two dependent variables. Table 3 shows that F (2, 50) = 15.318, p < 0.001, *Wilk's Ù*= 0.620, h_p^2= 0.990. There were significant differences in the results of both experimental and control groups on speaking performance and SRL. The h_p^2=0.990 indicates that approximately 99% of the multivariate variance of speaking performance and SRL was associated with the treatments.

Since *one-way MANOVA* analysis had shown statistically significant results, the

Table 2

Variabilities of students' speaking performance and SRL

Variables	Groups	Mean	SD	Var
Speaking Performance	Experiment	83.333	10.160	103.231
	Control	68.885	8.955	80.186
SRL	Experiment	115.260	12.446	154.892
	Control	103.192	14.114	199.202

Table 3
One-way MANOVA tests' results

Tests	Value	F	df	Error df	Sig.	Partial Eta Squared
Pillai's Trace	0.380	15.318	2	50	0.000	0.990
Wilks' Lambda	0.620	15.318	2	50	0.000	0.990
Hotelling's Trace	0.613	15.318	2	50	0.000	0.990
Roy's Largest Root	0.613	15.318	2	50	0.000	0.990

examination of univariate ANOVA results was performed. Table 4 shows that students' speaking performance of both groups were statistically different where F (1, 51) = 30.078, $p < 0.001$, $h_p^2 = 0.371$. In addition, there was also a statistically significant difference on students' SRL of both groups where F (1, 51) = 10.920, $p < 0.002$, $h_p^2 = 0.176$. Looking at the mean scores (Table 2), students taught by flipped classrooms had better speaking performance and SRL than their counterparts in the control group.

Even though the above statistical results have shown the effects of flipped classrooms on students speaking performance and SRL, however, how flipped classrooms helped the students to develop their SRL remained unclear. Thus, a sequential approach was then implemented to explore the roles that flipped classrooms played to influence the students in developing their SRL.

The Influences of Flipped Classrooms to Students' SRL (Qualitative Analysis)

The data from interviews were qualitatively analyzed to give an in-depth understanding of how flipped classrooms influence students' SRL. During the implementation of flipped classrooms, the students were asked to review the materials prior to coming to class. Even though the students described their reviews differently, their

Table 4
Univariate ANOVA tests' results

Variables	F	df	Error df	Sig.	Partial Eta Squared
Speaking performance	30.078	1	51	0.000	0.371
SRL	10.920	1	51	0.002	0.176

comments indicated they agreed that reviewing classroom materials before coming to school benefited them, especially in preparing them to understand discussions about the topic. One student said, "through flipped classrooms, I could understand the discussion easily because I had learned the materials at home." Another student shared, "I like the way the teacher explained the materials. I like watching videos rather than reading the textbook only." In addition, this phase also led students to find more materials independently to support their understanding of a particular topic. To support this, another said, "I have more time to search for more materials when I was learning at home. These materials helped me to be well prepared before coming to class." Also, the students claimed that the teacher's videos and explanations during F2F work effectively supported their mastery of content. Yet, another said, "the way the teacher explained the materials to me improved my comprehension even though I had learned the materials at home."

Based on the analysis, it was found that the implementation of flipped classrooms with *Schoology* as the Learning Management System (LMS) platform helped the students monitor their own learning process. As explained previously, the teacher used *Schoology* to share materials and discussion activities before coming to class. Moreover, the students also recorded their videos and shared links on *Schoology*. The use of *Schoology* enabled students to manage their learning materials, to monitor learning through a discussion forum in *Schoology*, and to access their uploaded videos through *Schoology*. One student proudly confessed, "I could manage my learning materials and monitor the conversation about a particular topic. It helped me a lot to understand that topic." With everything shared on *Schoology* before coming to school, students managed their study time. Another student declared, "I could easily manage my time to study since everything is accessible, and I could choose which material I wanted to learn first."

As flipped classrooms provide more F2F time for the students, they used that time to engage in speaking practices. Students reported that F2F time helped since it allowed for more interactive learning with their peers. One stated, "I could practice and collaborate with my friends. This activity helped me a lot to improve my speaking skills and I like this activity." These flipped practices supported students with motivation and efficacy as one student reported, "The class activity required me to practice more… and I gradually had more motivation and courage to speak from the practices."

Lastly, flipped classrooms, along with *Schoology*, enable students to improve their speaking skills not only from the practices but also from the comments they received. From the teacher's regular comments and their friends' suggestions, the students had multiple opportunities to reflect on their speaking and learning. They were able to notice their own strengths and areas in which they wanted to improve their speaking performance. One reflected, "The comments from the teacher and my friends

helped me to reflect on weaknesses in my speaking performance. Then, I know what to improve." Likewise, students reflected on their experience in F2F activities. The discussions and practicing with peers helped them to consider their performance as well as improve their speaking skills. In addition, they were looking for such activities to help develop their oral language skills. Supporting this description, one student affirmed, "I like my experience in this class… with my teacher's help and practicing with friends, I could improve my speaking."

DISCUSSIONS

Since there is a lack of information about the effects of flipped classrooms on students' speaking performance and SRL, this prompted the present study (1) to examine the effects of flipped classrooms with various technology tools on students' speaking performance and SRL and (2) to explore how flipped classrooms play its roles in students' SRL. Then, an explanatory sequential mixed-method design was used to make sure the students reviewed the materials.

The first research question examined the effects of flipped classrooms with various technology tools on students' speaking performance and SRL. The results in this study implied that flipped classrooms with various technology tools had effects on students speaking performance and SRL and could improve their speaking performance and SRL. These results confirm the findings found by previous research that flipped classrooms improve students' speaking performance (Hung, 2017, Köroglu & Çakir, 2017; Lin & Hwang, 2018) and students' SRL (Moos & Bonde, 2016; Shyr & Chen, 2016), but reject the claim made by Wang and Zhu (2019) that flipped classrooms did not affect SRL. Even though those studies sampled university students, the effect of flipped classrooms with various technology still applied for high school students, as reported in this present study.

To speculate, all of the activities with the teacher and peers in flipped classrooms with various technology tools seems to promote the students to be more active and responsible for their own learning. According to Yeo (2018), flipped classrooms enable students to engage as active participants rather than passive recipients in a traditional classroom. In regard to the technology implementation, Mehring and Leis (2018) delineated, with the adaptation of technology, the traditional teaching approach could be converted into a more student-centered, communicative approach. Therefore, the students have more opportunities to practice their speaking skills with their friends, and with technology implementation, their quality of learning is even better. However, the speculation mentioned above should be explored profoundly to provide a better understanding of how flipped classrooms influenced the students in developing their SRL.

To support the above results, especially on students' SRL, the second research question explored how flipped classrooms influenced students' SRL. It is important to be conducted since the previous studies did

not specifically explored on how flipped classrooms helped the students' SRL. Reflecting on the aggregate data, it can be speculated that flipped classrooms implemented in this study played an important role in helping the students to develop their SRL. It seems that flipped classrooms helped the students to experience the three phases model proposed by Zimmerman (1998), such as *forethought*, *performance-control*, and *self-reflection* effectively. In addition, the students' SRL also seems to be guided by metacognition, strategic action, and motivation, as claimed by Perry et al. (2006). Thus, the findings imply that flipped classrooms facilitate the students to develop their SRL effectively as supported by the quantitative data above. However, the most critical discussion is to uncover the students' thinking about how they developed their SRL through the implementation of flipped classrooms.

As the results of the interviews show, the students developed their *forethought* by reviewing the materials in the pre-class activity. As flipped classrooms provided them with time to review the materials before coming to class, the students have more opportunities to watch and rewind the materials as well as to search for more explanations or supporting materials for better understanding. In line with this, Mehring and Leis (2018) argued that pre-class time enabled the students to learn independently and used proactive techniques to expand their knowledge. Yet, it is important to note that reviewing materials will work efficiently and effectively if the materials are interesting and easily comprehended by the students. Accordingly, with interesting materials and time to review, it will enhance the opportunity to have a better *forethought* phase.

In addition, flipped classrooms in this study provided students with opportunities to promote *the performance-control* phase. Apparently, the students showed how they did *performance-control* through managing their time of studying, playing and rewinding videos, finding supporting explanation or materials, and following the online discussions' progress. In addition, listening to the teacher's comments and practicing with friends could also be considered as the strategic activities to improve students' speaking skills. Thus, these activities presumably gave the students' great *performance-control* phase experience during flipped classrooms. However, it is important to note that the implementation of technology tools, as shown in this study, helped this phase very much. It is similar to Shyr and Chen's (2016) claim that flipped classrooms with technology tools helps students regulate their learning and eventually gain more effective performance. Technology in flipped classrooms therefore plays a vital role during the *performance-control* phase as it helps to provide a better experience.

Practicing with friends and giving comments on videos in this study seems to be the strategic actions of the students to promote better *self-reflection*. According to Moos and Bonde (2016), *self-reflection* occurs as a result of the students judging

their performance. In this study, students' reflections derived not only from self-judging, but also from teacher and students' comments and discussions. These various activities seem to help the students to realize their strengths and weaknesses as well as reducing their anxiety, especially on being afraid of negative evaluation. As a consequence, these various activities can promote students' motivation, as shown in this study. According to Yeo (2018), students in flipped classrooms are active participants who construct knowledge with their teacher and peers. Thus, flipped classrooms help the students not only to self-reflect on their performance but also reflect from their experience interacting with teachers and peers.

IMPLICATIONS

From the above discussion, there are four implications drawn to ELT. Firstly, teachers are suggested to implement flipped classrooms in their English instructions, especially in teaching speaking. As confirmed in this study, flipped classrooms promote students' speaking performance and SRL. Thus, implementing flipped classrooms will improve the quality of their students' language learning. Secondly, since technology tools are found to be helpful, it is suggested that teachers implement various technology tools to support their flipped classrooms. Moreover, teachers are expected to administer technology not only to information sharing but also for assessment activities. As McLaughlin et al. (2016) stated, technology can be used for assessment for pre and F2F activities in flipped classrooms. Thus, diverse technology tools will improve the quality of the flipped classroom implementation. Thirdly, teachers must be able to select interesting materials for their students. As the findings revealed, interesting materials still matter for the students to comprehend the topics. If the teachers prefer to record their presentations as the only materials, it is suggested that the teachers review whether the videos are interesting or not. If possible, teachers should use a creative video editor application to create interesting and interactive videos. Nowadays, there are some video editor applications that enable teachers to create interactive teaching materials, including combining videos with assessments. Lastly, it is suggested that teachers provide communicative activities that involve teacher and peer communication. According to Yeo (2018), flipped classrooms that provide teacher and peer activities will enable students to be active participants rather than passive recipients. Thus, flipped classrooms can facilitate active learning as proponents of flipped classrooms claimed (Mehring & Leis, 2018; Roehling, 2018; Yeo, 2018).

CONCLUSION

Given the discussion above, it can be concluded that flipped classrooms have significant effects on students' speaking performance and SRL. As with the benefits and features brought by flipped classrooms, this approach helps students to improve their speaking performance and, at the same

time, improve their SRL. In addition, the implementation of various technology tools helps flipped classrooms to work best. As Mclaughlin et al. (2016) argued, technology enhances access to learning resources as well as promoting learning engagement with teachers and peers.

This study also establishes that the activities in flipped classrooms can provide students with a better experience as a source of support for SRL. Approaches such as reviewing materials, online discussions, classroom discussions, teacher and peer activities will strengthen students as they further develop during *forethought*, *performance-control*, and *self-reflection* phases. In addition, technology improves the implementation of flipped classrooms in accordance with developing students' SRL. Thus, technology plays a vital role in students' SRL development during the implementation of this approach.

The discussion also sheds light on how flipped classrooms can work best. Interesting materials, the way teachers explain materials, interesting collaborative activities, and the incorporation of technology help flipped classrooms to work best. Without such support, flipped classrooms will be merely a conventional approach that might not work effectively to improve the students' quality of learning. Therefore, it is important to note that flipped classrooms cannot be separated from such support.

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