IMPLEMENTING MOORE'S MODEL OF INTERACTION IN A FLIPPED-CLASS INSTRUCTION

Zamzami Zainuddin
zem.aceh@gmail.com
Hong Kong

Abstract: This study aimed at identifying undergraduate students' interaction in learning English language using the flipped-class instructional model, based on a-fourth component of Moore's model of interaction. There were four aspects to identify, namely: student-peers' interaction, student-instructor interaction, student–contents interaction and student-technology interaction. The study employed a mixed method research approach, the Questionnaire survey and focus group interview were used to assemble in-depth information. 31 respondents answered the questionnaire and 10 respondents were involved in a focus group discussion. The result revealed that students' interactions were well established in the flipped-class environment, including interaction with peers, instructor, content, and technology. Students' interactions were not only established in-class activities but also continued beyond the walls of the classroom and beyond the normal class hours. These findings confirmed that students were able to learn the content not only from the instructor but also from peers. Pre-class video recorded lectures were also allowed students to become more independent outside of the classroom learning. Besides, the interaction was well-established between students and content - allowed students to pause and replay the videos as often as they needed without having to lose themselves in note-taking. Based on the analyses, this study has contributed to better understanding of flipped-class instruction in teaching-learning English in the Indonesian context.
Keywords: Flipped classroom, EFL, Interaction, Perceptions, Blogs.

INTRODUCTION

In Indonesia, English is considered as a foreign language (EFL) and obligatory subject taught from elementary school till university level (Dimyati & Mudjiono, 2009). However, Madya (2010) emphasizes that English is barely practiced by Indonesian students outside the class or in daily life because it is a foreign language. Although English is not the first or second language for Indonesians, it is widely accepted as an important language in Indonesia because of globalization (Yuwono, 2005). In the Indonesian context, a good mastery of English will indeed help accelerate development of the country for two major reasons: first, to support mastery of technology and science, since most of these resources are published in English and much valuable scientific information provided on media is also published in English. Second, English is an international language used for various international communication purposes such as business, diplomacy, politics, and education (Madya, 2010). Besides, in Indonesian higher education context, Zainuddin and Keumala (2018) mentioned, most students are still educated in the environments of lecture and textbook-centered approaches which made learning unattractive and student's passive in learning activities. Students usually lack time to interact with other students and instructors in the class or outside of the class

It is believed that the traditional learning approach which focuses on the teacher as the center knowledge is irrelevant in today's digital age (Wang & Heffernan, 2010). Thus, the use of technology and 21st-century learning skills in teaching language is highly recommended to produce autonomous learners, critical thinkers, information seekers, disciplined, logical and analytical, curious, open and highly motivated, interdependent and interpersonally competent, persistent and responsible, creative, knowledgeable and skillful about the learning process (Klimova & Semradova, 2012). According to Ghasemi and Hashemi (2011), the use of information and communication technology in teaching a foreign language provides greater freedom and convenient learning environment and the students can learn in the real context. Learning a language with the use of technology had been applied more than twenty years and numerous studies revealed that technology plays a very crucial role in fostering students' self-directed learning skills in learning a second language (Barrutia, 1985; Levy, 1997).

In today's digital world, the instructors are demanded to employ different instructions that allow students to have strong motivation, self-directed learning skills, and interactions in their learning. Flipped classroom is one of the current trends in the field of education, which can potentially be implemented to support the needs of twenty-first-century learners. According to the New Media Consortium (NMC) Horizon Report published in 2014/

2015, flipped classroom are considered as emerging pedagogies and technologies in the 21st century. It is recommended that this pedagogy be performed in schools and higher education institutions worldwide to support 21st-century learning skills (Johnson et al. 2015). Zainuddin and Halili (2016) also reported that the flip-class approach has been implemented worldwide in various fields of study such as Algebra, public health, Psychology, Business, Economics, Science, and English language course. Flipped classroom is defined as an approach of learning activity where the students learn the content of the video outside the class hour and establish a group discussion in the class activities (Zainuddin & Attaran, 2015). The students learn through hands-on learning activities and limited time is dedicated to the lectures; this means students will use the class time for real world activities to solve problems.

STUDENTS' INTERACTION

Interaction is a communication and cooperation among all elements in the community. In the classroom, students can establish interaction with other students, teachers and learning materials (Van Lier, 2014). Students' interaction is establishing a welcome and good communication and response among learners and between learners and teacher and learners and contents (Moore, 1989). Many studies stress the importance of students' interaction in teaching and learning activities (Koomen, Spilt, & Oort, 2011; Roorda, Cornelius-White, 2007; Thijs & Koomen, 2008). Interaction among all communities in the teaching and learning process is very necessary in accomplishing the goal of learning (Cho & Jonassen, 2009; Cho & Kim, 2013; Richardson & Swan, 2003).

In teaching by using technology, interaction is a very significant element to strengthen social communication among students and the instructor whether in the class or outside the class using various technologies tools (Woo & Reeves, 2007). It proves that students' social interaction in technology learning environment is more effective than that in traditional classroom without using technology; students in traditional classroom only interact physically in the classroom but not outside class hours (Wang, 2013). It can be assumed that students' social interactions will not decrease when technology media is integrated into the classroom. Technology use will indeed help students interact easily with all communities both inside and outside the class. Then, lack of students' interaction also becomes a crucial issue in Indonesia which affects students' learning of English. Tutyandari (2005) notes that poor teacher- students' interaction and student-student interaction tend to make teaching and learning English passive and ineffective. Lu, Hou, and Huang (2010) emphasize that when student interaction is limited in learning activities, the students lack opportunities to practice language with their peers, solve problems in groups and exchange ideas.

MOORE'S MODEL OF INTERACTION

In this study, interaction referred to Moore's theory (1989), where students construct their interactions with peers, instructor, content, and technology either in-class or outside of the classroom. Student-peer interaction will support students' exchange of information with peers, solving of problems and help students understands the content of learning (Kellogg & Smith, 2009). In this study, the students was expected to interact with peers not only physically within face to face in the classroom but also virtually outside of the class using various technological platforms such as Learning Management Systems (LMSs), Blogs, Wikis, or social media. Besides, student-instructor interaction would also benefit students in obtaining feedback from the instructor. Within this interaction, it is expected to bridge the gap between student-instructor in knowledge-sharing and learning.

Moreover, the interaction would also be well-established between students and contents which mean that the students are able to engage with the content in an interactive way. In the flipped-class context, for example, the students might be able to take notes, pause, and replay the video content according to their needs - this is the so-called student-content interaction. Bergmann and Sams (2014) mentioned that in flipped classroom environments, students would not only watch the video lectures but also be able to interact with the video lessons by stopping the videos to take notes or replaying points of confusion. Besides the three types of interaction, Hillman et al. (1994) proposed the other type called student-interface interaction or student-technology interaction. Based on this discussion, the authors briefly summarize the model of students' interaction in the flipped classroom study as follow:

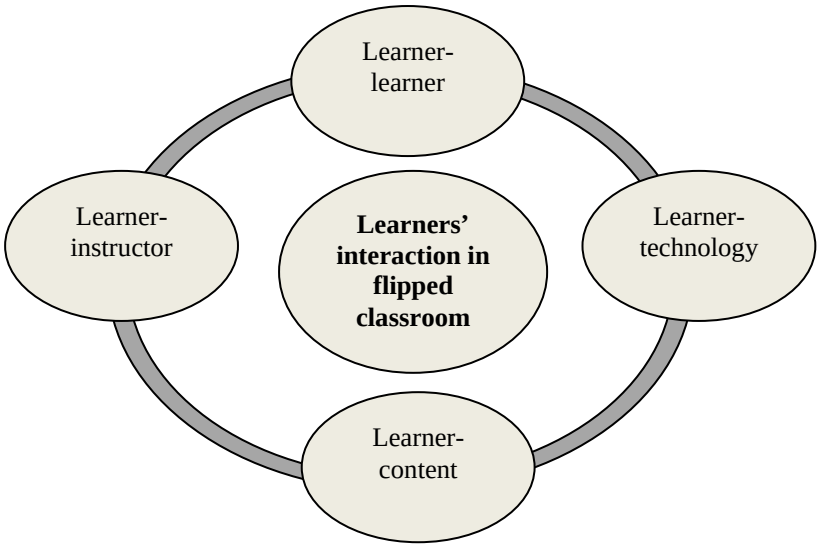

Figure 1. A conceptual model of students' interaction in the flipped classroom

METHODS

This study aimed at identifying students' learning perceptions in the English language flipped-class instruction in terms of interaction and participation. The study was conducted using a mixed method design and took place at a selected university in Indonesia. The rationale for employing a mixed method design in this study is to triangulate both quantitative and qualitative data - the so-called methodological triangulation. It is in coherence with a statement of Creswell (2008) that using multiple approached in a single study would strengthen both quantitative and qualitative data, and enable the researchers to obtain rich data and interpret them more in-depth. Participants of this study (N = 30) were from an English class at selected a University in Indonesia. All participants were second-semester students in the English education department. In selecting the sample, the researcher used a purposeful sampling, some 31 students completed survey questionnaires and 10 students were involved in a focus group discussion. The rationale for choosing these participants was that none of them has any experience in the EFL flipped classroom.

The questionnaires consisted of five-level Likert Scale items which supplied the quantitative data for the study (1: Strongly- 5: Strongly Agree). Reliability of the questionnaire was tested during a pilot study and the result of Cronbach's alpha was .862. The researcher then employed a focus group interview to investigate more in-depth students' perceptions about learning the EFL flipped-class instruction. In this study, the researcher analyzed both data separately, starting with quantitative and subsequently followed by qualitative data. This method is considered as an explanatory sequential design. This means that qualitative data analysis would help support and elaborate in-depth analysis of quantitative data (Creswell, 2008). The questionnaire data were analyzed in descriptive statistics using the SPSS software. The goal was to summarize a particular set of data for graphical display (Johnson & Cristensen, 2008). The data responses were analyzed in column charts with the percentage, Mean (M) and Standard Deviation (SD). The interview analysis of this study used a step-wise design described by Patton (2002). The process consisted of three steps: (1) Assemble the raw case; the interviews were transcribed by the researcher to get the print version of the interview, (2) Construct the case record; the raw data of students' motivation was classified in themes and edited by the researcher, (3) Report a final case; the result of interview discussion was reported descriptively according to their themes.

FINDINGS

According to the response rate analysis, 31 students completed the survey and 10 students were involved in a focus group discussion. The analysis of questionnaire data was divided them into four sections: (a) learner-learner interaction, (b) learner-instructor interaction, (c) learner-content interaction and (d) learner-technology interaction. Besides, a qualitative approach was employed, aimed at triangulating quantitative data and interpret the findings more holistically.

Learner-learner interaction

This analysis of Items 1 and 2 regarding learner-learner interaction shows that 90% of the students agreed with the statement that using the flipped-class instruction enabled them to interact with other students either in the classroom or after the class. The Mean score (M = 4.45, SD = 0.767) of the study also indicates that a good

interaction has been well-established among students. The other item (Item 2) reveals that 93% of the students indicated that they were likely used the class activities for knowledge exchange with peers. The mean score (M = 4.48, SD = 0.811) also positively designated that the effect of learner-learner interaction benefited students in exchanging ideas with each other. The following Table 1 and Figure 2 summarized the results of students' peer interaction in the flipped classroom environment.

Table 1.
Descriptive statistics of learner-learner interaction

Items	Percentage					Mean	*SD*
Learner-learner interaction	**1**	**2**	**3**	**4**	**5**		
1. Using flipped classroom enabled me to interact with other students inside and outside the class	0	3	6	32	58	4.45	.767
2. I felt I learned a great deal from other students in this class	0	6	0	32	61	4.48	.811

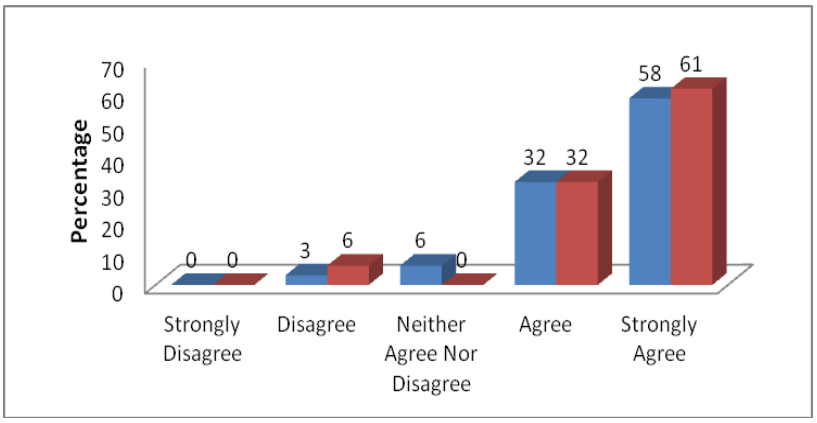

Figure 2. Percentage of learner-learner interaction

This finding confirms that the flipped-class instruction has successfully established students' social interaction with peers - enabled students to learn, teach, and exchange information with each other. Besides, the flipped-class instruction might allow low-ability students to learn in an environment in which they are more likely to be self-conscious and confident in their abilities. In particular, all students in the focus group discussion recognized that the flipped classroom environment had constructed their active interaction with peers either in-class hours or after the class. In line with this, one student argued positively: "*Yes, I agree, in this class [flipped classroom], I have a chance to talk and discuss with my friends not only in the class but also outside the class*".

This statement was supported by another student: "*What I like from this class is a group discussion, sharing knowledge and new information among us, and I think the class is not passive*". Besides, students' interaction was well-established not only in the class but also outside of the class hours. Some respondents noted how the flipped classroom enabled them to increase the amount of time to interact with other students outside of the class hours, for instance, one student declared: "*It is very helpful for us.....we can practice our English not only in the classroom but also after the class online*".

Other students also acknowledged the same perceptions: "*…outside of class interaction is very useful for me especially to practice English with friends….and to discuss the lesson*". Furthermore, this instruction also improved class preparedness - enabled students to prepare questions at home and bring them to class for a discussion, one student verbalized: "*…now I can prepare many questions at home and ask them in the class during a discussion….*" Furthermore, asking questions and exchanging ideas were not the only ways for students to interact with each other in the flipped classroom. Student-student interactions also improved their understanding toward the subject they learned and discussed, for example, one student stated: "*We can pay more attention to other students' presentation, learn from them and understand the subjects easily*". This can be implied that knowledge exchange becomes a key issue concerning learner-learner interaction in the flipped-class instruction.

Learner-instructor interaction

Regarding learner-instructor interaction, Item 3 published that 64% of the students positively responded that the flipped-class instruction enabled them to interact with the instructor, either in-class hours or after the class. However, the mean score (M = 3.77, SD = 0.762) indicated that the students were not fully satisfied with the availability of instructor outside the class and the level of percentage was considered as moderate. Hence, it can be implied that learner-instructor interaction is much needed in the future of flipped classroom implementation.

Item 4 reported that 71% of the students believed that the instructor was patient in explaining concepts which were difficult to grasp. Likewise, the mean score (M = 3.80, SD = 0.792) also showed that the percentage of this item was moderate. For item 5, the data show that 90% of the students believed that feedbacks given by the instructor in the class improved their learning and understanding. In other words, students were able to understand the material which was difficult to grasp during the class activities (M = 4.45, SD = 0.767).

Further, item 6 showed that 81% of students positively responded that the instructor answered their questions in a timely fashion. The mean score (M = 3.90, SD = 0.746) indicated that the students were satisfied with the instructor's response to their questions. This finding confirmed that students and instructor interaction had been well-established through a give-and-take conversation. The following Table 2 and Figure 3 summarize the findings of student-instructor interaction in the flipped classroom with the percentage, mean and standard deviation (SD).

Table 2
Descriptive statistics of learner-instructor interaction

Items	Percentage					Mean	SD
Learner-instructor interaction	**1**	**2**	**3**	**4**	**5**		
3. The instructor was available outside of class time	0	3	32	48	16	3.77	.762
4. The instructor was patient in explaining concepts which were difficult to grasp	0	6	23	55	16	3.80	.792
5. The feedback given on my work helped me to improve	0	3	6	32	58	4.45	.767
6. The instructor responded to my questions in a timely fashion	0	6	13	65	16	3.90	.746

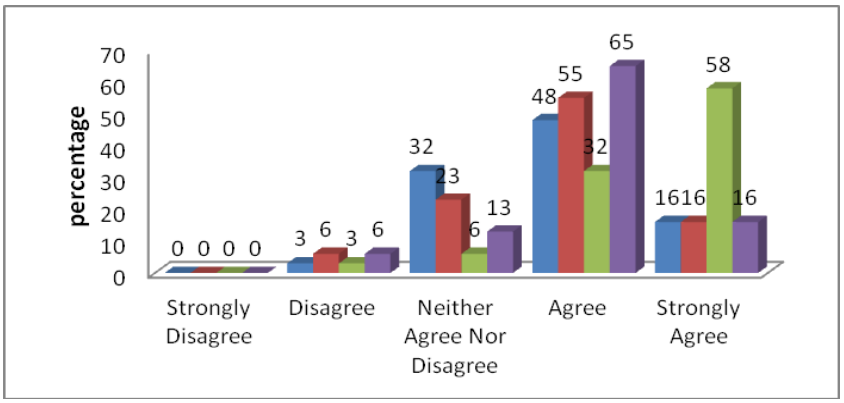

Figure 3. Percentage of learner-instructor interaction in the flipped classroom

In a group discussion, participants pointed their comfort and amusement of having times interacting with the instructor during the class hours. Some students verbalized that the instructor in the flipped classroom was able to talk personally to students and supplied immediate feedback for their improvement. Immediate feedback from the instructor enabled students to incorporate it into the learning process, as a student (S9) mentioned: "*When I make a mistake, she [lecturer] correct it immediately, but never says wrong to my answer, then she gives a suggestion for my improvement.*" Another student continued: "*Yes, we got a great advice directly for our improvement, so we know what to do, also, if we have some problems to complain, she will listen to us.*"

Another statement was then expressed by one student who compared her experience interacting with an instructor in a flipped classroom and traditional classroom, she asserted: "*This class makes me easy to talk to a lecturer in the class and it was very different with my previous class, only sitting and listening to lectures and we just stayed silently.....I did not like asking questions because the lecturer would say "question is enough, now listening to my explanation of a new topic" But here, in this class [flipped classroom], we can ask and answer many questions."*

An interviewee who considered as a passive student noticed: "*She [lecturer] always interacts with us in the class, yeah, good lecturer, but less time to interact with her outside the classroom.*" While the other pronounced that formative assessment or daily quiz has helped them improved understanding toward the contents, he stated: "*She [instructor] always gives us direct feedback, so we know what we need to improve and what we already understand, we can ask her and she will explain very clear.*"

Learner-content interaction

The result of item 7 showed that 93% of students positively reported that they could easily interact with the video lessons outside the class by pausing, stopping and replaying the video according to their needs. Item 8 reported that 90% of students positively responded that they could easily take notes while watching the video lesson outside the class hour. The mean score (M = 4.35, SD = 1.050) also indicated that overall respondents had a positive attitude toward this item. The following Table 3 summarizes the finding of students - contents interaction in the flipped classroom with the percentage, mean and standard deviation (SD) and Figure 4 depicts a graph of students - contents interaction in English flipped classroom

Table 3
Descriptive statistics of learner-content interaction

Items	Percentage					Mean	SD
Learner-content interaction	**1**	**2**	**3**	**4**	**5**		
7. Using video lessons in flipped classroom enabled me to pause, stop, rewind and fast-forward according to my learning needs.	0	3	3	32	61	4.51	.724
8. Using video lessons in flipped classroom enabled me to take a note.	6	0	3	32	58	4.35	1.05

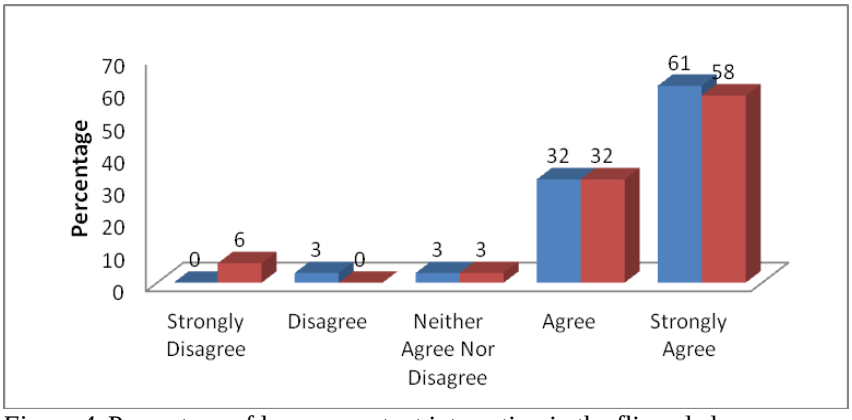

Figure 4. Percentage of learner-content interaction in the flipped classroom

From items 7 and 8, the researcher concluded that by interacting with the pre-class video lectures, the students were able to take notes, stop, pause, and replay the videos at their own pace. In a group interview, almost all students declared that they could watch the video in their own time and can make notes on it at their own pace – pausing and rewinding if they need to. In line with this, one mentions: "*Yes, we can stop and replay it according to our need, it can be twice, three times or four times.*"

In terms of students' engagement with the video lectures, one student noticed: "*I think the videos are good, not boring to watch, I could watch on my own way, write a note, pause and reply them when I don't understand.*" (S9) Other students mentioned that the duration of the videos lectures has a great impact on learner-content engagement. Some students stated that to engage students with the videos, shorter videos might be better than the longer one "*…..to me, the duration of the video is very important, too long duration is not good and tend to*

make students boring to watch, I think shorter and interesting video lectures is better" confessed one student. "*In my opinion, the video must be short and not too long, so, the students will not get bored to watch it*". Conversely, when we asked students who dislike watching and interacting with the video lectures outside of the class, one student replied and complained: "*I dislike watching the video lessons at home and I think the video should be in the classroom...no time to watch the video outside the class, I am too busy and I think it is better to watch the video in the classroom.*"

Learner – technology interaction

The researcher analyzed item 9-10 for learner-technology interaction. Item 9 reported that 87% of students positively responded that online technology made it more difficult to interact with the other students outside the class. The mean score (M = 1.83, SD = 0.637) also showed that the students had the strongest negative response or disagreement with the statement. In other words, by using technology tools, students believed that they could easily established their interaction virtually with classmates and instructor outside the class hour.

Item 10 also reported that 91% of students surveyed either disagreed or strongly disagreed that online technology made it more difficult to communicate with the lecturer. The mean score (M = 1.74, SD = 1.728) also showed the strongest negative response from students or disagreement with the statement. The researcher concluded that the students believed that using technology tools enabled them to easily interact with the instructor outside the class. The following Table 4 summarizes the finding of students – technology interaction in flipped classroom with the percentage, mean and standard deviation (*SD*) and Figure 5 also shows the finding of students – technology interaction in English flipped classroom.

Table 4
Descriptive statistics of learner – technology interaction

Items	**Percentage**					**Mean**	***SD***
Learner – technology interaction	**1**	**2**	**3**	**4**	**5**		
9. The online technology made it easier to interact with other students outside of the class	0	0	3	50	47	4.43	.568
10. The online technology made it more easier to communicate with my instructor	0	0	3	57	40	4.37	.556

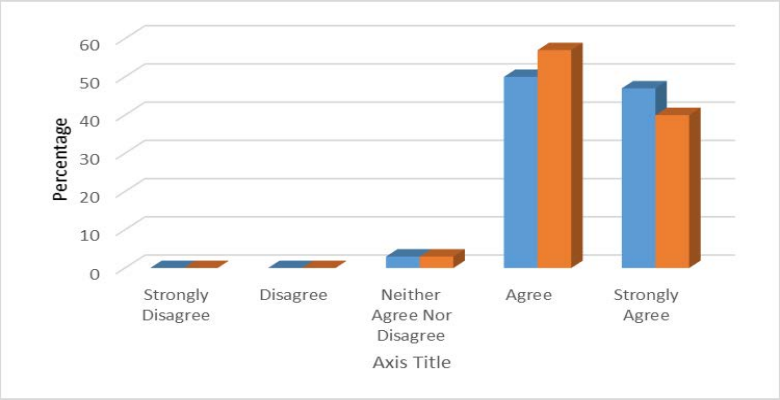

Figure 5. Percentage of learner – technology interaction in the flipped classroom

In a focus group discussion, students reported that they could easily access supporting learning materials outside of the class from numerous sources such as YouTube, VOA News, BBC News, or TED-Ed. One claimed: "*In this class, the instructor taught me to find various learning sources from the Internet such as YouTube videos*" While the other mentioned that she was able to be an independent learner and information seeker: "*Now, I know many learning materials that I can access and learn from YouTube video, BBC, and VOA....now I am able to learn independently outside of the class, I can be an independent learner.*"

CONCLUDING DISCUSSION AND RECOMMENDATIONS

This study summarizes that the flipped-class instruction has successfully constructed students' interaction in learning English subject. During instruction, students' peer interaction and students–instructor interaction activities were well-established in the discussion forum. Learner-learner interaction and learner-instructor interaction were found to be significant contributors to student learning and satisfaction in the flipped-class instruction. The interaction was not only well-established in the classroom but also outside of the class. Asynchronous discussion forums provided opportunities for students to interact with peers and instructor through online platform media outside of the class. Through peers' interaction, the students were able to learn from each other, and importantly, to ask new questions, which might well lead to new answers and discussions. Besides, in terms of learner-instructor interaction, the instructor had also successfully bridged the gaps between them in communication, particularly outside of the classroom. The instructor was also able to provide personal feedback for students' learning during the intervention process.

Furthermore, the interaction was also well-established between students and contents which mean that the students were able to interact with the video content at their own pace. They could take notes, pause, and replay the video content according to their needs. Bergmann and Sams (2014) mentioned that in flipped classroom environments, students not only watch the video but they are also able to interact with the video lessons. Besides, the students were also able to interact with contents either physically in the class or virtually outside of the class. The instruction then allowed instructors and students to interact with technology outside of a classroom context using Blogs. In terms of learner-technology interaction, some students also claimed that they are now able to be independent learners and information seekers. Enable to access more learning materials from a wide range of online resources such as YouTube videos, BBC News, VOA News, TED-Ed, or Khan Academy.

Positive perceptions of students' interactions in the flipped classroom were confirmed not only in the survey questionnaire but also in a focus group interview. The findings of this study confirmed the importance of each type of interaction on student learning. The study also in line with a theory of Moore (1989) and Hillman et al. (1994) that students' interaction in learning should cover four elements including learner-learner interaction, learner-instructor interaction, learner-content interaction, and learner- interface interaction, which addresses the relationship between the learner and the technology that is being used. This also supported by a statement Ariza and Hancock, (2003) that four elements of learners' interactions which is based on Moore's model should be integrated into teaching a second language (ESL) or a foreign language (EFL) subject. The integration of four elements of learners' interaction in learning a foreign language is essential to improving the quality of teaching and learning (Li & Zhu, 2013) and students' interaction in learning tasks will effect on students learning achievement (Kuo, Walker, Belland, Schroder, & Kuo, 2014).

Numerous studies of the flipped classroom and students' interaction have been reported in recent years (Kim, Kim, Khera, & Getman, 2014; Kong, 2014; Lai & Hwang, 2016; Love, Hodge, Grandgenett, & Swift, 2014; Roach, 2004; Zainuddin & Attaran, 2015; Zainuddin, 2017). For instance, Roach (2014) reported that students in the flipped learning class have interactively work in groups to solve problems and exchange ideas, the students also able to study on their own pace outside of the class hours. Other studies reported that students statistically improved in learning and mastering the subject by watching video lessons outside-of-class and having a small group discussion in-class activities (Kong, 2014; Zainuddin, 2017).

Besides, the researchers believe that the results of this study may contribute to better understanding of technology use in teaching-learning a foreign language. Numerous free learning materials can be accessed on digital resources. Richter and McPherson (2012) argued that in today's digital age, every student can access many free internet learning resources such as online video lectures. The students can watch these free online videos everywhere and at their convenience. Asfar and Zainuddin (2015) also stated that technology in education is an ever-evolving process and demands the students and instructor to always update the emerging technology in education in order to face the challenge of the 21st-century skills.

This study encourages English instructors to implement the flipped-class instructions in their teaching practices. This also will offer an opportunity to reform the way of their teaching practice from being teacher-centered to one which is more student-centered. Also, this instruction is significant to foster students' self-directed learning skills outside the classroom, and hands-on activities in the classroom. Missildine, Fountain, Summers, and Gosselin (2013) mentioned that blending of new technology and traditional classroom into a single study, or the so-called flipped classroom, may establish students' interactive learning activities, and at the same time promote a student-centered learning environment.

Although this study reported students' interaction in learning English in the flipped classroom, several issues should be taken into consideration for future research. A Moore-theory and empirical perspectives of the flipped classroom should be further explored more fully. Further study should employ a more interactive environment for teaching and learning English with different settings and instructions. Further study should also explore other learning variables including motivation, engagement, and achievement with a larger number of samples or participants.

REFERENCES

Ariza, E. N., & Hancock, S. (2003). Second language acquisition theories as a framework for creating distance learning courses. *The International Review of Research in Open and Distributed Learning*, *4*(2).

Asfar, N., & Zainuddin, Z. (2015). Secondary Students' Perceptions of Information, Communication and Technology (ICT) Use in Promoting Self Directed Learning in Malaysia. *The Online Journal of Distance Education and E-Learning*, *3*(4), 67-82.

Barrutia, R. (1985). Communicative CALL with Artificial Intelligence: Some desiderata. *Computer Assisted Language Learning*, *3*(1), 37–42.

Beatty, B. J., & Albert, M. (2016). Student perceptions of a flipped classroom management course. *Journal of Applied Research in Higher Education*, *8*(3). 316-328.

Bergmann, J., & Sams, A. (2014). Flipped learning: Maximizing face time. *T+D Magazine*, *68*(2), 28-31.

Butt, A. (2014). Student views on the use of a flipped classroom approach: Evidence from Australia. *Business Education & Accreditation*, *6*(1), 33-43.

Chin, C. (2006). Classroom interaction in science: Teacher questioning and feedback to students' responses. *International Journal of Science Education*, *28*(11), 1315-1346.

Cho, M. -H., & Jonassen, D. (2009). Development of the human interaction dimension of the Self-Regulated Learning Questionnaire in asynchronous online learning environments. *Educational Psychology*, *29*, 117–138.

Cho, M. H., & Kim, B. J. (2013). Students' Self-Regulation for Interaction with Others in Online Learning Environments. *Internet and Higher Education*, *17*, 69-75.

Cohen, S., & Brugar, K. (2013). I want that... flipping the classroom. *Middle Ground*, *16*(4), 12-13.

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, *77*(1), 113-143.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Daouk, Z., Bahous, R., & Bacha, N. N. (2016). Perceptions on the effectiveness of active learning strategies. *Journal of Applied Research in Higher Education*, *8*(3). 360-375.

Dimyati, & Mudjiono. (2009). *Belajar dan pembelajaran*. Jakarta: Rineka Cipta.

García-Sánchez, S., & García-Sánchez, S. (2016). Ubiquitous interaction for ESP distance and blended learners. *Journal of Applied Research in Higher Education*, *8*(4), 489-503.

Ghasemi, B., & Hashemi, M. (2011). ICT: Newwave in English language learning/teaching. *Procedia-Social and Behavioral Sciences*, *15*, 3098-3102.

Halili, S. H., & Zainuddin, Z. (2015). Flipping the Classroom: What We Know And What We Don't. *The Online Journal of Distance Education and e-Learning*, *3*(1), 28-35.

Hillman, D. C. A., Willis, D. J., & Gunawardena, C. N. (1994). Learner-interface interaction in distance education: An extension of contemporary models and strategies for practitioners. *American Journal of Distance Education*, *8*(2), 30-42.

Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*. Thousand Oaks, CA: Sage.

Kellogg, D. L., & Smith, M. A. (2009). Student-to-Student Interaction Revisited: A Case Study of Working Adult Business Students in Online Courses. *Decision Sciences Journal of Innovative Education*, *7*(2), 433-456.

Kim, M. K., Kim, S. M., Khera, O., & Getman, J. (2014). The experience of three flipped classrooms in an urban university: An exploration of design principles. *The Internet and Higher Education*, *22*, 37-50.

Klimova, B. F., & Semradova, I. (2012). The teaching of foreign languages and ICT. *Procedia Technology*, *1*, 89-93.

Kong, S. C. (2014). Developing information literacy and critical thinking skills through domain knowledge learning in digital classrooms: An experience of practicing flipped classroom strategy. *Computers & Education*, *78*, 160-173.

Kuo, Y. C., Walker, A. E., Belland, B. R., Schroder, K. E., & Kuo, Y. T. (2014). A case study of integrating Interwise: Interaction, internet self-efficacy, and satisfaction in synchronous online learning environments. *The International Review of Research in Open and Distributed Learning*, *15*(1).

Lai, C. L., & Hwang, G. J. (2016). A self-regulated flipped classroom approach to improving students' learning performance in a mathematics course. *Computers & Education*, *100*, 126-140.

Lento, C. (2016). Promoting active learning in introductory financial accounting through the flipped classroom design. *Journal of Applied Research in Higher Education*, *8*(1), 72-87.

Levy, M. (1997). *Computer-Assisted Language Learning: Context and Conceptualization.* New York, NY: Oxford University Press.

Li, M., & Zhu, W. (2013). Patterns of computer-mediated interaction in small writing groups using wikis. *Computer Assisted Language Learning*, *26*(1), 61-82.

Love, B., Hodge, A., Grandgenett, N., & Swift, A. W. (2014). Student learning and perceptions in a flipped linear algebra course. *International Journal of Mathematical Education in Science and Technology*, *45*(3), 317-324.

Lu, Z., Hou, L., & Huang, X. (2010). A research on a student-centred teaching model in an ICT-based English audio-video speaking class. *International Journal of Education and Development using ICT*, *6*(3), 101-123.

Lu, Z., Hou, L., & Huang, X. (2010). A research on a student-centred teaching model in an ICT-based English audio-video speaking class. *International Journal of Education and Development using ICT*, *6*(3), 101-123.

Madya, S. (2009). Searching for an appropriate EFL curriculum design for the Indonesian pluralistic society. *TEFLIN Journal*, *18*(2), 196-221.

Missildine, K., Fountain, R., Summers, L., & Gosselin, K. (2013). Flipping the classroom to improve student performance and satisfaction. *Journal of Nursing Education*, *52*(10), 597-599.

Moore, M. (1989). Three types of interaction. *American Journal of Distance Education*, *3*(2), 1-6.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). London: Sage.

Richardson, J., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, *7*(1), 68-88.

Richter, T., & McPherson, M. (2012). Open educational resources: education for the world? *Distance Education*, *33*(2), 201-219.

Roach, T. (2014). Student perceptions toward flipped learning: New methods to increase interaction and active learning in economics. *International Review of Economics Education*, *1-11*.

Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement a meta-analytic approach. *Review of Educational Research*,*81*(4), 493-529.

Scott, C. E., Green, L. E., & Etheridge, D. L. (2016). A comparison between flipped and lecture-based instruction in the calculus classroom. *Journal of Applied Research in Higher Education*, *8*(2), 252-264.

Thijs, J., & Koomen, H. M. Y. (2008). Task related interaction between kindergarten children and their teachers: the role of emotional security. *Infant and Child Development*, *17*, 181-197.

Tutyandari, C. (2005). *Breaking the silence of the students in an English Language class.* Presentation at the 53rd TEFLIN International Conference, Yogyakarta, Indonesia.

Van Lier, L. (2014). *Interaction in the language curriculum: Awareness, autonomy and authenticity*. Routledge: USA.

Wang, S., & Heffernan, N. (2010). Ethical issues in Computer-Assisted Language Learning: Perceptions of teachers and learners. *British Journal of Educational Technology*, *41*(5), 796-813.

Wang, Z. (2013). A Study on the Reasons for the Inefficiency of College English Teaching and Some Tentative Countermeasures. *English Language Teaching*, *7*(1), 9-18.

Warter-Perez, N. and Dong, J. (2012), "Flipping the classroom: how to embed inquiry and design projects into a digital engineering lecture", paper presented at ASEE PSW Section Conference, California Polytechnic State University, San Luis Obispo, CA, April.

Woo, Y., & Reeves, T. C. (2007). Meaningful interaction in web-based learning: A social constructivist interpretation. *The Internet and Higher Education*, *10*(1), 15-25.

Yuwono, G. (2005). *English language teaching in decentralised Indonesia: Voices from the less privileged schools*. Paper presented at the AARE 2005 International Education Research Conference.

Zainuddin, Z. (2017). First-Year College Students' Experiences in the EFL Flipped Classroom: A Case Study in Indonesia. *International Journal of Instruction*, *10*(1), 133-150.

Zainuddin, Z., & Keumala, C. M. (2018). Blended learning method within Indonesian higher education institutions. *Jurnal Pendidikan Humaniora*, *6*(1).

Zainuddin, Z., & Attaran, M. (2015). Malaysian students' perceptions of flipped classroom: A case study. *Innovations in Education and Teaching International*, *53*(6), 660-670.

Zainuddin, Z., & Halili, S.H. (2016). Flipped classroom research and trends from different fields of study and its impact on students' learning. *The International Review of Research in Open and Distributed Learning*, *17*(3), 313-340.

Zimmerman, T. D. (2012). Exploring learner to content interaction as a success factor in online courses. *The International Review of Research in Open and Distance Learning, 13*(4), 152-165.

