



P-ISSN 2355-2794
E-ISSN 2461-0275

The Flipped Classroom: Improving Critical Thinking for Critical Reading of EFL Learners in Higher Education

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Abstract

The immersion of the flipped classroom teaching model in blended and online language learning is indispensable. The purpose of this study was to propose improvement in critical thinking in reading through the flipped classroom teaching model of EFL (English as a Foreign Language) learners in higher education. A quasi-experimental design was used to improve reading skills based on the framework of critical thinking for critical reading with a paired t-test of pre-test and post-test. The participants were 37 second-semester students in the English for Academic Purposes class. The results show that the flipped classroom teaching model enhanced students' critical thinking for critical reading in the aspects of accuracy, clarity, precision, depth, relevance, and logic from the mean score of the pre-tests (12.4865) to the post-tests (18.3243). Students had a positive perception of the implementation of this model in terms of self-directed learning. This study implies that critical thinking for critical reading skills needs supportive teaching and learning environment that can allow students to have self-study prior to the class so that online learning can be effective to synergize the application of flipped classrooms with critical thinking skills in reading.

Keywords: Flipped classroom, critical thinking, critical reading, EFL learners, higher education.

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Citation in APA style: Yulian, R. (2021). The flipped classroom: Improving critical thinking for critical reading of EFL learners in higher education. *Studies in English Language and Education*, 8(2), 508-522.

Received October 20, 2020; Revised February 23, 2021; Accepted March 1, 2021; Published Online May 3, 2021

<https://doi.org/10.24815/siele.v8i2.18366>

1. INTRODUCTION

Online language learning through the inverted model is widely recognized by education practitioners worldwide (Dong, 2016). Teaching English as Academic Purposes at higher education has undergone the evolution of digital technology in online learning for creating a meaningful language learning process for the students (Soliman, 2016). Amongst various ways of technological-based pedagogy practices in English language teaching is the flipped classroom teaching model. A flipped model, as an emerged teaching method, has a great extent to cope with difficulties in EFL contexts as in time, space, and materials (Lee & Wallace, 2018). The flipped classroom is a teaching and learning model which reverses the practices of lecture with outside classroom teaching instructional and brings homework elements to the class (Alsowat, 2016). It is a unique learning approach that enables students to obtain prior knowledge and information from instructional videos before the class, and apply the theory directly to the classroom (Hsieh et al., 2017). The flipped classroom can benefit less time for explicit teaching as the potential obstacles in English language learning and accommodate assimilated learning activities such as role-plays, discussions, and problem-solving activities with learning materials outside the classroom (Lee & Wallace, 2018; Nouri, 2016; Smith et al., 2018). It adopts a collaborative instruction approach that directly involves students by integrating instructions, aspects of the learning background, content, and activities (Mehring, 2017; Yousefi & Mohammadi, 2016).

In recent years, studies focusing on flipped classrooms have become a spotlight in language teaching and learning particularly in blended learning since they elicit interests among researchers in English language learning (Evseeva & Solozhenko, 2015). Numerous studies have examined the use of the flipped model to improve reading skills, but it is rare for them to underpin the attributes of critical thinking for critical reading. Previous studies have been conducted to examine the impact of the flipped classroom in teaching English language skills, such as Hung (2015) who investigated the effects of the flipped classroom in terms of academic achievement, learning styles, and students' engagement of English language learners. The findings of the study showed that the structure of learning materials with WebQuest contributed positive implications on the students' perception of the learning environment but the direct effect of the learning environment on the academic outcomes was indescribable. Another study by Hashemifardnia et al. (2018) focused on exploring the impact of flipped classrooms of junior high school students on reading comprehension without focusing on particular reading subskills and critical thinking skills. Their study claimed that students who received flipped instructions could have self-paced learning to study outside the classroom. In a different study, Ebadi and Rahimi (2018) explored the effect of WebQuest-based classroom on students' learning critical thinking that focused on standardized writing skill based on the use of the web-based inquiry-oriented lesson. Then, Abaeian and Samadi (2016) investigated the impact of the flipped classroom on reading comprehension on different levels of reading comprehension skills of EFL learners.

In English for Academic Purposes (EAP) in higher education, reading is the core skill of teaching and learning English. Based on the constructivism learning theory, students in higher education must have critical thinking skills as they have emerged as a standardized requirement in higher education (Halpern, 2001; Soliman, 2016).

Critical thinking skills reflect in problem-solving skills, scientific process, and strategic planning. Critical thinking is the blueprint of activities for students in higher education. It is the central focus of tertiary education that is to enhance students' ability to read critically (Wilson, 2016). Critical thinking skills involve the skill to identify problems based on theoretical assumptions, the skill to analyze, to comprehend, and to make inferences with inductive-deductive logic, and skills to make a valid and reliable evaluation and assumption (Hosseini et al., 2102). Critical thinking skills can be integrated into reading comprehension skills where students are able to access tasks with problem-based activities so that students can utilize their critical thinking skills toward the topic of the reading text. Learning activities embedded with critical thinking skills can activate students' knowledge to be critical and dynamic individuals with effective communications skills (Živković, 2016).

This present study investigated the impact of the flipped classroom on the reading comprehension performance of EFL learners with heterogeneous proficiency skills and specific homogeneous demographic gender. Therefore, this present study attempted to underpin the effect of the flipped classroom to improve the level of students' critical thinking skills particularly to reading subskills for university students in the Non-English Department with homogeneous English proficiency skills.

There are two research questions raised in this study. The first research question was to examine the improvement of students' critical thinking for critical reading with flipped classroom teaching model. To improve students' critical thinking, the lecturer created instructional videos through flipped classroom model, so the students could obtain initial exposure and better preparation in learning activities. Besides, the improvement of students' critical thinking in critical reading was further analyzed by using direct observation. The second research question was to examine students' perception of the use of flipped classrooms in teaching reading skills. Based on the research questions formulated, the study tested the null hypothesis that there is no significant difference between the score of students' critical thinking in the pre-test and post-test, and the alternative hypothesis that there is a significant difference between the score of students' critical thinking in the pre-test and post-test. The findings of this study are expected to serve as references in online learning activities embedded with critical thinking skills for university students in the setting of the Non-English Department.

2. LITERATURE REVIEW

2.1 The Flipped Classroom

The concept of flipping the classroom emerged originally from the idea of reversing homework for a class assignment. In blended and hybrid learning, the flipped classroom has drastically changed the paradigm of swapping the assignment from home to classroom; moreover; it can assist to overcome some limitations in online learning particularly in time, space, and materials constraints. Flipped classroom teaching model has been suggested to mitigate the constraints of the learning model in the classroom (Nouri, 2016). Students can have full access to learning that enables them to study new concepts of materials at their own pace (Soliman, 2016). Furthermore, this model provides a supportive environment to give students more

extensive prior knowledge in advance before coming to the class. Van Alten et al. (2020) examined that flipped model with explicit instruction in learning activities prior to the class to improve students' learning outcomes in higher education. A variety of content and instructional videos is beneficial to make the students more engaged and interested in the topic and they can be flexible to manage these instructional videos (Karimi & Hamzavi, 2017; Schmidt & Ralph, 2016). Currently, numerous practices of teaching in higher education with flipped classrooms have emerged rapidly because of an array of advantages. First and foremost, it is the students who can obtain assistance to learn tough topics when they need to expand prior knowledge on the subject matter and it scaffolds consistently to create an autonomous learning environment for students (Rakesh Babu & Vivekha, 2019). They can have a rigorous exploration to get an in-depth insight into the material. Guided instructional materials through content video can spur the skills for better preparation for the classroom. Alsowat (2016) also explained that the impact of flipped classrooms contributed a favorable result in terms of improving English students' higher-order thinking skills, engagement, and satisfaction. He compared the effect of this model between a control group and an experimental group at a higher education level but did not specifically focus on particular language skills and elements.

The effect of the flipped classroom on the improvement of reading comprehension was also examined. A study by Karimi and Hamzavi (2017) sought to investigate the implications of this model on reading comprehension simultaneously with the EFL students' attitude, particularly to EFL students at a private language college. Their study proved that flipped model contributed a positive effect on students' attitude in terms of engagement in learning activities. The findings of this study revealed that flipped classrooms did not only enhance the reading comprehension skills but also encouraged students' motivation in language learning. Similarly, Alsowat (2016) examined the impact of the flipped classroom on EFL graduate students in terms of higher-order thinking skills and the relation to students' engagement and satisfaction. He distinguished the dimensions between higher-order thinking and lower-order thinking based on the cognitive process of Bloom's Taxonomy. The studies by Alsowat (2016) and Karimi and Hamzavi (2017) focused on the EFL students' engagement and satisfaction particularly to students who majored in English departments. Therefore, this present study focused distinctly to examine the impact of the flipped classroom teaching model in English for Academic Purposes class in the setting of Non-English Department students.

2.2 Critical Thinking for Critical Reading

Critical thinking is the blueprint of pedagogical activities in higher education and it becomes advisable for educators to accommodate critical thinking activities for critical reading for university students (Wilson, 2016). In the miniature of critical thinking: concepts and tools, Paul and Elder (2009) explained the generic skills of critical thinking and defined it as a creation of analysis and evaluation of points of view which entails a commitment to developing problem-solving skills. Currently, the critical thinking skill has become widely popular in higher education, particularly in English language learning. Language learning can be a means to deliberate critical thinking skills and it is essential for university students (Yousefi & Mohammadi, 2016). Critical thinking skills are based on the structure of the dimensions of the

cognitive process by Bloom's Taxonomy. The core ideas have been revised as they consist of remembering, understanding, applying, analyzing, evaluating, and creating. The dimensions can be elaborated in reading comprehension activities, starting from recognizing and recalling information, organizing, making judgements, generating and producing (Anderson & Krathwohl, 2001).

The practical guides of critical thinking are concepts and tools by Paul and Elder (2009). The attributes of critical thinking for critical reading focus on the aspects of clarity when students are assessed in the pre-reading activity to elaborate ideas, provide an authentic example, and explain with specific illustrations. In the aspects of accuracy, the students show the ability to differentiate true-false statements and verify their judgment. In the aspects of precision, students demonstrate their ability to give specific information. Besides, the students are required to relate the problems, the questions, and the issue in the reading text in the aspect of relevance. They should investigate the complexities of the problems and accentuate their ideas about the reading text from different perspectives in the aspect of depth. Finally, in the post-reading activity, students are assessed to construct the sense of the whole paragraphs from the evidence in the aspect of logic.

3. METHODS

3.1 Design

This study employed a quasi-experimental one-group pre-test and post-test design in order to improve students' critical thinking for critical reading with flipped classroom teaching model. Eight weeks of synchronous meetings were conducted to examine the students' critical thinking for critical reading. The questions were taken from the English for Economics and Business book (Yulian, 2020) with ISBN 978-602-74221-9-3 published by Universitas Muhammadiyah Pontianak. This coursebook was specifically designed for reading activities based on students' need analysis.

3.2 Participants

The participants of the study were 37 EFL learners in the English for Academic Purposes class at one private university in Pontianak, Indonesia. The students were enrolled in the class for one semester, consisting of 16 meetings with 80 minutes per meeting.

3.3 Instruments

There were three instruments used in this study. The first research instrument in this study was the rubric of critical thinking for critical reading. The research instrument adopted the rubric of critical thinking for critical reading by Paul and Elder (2009) that comprises six prompt elements of reading assessment, namely accuracy, clarity, precision, depth, relevance, and logic. The rubric of reading assessment ranges from 4 as the maximum score to 1 as the minimum score. The rubric generates that accuracy focuses on the skills to identify the main purpose and/or concepts in reading. The element of clarity underpins the skills to comprehend facts, data, or examples used

to support ideas in the reading. The element of precision elucidates the skills to identify the content-specific vocabulary. In addition, the element of depth corroborates the skills to demonstrate the complexity of understanding. The element of relevance emphasizes the skills to identify and generate a conclusion. Finally, the element of logic focuses on the skills to apply concepts and contents to wider contexts. The prompts of this reading assessment are suitable to assess students' critical thinking in critical reading for university students. This study assessed the students' critical thinking for critical reading in the pre-test with conventional teaching and the post-test with a flipped classroom teaching model. The reading test was taken from the coursebook of English for Economics and Business that consists of preliminary questions, five questions for scanning, five questions for skimming, five questions for comprehension, five questions for vocabulary building, and one question for inference. The assessment was measured by descriptive statistics using SPSS version 26.

The second research instrument was observation; a direct qualitative observation in teaching reading skills through the flipped classroom teaching model was conducted to connect the relevance of the rubric with the cognitive level of Bloom's taxonomy new model. The observation was examined by adopting The English Reading Comprehension Observation Protocol (ERCOP): EFL Reading Comprehension Observation Protocol (Smit et al., 2017).

The final research instrument was a questionnaire of students' perceptions on the use of flipped classrooms adapted from Karimi and Sanavi (2014), who researched the effect of the flipped model of instruction on EFL learners' reading comprehension: learners' attitudes in focus. A number of 15 items of the questionnaire were adapted out of 22 items to adjust to the objective of this study. The results of students' perception of the flipped classroom teaching model pointed to replicate results in terms of positive perception toward this model. However, this present study filled the gap from the previous research, which analyzed students' critical thinking for critical reading. The results can pave the way for flipped classroom teaching model directions in teaching English in higher education.

3.4 Data Collection

The data collection process consisted of subsequent procedures. Before flipped classroom, teaching model was implemented, the teaching and learning activity was conducted with the conventional way of teaching reading with silent reading. In the conventional class of teaching reading skills, the reading comprehension activities consisted of pre, whilst, and post-activity. A brainstorming activity was adopted to encourage students' interest in the subject matter. Afterward, the students were assigned to read the text silently. They were instructed to answer the coherent tasks in the reading text from skimming, scanning, guessing unknown words from context, and making inferences.

On the other hand, in flipped classroom teaching model, the students were assigned to conduct the preliminary task of reading practices in the coursebook of English for Economics and Business. The reading text was a multimodal text embedded with contextual and authentic pictures and corroborated with an instructional video. Before the class began, the lecturer posted a recorded material and a video on the subject matter in the learning management system three days before the synchronous teaching and learning occurred. The videos were the subsequent materials

consisting of instructional material, content materials, and handout of the reading text. Then, the students studied the video and answered the preliminary tasks to trigger their ideas on the subject matter. When the online teaching and learning took place, the lecturer and students discussed the questions in the brainstorming activity. Finally, the students were assigned to answer the tasks in the reading texts.

In the next meeting, this activity replicated the previous meeting activity. The final meeting was the implementation of a post-test where students were required to do several coherent tasks in the coursebook.

3.5 Data Analysis

For data analysis, the students were assessed based on the reading activities in the coursebook. The texts discussed was the text in the fields of economics and business which were relevant with the students' disciplines so that the implementation of the flipped classroom teaching model could stimulate students' critical thinking skills towards current economic issues.

The data from the tests were analyzed based on the aim of the study by firstly conducting the normality test. The descriptive statistics of the mean score in the pre-test and post-test were calculated. Lastly, paired sample test was conducted to examine the effectiveness of flipped classroom teaching model to improve students' critical thinking in critical reading. This was done to answer the first research question. The data from the questionnaire was also analyzed and computed through statistical processes to answer the second research question. The mean scores of the questionnaires ranged from neutral (3) to agree (4) from the Likert scale of strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

4. RESULTS AND DISCUSSION

4.1 The Results of Pre-test and Post-test

The first procedure after the test was to conduct the normality test in order to show the probability value (Sig.) for the pre-test and post-test. The probability value was higher than $\alpha = 0.05$ which means that data were distributed normally. After the normality test was conducted, the paired samples test of the pre-test and the post-test in one group was used to test the comparison between the scores. The parametric statistics of the t-test, such as mean score, and standard deviation of the pre-test and post-test are shown in Table 1.

Table 1. T-test of paired samples statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	12.4865	37	3.84145	.63153
	Post-test	18.3243	37	3.72718	.61275

Table 1 shows the measurement of the pre-test and the post-test with the flipped classroom teaching model intervention. It was to determine the mean score difference between students' critical thinking for critical reading before the application of flipped classroom teaching model. The maximum score of critical thinking for critical reading

assessment is 24 since the highest level of each element is 4 out of 6. The improvement of students' critical thinking for critical reading was significant from the pre-test's mean score (12.4865) to the post-test's mean score (18.3243). This result is relevant to some empirical studies mentioned beforehand (Abaeian and Samadi, 2016; Ebadi & Rahimi, 2018; Hashemifardnia et al., 2018). These studies revealed that the use of flipped classrooms improved students' critical thinking in the aspects of analysis, evaluation, inference, and vocabulary used in reading skills. The variables of critical thinking are consistent with the rubric of critical thinking for critical reading coined by Paul and Elder (2009).

Table 2. Paired samples test (pre and post-tests in one group).

		95% Confidence Interval of the Difference							
		Mean	Std. Dev.	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Pair 1	Pretest-Posttest	-5.83784	.55345	.09099	-6.02237	-5.65331	-64.162	36	.000

In Table 2, a paired sample t-test is shown to explain the significance of the comparison of the pre-test and post-test in one group. Since the Sig (.000) is less than 0.05, the null hypothesis was rejected. The findings showed that the students outperformed in the post-test after receiving treatment through flipped classroom teaching model. When the null hypothesis was rejected, the alternative hypothesis was accepted which means that there is a significant difference between the score of students' critical thinking in the pre-test and the post-test.

4.1.1 Mean score of pre-tests of students' critical thinking for critical reading

To analyze the students' critical thinking for critical reading, the researcher conducted an assessment in reading comprehension activities. The first test assessed students' critical thinking for critical reading after the conventional way of teaching reading from pre, whilst, and post-reading activity. In the pre-test, the students read the text silently without having a preparation about the topic. After reading the text, they answered the questions in every task subsequently. Table 3 shows the descriptive statistics of students' critical thinking for critical reading with conventional teaching.

Table 3. Descriptive statistics of students' critical thinking for critical reading with conventional teaching.

	N	Minimum	Maximum	Mean	Std. Deviation
Accuracy	37	1.00	3.00	1.8378	.89795
Clarity	37	1.00	3.00	2.1622	.55345
Precision	37	1.00	3.00	2.2432	.59654
Depth	37	1.00	3.00	2.2432	.59654
Relevance	37	1.00	3.00	2.1622	.55345
Logic	37	1.00	3.00	1.8378	.89795
Valid N (listwise)	37				

As shown in Table 3, the majority of students from a total of 37 students had a low level of accuracy to identify the main purpose and/or concepts in reading with a mean score of 1.8378. They had high inaccuracy with incorrect ideas stated in the reading text. Some of them had low accuracy in terms of the purposes and concepts stated. For the aspect of clarity, students had minimal use of the facts, data, or examples from the reading text (2.1622). Students had low precision, an attempt to use the content-specific vocabulary with minimal uses and visible incorrectness with a mean score of 2.2432. Most of the students also had a limited understanding of depths in making connections among purpose, concepts, and/or support in the reading (2.2432). In the element of relevance, students had low relevance with the basic conclusion stated in the reading text with the mean score (2.1622). The last attribute of critical thinking for critical reading is logic, where the majority of the students had a low application of contexts and contents to other broad contexts (1.8378). The findings implied that the students had a low level of critical thinking in critical reading with conventional teaching. In conventional teaching, students had limited time to explore the subject matter and to employ their prior knowledge. Critical thinking for critical reading requires extra effort and persistent practice.

4.1.2 Mean score of post-tests of students' critical thinking for critical reading

After the conventional way of teaching was conducted, the researcher employed the flipped classroom teaching model for two weeks in the same class. Table 4 displays the improvement of students' critical thinking for critical reading after the use of flipped classroom teaching model:

Table 4. Descriptive statistics of students' critical thinking for critical reading with flipped classroom teaching model.

	N	Minimum	Maximum	Mean	Std. Deviation
Accuracy	37	2.00	4.00	2.8378	.89795
Clarity	37	2.00	4.00	3.1622	.55345
Precision	37	2.00	4.00	3.2432	.59654
Depth	37	2.00	4.00	3.2432	.59654
Relevance	37	2.00	4.00	3.1622	.55345
Logic	37	2.00	4.00	2.6757	.85160
Valid N (listwise)	37				

From Table 4, the mean score showed that there were some improvements in students' critical thinking for critical reading after the use of the flipped classroom teaching model. There was an improvement of the minimum level of students' critical thinking in critical reading before the use of flipped classrooms from level 1 to level 2. The differences in the minimum and maximum scores happened before and after the post-test because there was an improvement of students' critical thinking for critical reading in the post-test. In terms of accuracy, the majority of the students were able to have some accuracy with the purpose and concept of the reading text, but there were still subtle inaccuracies (2.8378). In the conventional way of teaching reading, the students had a low level of accuracy to find the main purpose of the reading. For the aspect of clarity, the students improved their ability to make some correct use of the facts, data, or examples from the reading text (3.1622). They had high inaccuracy with incorrect ideas especially in getting the main ideas before flipped classroom was

implemented. Some students showed that they were able to make some precision to incorporate content-specific vocabulary. They can also paraphrase correctly (3.2432). They could hardly paraphrase the sentences with visible incorrectness in the conventional way of teaching reading. Furthermore, after the flipped classroom teaching model, students could generally understand the relations among the purpose, concepts, and/or supporting details in the reading (3.2432) while previously they had limited understanding of depths in making connections on those attributes in the text. For the element of relevance, students were able to make some relevance with basic conclusions, but it was limited to the broad context of concepts (3.1622). The final attribute of critical thinking for critical reading also showed students' improvement in terms of the application of concepts and contents to the broad contexts. Students had the logic of some application of concepts, but they still used generic ideas (2.6757).

There was a significant improvement in students' critical thinking for critical reading from conventional classroom to flipped classroom teaching model. With the flipped classroom teaching model, they initially watched and studied the materials. They conducted the tasks at home while the lecturer was ready to give feedback, and it helped them on tough topics before coming to the class (Rakesh Babu & Vivekha, 2019). The results indicated that they improved in critical thinking for critical reading after a series of implementation of the flipped classroom teaching model.

4.1.3 Direct qualitative observation on students' critical thinking for critical reading

Based on the observational sheet that was analyzed descriptively, students' critical thinking for critical reading in the aspect of accuracy was in the level of remembering and understanding where students retrieved relevant knowledge based on the instructional videos given prior to the online class. As explained in the elaboration of the dimension of Bloom's taxonomy by Anderson and Krathwohl (2001), students experienced recalling dimension in the pre-reading activity and attempted to explain the ideas based on the material they previously learned. For the aspect of clarity, students also experienced the dimension of remembering and understanding where they could recognize the data, facts, and examples in the reading text, and classify the attributes of information of reading text in the whilst-reading activity. In the aspect of precision of critical thinking for critical reading, students experienced the cognitive level of applying and analyzing.

In the whilst-reading activity, students could use, organize, and differentiate content-specific vocabulary from the reading and the lecture. For the element of relevance, students could generate and organize logical conclusions, criticize, and make a judgment based on the reading text.

Finally, students experienced the dimension of generating, planning, and producing coherent ideas in the post-reading activity in the element of the logic of critical thinking for critical reading. This finding is in line with Minakova (2014) who found that the block schemes application from Bloom's taxonomy allowed non-language department students to improve their skimming and scanning skills because of the block-chain of analyzing, synthesizing, and evaluating skills.

During the application of flipped classrooms, when the instructional videos and materials were given to the students, they had to learn the materials before attending the online class. They were assigned to answer the preliminary questions. In synchronous learning, the reading comprehension activities consisted of skimming,

scanning, and making inferences. The ability of skimming in reading comprehension skills is essential as it can catalyze higher reading proficiency for students. The identification of the main idea does not only assist the students to comprehend the text but also guides them to recall the content of the text later on (Yusuf et al., 2017). They also practiced scanning skills to grasp specific information stated in the text. With the flipped classroom teaching model, they could link their ideas to their prior knowledge, so it was more accessible for them to make inferences about the reading text.

4.2 Students' Perception of the Flipped Classroom Teaching Model

The second research question was to find out the students' perception of the use of flipped classroom teaching model in reading skills. The attributes of students' perception of the flipped classroom teaching model are shown in Table 5.

Table 5. The mean scores of students' perceptions of the flipped classroom teaching model.

Items of Questionnaire	Mean Score
The flipped instruction assists me to get ready for my class in advance.	4.00
Through the instructed video, I have adequate time to understand the topic of the reading.	4.05
I would feel more confident to ask for clarification after watching the instructed video.	4.11
I would feel more confident about my learning with the flipped classroom teaching model.	3.90
The flipped video makes it easier for me to understand the reading text.	4.00
My performance on reading tests is better as I have more time to apply the learning in class.	3.97
I feel I have full control of my learning through the flipped instruction.	4.00
The quality of my communication skills in English has improved.	3.91
Classroom time was used effectively.	3.89
My English classroom provides more opportunities than my other classes to communicate with other students.	4.00
Online resources help learn English.	3.97
I think the online videos/materials used in my English class so far are effective in helping me learn.	3.91
If given a choice, I would continue learning English with the flipped classroom model.	3.94
I think the online videos/materials used in my English class so far are effective in helping me learn.	3.97
I like submitting assignments and receiving teacher feedback online through Google class.	3.83

The first attribute shows that students had a positive perception of the flipped classroom teaching model in terms of assisting in better preparation in reading class (4.00). Students could watch the materials video outside the classroom to get engaged in the activities in advance so that both lecturer and students could apply more interactive and lively tasks (Basal, 2015). Through this model, students also had sufficient time to comprehend the subject matter of the reading text (4.05). They felt more confident to ask for clarification after watching the instructed video (4.11), and they also felt more confident learning with flipped classroom teaching model (3.90).

From this model, students also shared a positive perception that it helped them understand the reading text easier (4.00), their performance on reading tests was improved (3.97), and they obtained full control of their learning (4.00). They could have self-paced learning and their learning autonomy. The findings corroborated with [Lestari \(2021\)](#) who analyzed the benefits of the flipped classroom that perceived students affirmed this model assist them to expand knowledge independently, motivates their autonomy, and engagement in learning. The flipped classroom teaching model also gave students encouragement in task completion and more time to do activities of substantive inquiry and analysis ([Schmidt & Ralph, 2016](#)). More compelling data also showed that they perceived and improved their quality of communication skills through this teaching model (3.91) which was closely related to providing them more opportunity to communicate rather than other classes (4.00). As an implication, they would like to continue learning English with the flipped classroom teaching model (3.94) where they thought the online videos/materials used in English class so far were effective in helping them learn (3.97).

5. CONCLUSION

Critical thinking should be the basis of English language teaching and learning in higher education because university students must equip themselves with 21st-century life skills apart from the pedagogical skills in their field of studies. This study showed that flipped classroom teaching model improved students' critical thinking in reading skills specifically in accuracy, clarity, precision, depth, relevance, and logic. Exposure to instructional videos and materials helped them apply logical concepts and contents to the wider contexts of reading. Furthermore, there were improvements in using correct data, facts, and examples in skimming and scanning. Students could paraphrase correctly with minimal content-specific vocabulary. Flipped classroom teaching model further improved their engagement with materials. Concerning some constraints and limitations of online learning, flipped classroom teaching model can be the solution to provoke conducive teaching and learning activities through online platforms. The effectiveness of teaching and learning activities cannot merely rely on online activities. Students must be able to lead independent learning both inside and outside the classroom.

The strength of this study was on the exploration of students' level of critical thinking skill in reading subskills in details such as in skimming, scanning, making inferences, and guessing unknown words from context. Conducting the pre-test and the post-test in one group with purposive sampling was the main limitation of this study. Future research should conduct an in-depth implementation of the flipped classroom teaching model for students' critical thinking skills in comprehensive reading subskills. The effect of the flipped classroom teaching model can be assessed comprehensively by involving an experimental and a control group. Further research also needs to investigate the constraints of implementing the flipped classroom teaching model to improve critical thinking skills.

ACKNOWLEDGMENTS

The author expresses gratitude to the *Direktorat Pengelolaan Kekayaan Intelektual Deputy Bidang Penguatan Riset dan Pengembangan, Kemenristek/BRIN* (Directorate of Intellectual Property Management, Deputy for Research and Development Strengthening, Ministry of Research and Technology), for facilitating the *Pendampingan Artikel Ilmiah Workshop* (Scientific Article Assistance Workshop). The author also thanks Prof. Ali Saukah for his valuable guidance and correction to improve this manuscript.

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