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# The Flipped Classroom: Exploring Critical Thinking for Critical Reading of EFL Learners at Higher Education

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## Abstract

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*The immersion of the flipped classroom teaching model in language learning in both blended and online learning is indispensable. This model can cope with the constraints of time, space and materials in language learning. Also, flipped classroom can accommodate learning activities for students' critical thinking skills. Therefore, this study aimed at exploring the level of critical thinking for critical reading through flipped classroom teaching model of EFL learners at higher education. This study employed a mixed-method sequential explanatory with test of reading skill based on the framework of critical thinking for critical reading with paired t-test of pretest-posttest and questionnaires of perception toward flipped classroom teaching model. The results of the assessment examined that the flipped classroom teaching model could enhance students' critical thinking for critical reading in the aspects of accuracy, clarity, precision, depth, relevance, and logic in reading skill activities. Students also showed a positive perception on the implementation of this model. It implies that critical thinking for critical reading skill needs supportive teaching and learning environment that can allow students to have self-study prior to the class so that the online learning can be effective to synergize the application of flipped classroom with critical thinking skills in reading.*

**Keywords:** flipped classroom, critical thinking, critical reading

## 1. INTRODUCTION

The development of online learning through inverted model has become prevalent in language learning. English language teaching and learning at higher education must be able to adapt to online and blended learning using Learning Management Systems. Teaching English as a dynamic language nowadays demands

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innovation because foreign language acquisition is the social process of engagement and action. 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 obtain prior knowledge and information from instructional videos before the class, and apply the theory directly to the classroom (Scott Chen Hsieh et al., 2016). Flipped classroom can benefit less time for explicit teaching <sup>7</sup> 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). In its implementation, this model adopts a collaborative instruction model so that students can get the opportunity to be directly involved in the learning process by integrating learning instructions, aspects of the learning background, learning content and activities (Mehring, 2017; Yousefi & Mohammad <sup>7</sup> 2016).

Some studies have been conducted to examine the impact of flipped classroom in <sup>12</sup> ching English language skills such as Hung (2015) who investigated the effects of 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 on the learning environment but the direct effect of learning environment to the academic outcomes was undescribable. Another study by Hashemifardnia et al., (2018) focused on exploring the impact of flipped classrooms of junior high students on reading comprehension without focusing to particular reading subskills. In a different study, Ebadi & Rahimi, (2018) explored the effect of WebQuest-based classroom on students' learning critical thinking that focused on standardized writing skill based on the use <sup>10</sup> web-based inquiry-oriented lesson. Abaeian & Samadi, (2016) investigated the impact of flipped classroom on reading comprehension on dif <sup>26</sup> ferent level of reading comprehension skills of EFL learners. Therefore, this present study attempted to focus on the effect of flipped classroom that exploring the level of students' critical thinking skills particularly to reading subskills for university students with homogenous English proficiency skills.

In English for Academic Purposes (EAP) at higher education, reading is the core skills of teaching and learning English. Based on the constructivism learning theory, students at higher education must have life-skills; one of them is critical thinking skills. Critical thinking skills reflect in problem-solving skill, 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 read critically (Wilson, 2016a). Critical thinking skills involves skill to identify problems based theoretical assumptions, skill to analyze, comprehend, and make inferences with inductive-deductive logic, and skills to make a valid and reliable evaluation and assumption (Hosseini et al., 2012). Critical thinking skills can be integrated into reading com <sup>5</sup> prehension skill where students can 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). In this online learning, lecturer created instructional videos about the material to be discussed in the classroom so that the students will get initial exposure to better preparation and participation in learning activities. By this means, students can be independent, dynamic, and productive in the process of learning where they can learn either in or outside the classroom

The research questions raised in this study were to find out the level of students' critical thinking for critical reading in English for Academic (EAP) class. The students were assessed based on the reading activities in the coursebook. The texts discussed was the text the fields of economics and business and relevant with students' disciplines so that the implementation of the flipped classroom teaching model could stimulate students' critical thinking skills towards current economic issues. Also, the study examined the students' perception on the use of flipped classroom in reading comprehension skill to provide reflection overview a evaluation from the effect of the flipped classroom teaching model to the level of students' critical thinking skills. The findings of the study are also beneficial to provide information on the level of students' critical thinking for critical reading in order to better design online teaching and learning activities embedded with critical thinking skills for university students.

## 2. LITERATURE REVIEW

In recent years, researches focused on flipped classroom has become a spotlight in language teaching and learning particularly in blended learning. The researches do not merely focus on the language skills in isolated perspectives. Flipped classroom has been a popular model integrated with reading activities. Few studies have attempted to examine the use of flipped model to improve reading skills, but rare of them underpin the attributes of critical thinking for critical reading.

### 2.1. The flipped classroom

The concept of flipping classroom has emerged originally from the idea of reversing homework for 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. Furthermore, this model provides a supportive environment to give students deeper prior knowledge in advance before coming to the class. The most common practice of flipping is making the video in various ways consists of a wide variety of contents relevant to the subject. A variety of content and instructional videos is beneficial to make the students more engaged and interested into the topic and they can be flexible to manage these instructional videos (M. Karimi & Hamzavi, 2017a; Schmidt & Ralph, 2016). Currently, numerous practices of teaching at higher education with flipped classroom have emerged rapidly because of an array of advantages. First and the foremost, is the students obtain assistance to learn tough topics when they need to expand prior knowledge on the subject matter and it scaffolds consistently to create autonomous learning environment for students (Rakesh Babu & Vivekha, 2019). They can have a rigorous exploration to get an in-depth insight about the material. Guided instructional materials through content video can trigger the skills for better preparation to the classroom. Another study conducted by Alsowat (2016) explained that the impact of flipped classroom contributed a favourable result in terms of improving English students higher-order thinking skills, engagement and satisfaction. This study compared the effect of this

model between a control group and experimental group at higher education level but was not specifically focused on particular language skills and elements.

## 2.2. Critical thinking for critical reading

Critical thinking is the blueprint of pedagogy activities in higher education and it becomes advisable for educators to accommodate critical thinking activities for critical reading for university students (Wilson, 2016b). In the miniature of critical thinking: concepts and tools, Paul and Elder (2006) explained the generic skills of critical thinking and defined it as a creation of analysis and evaluation point of views which entails commitment to develop 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 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 started from recognizing and recalling information, organizing, making judgements, generating and producing (Anderson et al., 2001).

The effect of flipped classroom on the improvement of reading comprehension was examined. A study by M. Karimi & Hamzavi (2017b) sought to investigate the implications of this model on reading comprehension simultaneously with the EFL students' attitude particularly to EFL students at private language college. This study also examined that flipped model contributed a positive effect on students' attitude in terms of engagement in the classroom. The findings of this study revealed that flipped classroom did not only enhance the reading comprehension skill but also triggered students' motivation in language learning. Similarly, Alsowat (2016) examined the impact of 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 low-order thinking based on the cognitive process of Bloom's Taxonomy. These two studies focused on the EFL students' engagement and satisfactions particularly students who majored in English departments. The present study focused distinctly to examine the impact of flipped classroom teaching model in English for Academic Purposes Class (EAP) in the setting of Non-English Department students. This study explored the level of critical thinking for critical reading based on the practical guides of critical thinking: concepts and tools by Paul and Elder (2006). The attributes of critical thinking for critical reading were focused on the aspects of clarity when students were assessed in pre-reading activity to elaborate ideas, provide an authentic example, and explain with specific illustrations. In the aspects of accuracy, the students showed the ability to differentiate true-false statements and verify their judgment. In the aspects of precision, students demonstrated their ability to give specific information. Besides, the students were required to relate the problems, questions and the issue in the reading text in the aspect of relevance. They investigated the complexities of the problems in the aspect of depth. Finally, in the post-reading activity, students were assessed to accentuate their ideas about the reading text from another perspective in the aspect of breath. They constructed the sense of the whole paragraphs from the evidence in the aspect of logic.

### 3. METHODS

This study employed a mixed-method sequential explanatory with quantitative data in the first stage and qualitative data in the sequence. The quantitative phase was administered by assessing students' reading skill under the framework of critical thinking for critical reading by Paul and Elder (2006). The adapted rubric comprises six prompt elements of reading assessment, namely accuracy, clarity, precision, depth, **19** evance, and logic. The prompts of this reading assessment are **19** suitable to assess students' critical thinking in critical reading for university students. **This study** assessed the students' critical thinking for critical reading in pretest with conventional teaching and posttest with a flipped classroom teaching model. The assessment was measured by descriptive statistics using SPSS version 26. In the second phase, direct qualitative observation in teaching reading skill through the flipped classroom teaching model was conducted to connect the relevance of the rubric with the cognitive level of Bloom's taxonom **16** ew model. The final phase was to investigate students' perception of the utilization of the flipped classroom teaching model in reading comprehension skill. **The** participants were the EFL learners at Management Program Faculty of Economics and Business Universitas Muhammadiyah Pontianak consisting of 37 students.

### 4. RESULTS AND DISCUSSION

**The** initial results synthesized the results of students' critical thinking for critical reading. **The** findings compared the **3** analysis of students' critical thinking for critical reading before and after using the flipped classroom teaching model. In the conventional class of **teaching** reading skill, the reading comprehension activities consisted of pre, whilst, and post-activity. A brainstorming activity was adopted to encourage students' interest on the subject matter. Afterwards, the students were assigned to read the text silently. They had to answer the coherent tasks in the reading text from skimming, scanning, guessing unknown words from context, and making inferences. Meanwhile, 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 is a multimodal text embedded with contextual and authentic pictures, and corroborated with 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 acti **5** y. Finally, the students were assigned to answer the tasks in the read **11** texts. **To examine the level of students' critical thinking** in critical reading, the t-test was conducted to comp **6** the results of conventional way of teaching reading in the pretest, and the results of the flipped classroom teaching model in the posttest. **The** results can be seen as follows:

**Table 1. T-Test. Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	12.4865	37	3.84145	.63153
	Posttest	18.3243	37	3.72718	.61275

Table 1 T-Test paired sample statistics showed the measurement of two different times pre-test and post-test with intervention of the flipped classroom teaching model. It was to determine the evidence of mean score difference between students' critical thinking for critical reading either with conventional teaching or the 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 elements. The improvement of students' critical thinking for critical reading was significant from the pretest mean score (12.4865) to the posttest mean score (18.3243). This result is relevant to some empirical studies mentioned beforehand (Abaeian & Samadi, 2016; Ebadi, Rahimi, 2018; Hashemifardnia et al., 2018). These studies revealed that the use of flipped classroom improved students' critical thinking in the aspects of analysis, evaluation, inference and vocabulary use in writing skills. These variables of critical thinking are consistent with the rubric of critical thinking for critical thinking coined by Paul and Elder (2006). In another study by Hung, (2015), the use of flipped classroom showed that the composition of learning materials embedded with WebQuests as flipped model improve students' performance but only in general without specifically focused on certain language skills. 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.

#### **4.1 Mean score of students' critical thinking for critical reading before flipped classroom teaching model**

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 with the conventional way of teaching reading from pre, whilst and post-reading activity. In conventional way of teaching reading, the students read the text silently without having a preparation about the topic. Immediately, after reading the text, they answered the questions in every task subsequently. The rubric score for critical thinking for critical reading ranges from 4 as the highest level to 1 as the lowest level. The assessment consists of six attributes of critical thinking for critical reading, such as accuracy, clarity, precision, depth, relevance, and logic. An overall result of this assessment can be seen in the following table:

**Table 2. 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				

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Table 2 descriptive statistics of students' critical thinking for critical reading with conventional teaching showed that the majority of students from a total of 37 students have the low level of accuracy to identify the main purpose and/or concepts in reading with the mean score (1.8378). They have high inaccuracy with incorrect ideas stated in the reading text. Some of them have low accuracy in terms of the purposes and concepts stated. For the aspect of clarity, students have minimal use of the facts, data or examples from the reading (2.1622). Students have low precision, an attempt to use the content-specific vocabulary with minimal uses and visible incorrectness with the mean score (2.2432). Most of the students also have 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 have 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 have a low application of contexts and contents to other broad contexts (1.8378). The findings implied that students have a low level of critical thinking in critical reading with conventional teaching. In conventional teaching, students have limited time to explore the subject matter and to link to their prior knowledge. Critical thinking for critical reading requires extra efforts and persistent practices.

#### **4.2 Mean score of students' critical thinking for critical reading after flipped classroom teaching model**

After the conventional way of teaching was conducted, the researcher employed the flipped classroom teaching models in two weeks meeting. For the first meeting, instructional videos and materials were given to the students. They had to learn the materials before coming to the online class. They had 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 skill 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 guide them to recall the content of the text later on (Yusuf et al., 2017). Students also practice scanning skill to grasp specific information stated in the text. With the flipped classroom teaching model, students can link their ideas to information they have learnt before the class, so it was more accessible from them to make inferences about the reading text. In the next meeting, this activity replicated the previous meeting activity. The final activity of each meeting was that the students had



to do a coherent task in the reading text. A comprehensive analysis of students' critical thinking for critical reading can be explained in the following table:

**Table 3. 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 3, 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. In terms of accuracy, the majority of the students were able to have some accuracy with the purpose and concept of the reading, but subtle inaccuracies (2.8378). In conventional way of teaching reading, students had low level of accuracy to find the main purpose of the reading. For the aspect of clarity, students improved their ability to make some correct use of the facts, data, or examples from the reading (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 conventional way of teaching reading. Furthermore, after the flipped classroom teaching model, students can generally understand the relations among the purpose, concepts, and/ or support in the reading (3.2432) where previously they had limited understanding of depths in making connections on those attributes in reading text. For the element of relevance, students were able to make some relevance with basic conclusions, but it is 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 concepts and contents to the broad contexts. Students have the logic of some application of concepts, but they still use generic ideas (2.6757). There was a significant improvement in students' critical thinking for critical reading from conventional classroom to flipped classroom teaching model. In a conventional classroom, students were given miscellaneous tasks with immediate confusion where students were unable to clarify. With the flipped classroom teaching model, students initially watched and studied the materials. They conducted the tasks at home while the lecturer was ready to give feedback, and it can help students on tough topics before coming to the class (Rakesh Babu & Vivekha, 2019). The results indicated that students obtained an improvement of critical thinking for critical reading after a series of implementation of flipped classroom teaching model.

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#### 4.3 Students' perception of the flipped classroom teaching model

3 The second research question raised was to find out the students' perception on the use of flipped classroom teaching model in teaching reading. A set of

questionnaires was distributed to the students. The questionnaires were adapted from Karimi & Sanavi (2014) who researched the effect of the flipped model of instruction on EFL learners' reading comprehension: learners' attitudes in focus. Fifteen items of the questionnaire were adapted out of 22 questionnaires to adjust to the objective of this study. The results of students' perception of the flipped classroom teaching model pointed replicated 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 of flipped classroom teaching model directions in teaching English for higher education. The attributes of students' perception of the flipped classroom teaching model can be seen as follow:

**Table 5. Mean Score of Students' Perception of Flipped Classroom Teaching Model**

No.	Items of Questionnaire	Mean Score
1	1. The flipped instruction assists me to get ready for my class in advance.	4,00
2	2. Through the instructed video, I have adequate time to understand the topic of the reading.	4,05
3	3. I would feel more confident to ask for clarification after watching the instructed video.	4,11
4	4. I would feel more confident about my learning with the flipped classroom teaching model.	3,90
5	5. The flipped video makes me easier for me to understand the reading text.	4,00
6	6. My performance on reading tests is better as I have more time to apply the learning in class.	3,97
7	7. I feel I have full control of my learning through the flipped instruction.	4,00
8	8. The quality of my communication skills in English has improved.	3,91
9	9. Classroom time was used effectively.	3,89
10	10. My English classroom provides me more opportunity than my other classes to communicate with other students.	4,00
11	11. Online resources are helpful in learning English.	3,97
12	12. I think the online videos/materials used in my English class so far are effective in helping me learn.	3,91
13	13. If given a choice, I would continue learning English with the flipped classroom model.	3,94
14	14. I think the online videos/materials used in my English class so far are effective in helping me learn.	3,97
15	15. I like submitting assignments and receiving teacher feedback online through Google class.	3,83

The mean scores of the questionnaires ranged from neutral (3) to agree (4) from the likert-scale: strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1). The first attribute showed that students have a positive perception of the flipped classroom teaching model in terms of assisting in better preparation in reading class (4.00). Students can watch the materials video outside the classroom to get engaged in the activities in advance so that both lecturer and students can apply more

interactive and lively tasks (Basal, 2015). Through this model, students also have sufficient time to comprehend the subject matter of the reading text (4.05). Students feel more confident to ask for clarification after watching the instructed video (4.11), and they also feel more confident learning with flipped classroom teaching model (3.90). From this model, students also shared positive perception that it helps them understand the reading text easier (4.00), their performance on reading tests are improved (3.97), and they obtain full control of their learning (4.00). Students can have self-paced learning and their learning autonomy. Flipped classroom teaching model gives 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 students perceived and improved their quality of communication skills through this teaching model (3.91) which is closely related to providing students more opportunity to communicate rather than other classes (4.00). As the implication, students would like to continue learning English with flipped classroom teaching model (3.94) where they think the online videos/materials used in English class so far are effective in helping them learn (3.97).

#### **4.4 Direct Qualitative Observation on Students' Critical Thinking for Critical Reading**

Direct observation aimed to examine the correlation between the applications of students' critical thinking for critical reading with the cognitive levels of Bloom's taxonomy new model. It was conducted to ensure that the rubric of critical thinking for critical reading are relevant to cognitive level of Bloom's taxonomy new model. Students' critical thinking for critical reading in the aspect of accuracy are 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 et al., (2001), students experienced recalling dimension in the pre-reading activity and attempted to explain the ideas based on the material they previously learnt. For the aspect of clarity, students also experienced the dimension of remembering and understanding where they can recognize the data, facts, and examples in the reading text, and can 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 can use, organize, and differentiate content-specific vocabulary from the reading and the lecture. For the element of relevance, students can generate and organize logical conclusion, criticize, and make a judgement 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.

## **6. CONCLUSION**

Critical thinking should be the basis of English language teaching and learning at higher education because university students must equip themselves with 21<sup>st</sup> century life-skills apart from pedagogical skills in the field of study. The results showed that the use of flipped classroom teaching model can assist students to improve critical thinking skills in reading in cognitive levels of Bloom Taxonomy new model for instance in evaluating and creating. Although this method used in single time

series, students showed improvement involving the attributes of critical thinking for critical reading such as accuracy, clarity, precision, depth, relevance, and logic. The exposure of instructional videos, and materials help them to apply logic concepts and contents to the wider contexts of reading. They also obtained improvement to use correct data, facts, and examples in skimming and scanning activity. They can also paraphrase correctly with minimal content-specific vocabulary. Furthermore, students also showed positive perceptions on the implementation of the flipped classroom teaching model in terms of their engagement to the materials. Concerning some constraints and limitations of online learning, flipped classroom teaching model can be the solutions to provoke conducive teaching and learning activities through online platforms. The effectiveness of teaching and learning activity cannot merely rely on online activities. Students must be able to lead independent learning both in and outside the classroom.

The limitation of this study was the incidental time series of teaching reading comprehension skill before and after the flipped classroom teaching model. For future research, this study suggests to conduct an in-depth implementation of flipped classroom model in students' critical thinking skill, especially in speaking performance. 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 to improve students' critical thinking skills.

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#### REFERENCES

# 13%

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### PRIMARY SOURCES

- 1** Mehrnoosh Karimi, Raouf Hamzavi. "The Effect of Flipped Model of Instruction on EFL Learners' Reading Comprehension: Learners' Attitudes in Focus", *Advances in Language and Literary Studies*, 2017  
118 words — 2%  
Crossref
- 2** thailandtesol.org  
Internet  
80 words — 2%
- 3** "Flipped Classrooms with Diverse Learners", Springer Science and Business Media LLC, 2020  
52 words — 1%  
Crossref
- 4** Mustafa Braiek, Abdulhamid Onaiba. "The Effect of Using Flipped Classroom Model on Libyan University Students' English Learning", (Faculty of Arts Journal) - مجلة كلية الآداب - جامعة مصراتة, 2018  
38 words — 1%  
Crossref
- 5** A Kriswanto, Susanto, M Irvan. "The analysis of students' critical problem solving on circle-related questions using pesantren-based scientific approach", *Journal of Physics: Conference Series*, 2020  
34 words — 1%  
Crossref
- 6** "Frontier Computing", Springer Science and Business Media LLC, 2020  
33 words — 1%  
Crossref
- 7** "Technology in Education. Innovative Solutions and Practices", Springer Science and Business Media LLC, 2018  
31 words — 1%  
Crossref

8	N D Rosyidah, S Kusairi, A Taufiq, Y Affriyenni. "Profile of students' critical thinking processes on the topics of Hydrostatic Pressure and Archimedes' principle", Journal of Physics: Conference Series, 2020 Crossref	27 words — 1%
9	<a href="http://worldwidescience.org">worldwidescience.org</a> Internet	24 words — < 1%
10	<a href="http://pubs.sciepub.com">pubs.sciepub.com</a> Internet	24 words — < 1%
11	Jahangir Mohammadi, Hossein Barati, Manijeh Youhanaee. "The Effectiveness of Using Flipped Classroom Model on Iranian EFL Learners' English Achievements and Their Willingness to Communicate", English Language Teaching, 2019 Crossref	23 words — < 1%
12	Emine Özgür Şen, Kevser Hava. "Prospective middle school mathematics teachers' points of view on the flipped classroom: The case of Turkey", Education and Information Technologies, 2020 Crossref	18 words — < 1%
13	"Chaos, Complexity and Leadership 2017", Springer Science and Business Media LLC, 2019 Crossref	16 words — < 1%
14	<a href="http://www.uwec.edu">www.uwec.edu</a> Internet	16 words — < 1%
15	<a href="http://www.science.gov">www.science.gov</a> Internet	16 words — < 1%
16	Xin Yang, Jian Wang. "Chapter 9 Flipping the Secondary Classroom in China", Springer Science and Business Media LLC, 2020 Crossref	16 words — < 1%
17	<a href="http://www.ios-regensburg.de">www.ios-regensburg.de</a> Internet	13 words — < 1%

- 18 "Integrating Engineering Education and Humanities for Global Intercultural Perspectives", Springer Science and Business Media LLC, 2020  
Crossref 12 words — < 1%
- 
- 19 Sri Haryati, Diyah Nur Hidayati. "Hoax News: Promoting the Students' Critical Thinking in Critical Reading Class", Register Journal, 2017  
Crossref 12 words — < 1%
- 
- 20 ijhalal.org  
Internet 12 words — < 1%
- 
- 21 N I Maulida, H Firman, L Rusyati. "Profile of Students' Critical Thinking Skill Measured by Science Virtual Test on Living Things and Environmental Sustainability Theme", Journal of Physics: Conference Series, 2017  
Crossref 11 words — < 1%
- 
- 22 risbang.ristekbrin.go.id  
Internet 10 words — < 1%
- 
- 23 M Aini, Suratno, I N Asyiah. "Analysis of students critical thinking skills in junior high school on natural sciences based on the difference of learning styles", Journal of Physics: Conference Series, 2020  
Crossref 9 words — < 1%
- 
- 24 Afaf Mohammed AlJaser. "Effectiveness of Using Flipped Classroom Strategy in Academic Achievement and Self-Efficacy among Education Students of Princess Nourah bint Abdulrahman University", English Language Teaching, 2017  
Crossref 8 words — < 1%
- 
- 25 Novita Ratnasari, Sarwanto, Baskoro Adi Prayitno. "The role of students' critical thinking skills in junior high schools on chapter organism and its environment", Journal of Physics: Conference Series, 2020  
Crossref 8 words — < 1%

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26 Ibtihal Mahmoud Aburezeq. "The Impact of Flipped Classroom on Developing Arabic Speaking Skills", The Asia-Pacific Education Researcher, 2019 8 words — < 1%  
Crossref

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27 "Asian Research on English for Specific Purposes", Springer Science and Business Media LLC, 2020 6 words — < 1%  
Crossref

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