The effect of flipped digital classroom method using moodle and student engagement on reading comprehension

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Article Info

ABSTRACT

Research has shown that the traditional classroom setting may not be effective in promoting reading comprehension skills, and therefore, an alternative approach is needed. The flipped digital classroom method is one such approach that has gained popularity in recent years. This study aimed to analyze the effect of the flipped digital classroom method using e-learning material of Moodle and students' engagement on students' reading comprehension skills. This research used a quantitative approach with a quasi-experimental design factorial 3 x 2 pre-test-post-test non-equivalent control group. Observation sheets, questionnaires, and reading comprehension tests are some instruments used in this research. The data analysis used Two Way ANOVA. The results showed that the flipped digital classroom method using Moodle and student engagement affect reading comprehension skills. English lecturers should apply this method by building a pleasant online learning atmosphere so that student engagement and reading comprehension skills increase.

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Introduction

In recent years, there has been a growing interest in the use of flipped learning in the context of reading comprehension. A study by Bataineh and Al-Sakal (2021) found that flipped learning improved reading comprehension scores among college students. Another study by (Fulgueras and Bautista (2020) found that the flipped classroom method significantly improved reading comprehension skills in middle school students. There are four skills that students must master in learning English. They are reading comprehension skills, listening comprehension skills, speaking skills, and writing skills. In reading comprehension learning, students have to read actively and understand text which contains lecture material. Understanding study program texts in English aimed to invite students to understand various learning sources of English texts. When studying English, students are often required to understand a variety of sources, including program texts, in order to develop their skills (Brown et al., 2018).

Learning reading skills to students require time and effort from students to practicing. The reading comprehension skills that students must have are mastery of vocabulary, grammar, and understanding the

meaning of words based on textual and contextual (Abid, 2020). In addition to understanding literal meanings, students must also be able to understanding implied senses. To give students more time to practice reading English text reading, lecturers often assign assignments to students early to complete reading comprehension questions at home. After they completed the task, the lecturer can hold face-to-face online class meetings. Discussions usually focus on discussions and questions and answers about the assigned economic material. This discussion aims to find the truth of various understandings that emerge in the form of student opinions. This method is also called the flipped classroom method. This method influenced student engagement stated by Gilboy et al., (2015). They said that the flipped classroom method with an innovative pedagogical approach that focuses on student-centered teaching affect students 'engagement and learning outcomes of students' reading comprehension.

Online learning based on digital technology has become urgent during the COVID-19 pandemic. This technology can support all distance learning activities without having to go to class at school. Online learning research by Sim et al., (2021) revealed that four main factors facilitate English online learning. They are English performance, enthusiasm, self-efficacy, and satisfaction. All factors affect the ' speed of delivery of online teaching and learning, student attitudes, struggles, and pressures of online learning modes. The study ensures that online learning as an alternative pedagogy in the era of COVID-19 can be an option for teachers to increase learning outcomes.

Guthrie & Klauda, (2014) said their research of the reading class effect, engagement, and motivation of adolescents on understanding informational texts. They reveal that contextual classroom instruction is more influential than traditional did in teaching reading comprehension at school. In contrast, to the findings, Connor et al., (2009) reveals no influence research-based learning instruction, assessment, training, and program evaluation on student engagement and reading comprehension skills. Each class demonstrated substantially varying students' reading comprehension skills. The effect of instruction depends on the scores observed and the students' vocabulary and oral reading fluency. Research by Ja'afar et al., (2021) revealed that teaching reading with the Computer-Assisted Repeated Reading increased students' reading fluency and comprehension. This computer-based teaching can help teachers and students improve their reading comprehension skills.

Likewise, McElhone, (2012) examines the learning engagement between teachers and students during reading comprehension. He analyzed the patterns of interaction between teachers and students in supporting their achievement to understanding the reading engagement did not influence each other. The research focused on understanding the conceptual press discourse. The interactions observed were the ability to clarify and elaborate on understanding the text. The researcher revealed that there was no influence on the pattern of teacher interaction with student engagement.

Various information from the results of the student engagement research reported different findings. They did not always have a significant and positive relationship. For this reason, it is necessary to re-research as recommended by Gilboy et al., (2015) about the need for further research to find out how to interact with students 'engagement and the flipped classroom method towards improving students' reading comprehension skills.

The previous research by Herlindayana et al., (2017) concluded there was the effect of implementing the flipped classroom method on improving students' reading comprehension. Kawinkoonlasate, (2019) also reported that the flipped classroom method for EFL and ESL students in Thailand proves that it can affect students' English language skills. In contrast, the research by Syafitri, (2014) revealed that the flipped classroom method did not have a significant effect on students' reading comprehension skills in learning English in secondary schools.

From 200 participated students in reading comprehension lessons showed method could improve their reading comprehension in EFL Students in Iran (Sin & Siahpoosh, 2020). Instead, research by Neisi et al., (2019) reported the results of their experiment study that the flipped classroom method and traditional method did not have many different effects on students' reading comprehension. Their conclusion states that there is no significant difference between the performance of the experimental and traditional groups.

Research by Zarinfard et al., (2020) reveals that the MANOVA results show that the flipped classroom method can significantly improve students' reading comprehension. There is an influence between subjects from the mean of different post-test score groups on the four competency tests of the Preliminary English Test that are focused on understanding the main ideas and core meaning of a short text. Hasanah & Arifani, (2020) reported their experiment research tested the effect of flipped classrooms on ESP Student Reading Comprehension and concluded that flipped classrooms affect the reading ESP students' skills.

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From various studies mentioned above revealed the flipped classroom studies show a significantly less effect on reading comprehension. It turned out to be researched by Syafitri, (2014) and Neisi et al., (2019), and Abaeian & Samadi, (2016) concluded that there was no difference in the effect of the flipped classroom method and the traditional on students' reading comprehension. For that, we need further experimental research. This study used the updated flipped classroom method that is different from previous research to meet the needs of teaching methods in the era of the COVID-19 pandemic. In a situation like this, online learning becomes an option. The novelty of this approach lies in its ability to enhance student engagement and reading comprehension. By allowing students to review learning materials on their mobile phones through Moodle E-learning at their own pace and convenience, whenever and wherever they need that, they can better absorb and understand the information presented. This approach also fosters independent learning, as students are encouraged to take responsibility for their own learning and engage in discussions with their peers.

The research questions of this research were: 1) is there a difference in the reading comprehension skills of students who receive the learning treatment flipped digital classroom method using Moodle E-Learning Material with the conventional method, 2) is there a difference in the reading comprehension skills of students who have high, medium and low student engagement and 3) is there an interaction between the learning method and learning engagement on students' reading comprehension skills.

Method

Research Design
This research is an experimental study using a quantitative approach. The design of the study was factorial 3 x 2 pre-test-post-test non-equivalent control group (Creswell & Poth, 2016). The research aimed to see whether there was an effect of the flipped digital classroom method using Moodle E-Learning Material and engagement on students' learning outcomes in reading comprehension lessons.

Research Population and Sample
The population of this study was all students of managerial economics in the Economic College of West Sumatera, Pariaman City. The sampling technique was purposive random sampling, amounting to 68 people. They were student class-A and student class-B. For the experimental class, there were 33 students, and for the control class, there were 35 students. However, during the research, three students failed in observing the experimental group because they did not complete online learning that they did not qualify to become the subject of further study. The final sample of this class is 30 people. Likewise, in the Control class, from 35 students in earlier and left just 30 people meet the requirements to become research subjects. The other five people did not complete the study. These two classes were the research samples that the students' initial abilities were the same, the educational background of the lecturers who taught was the same. The used facilities by the experimental class and the control class were also the same.

Instruments, Data Collection and Data Analysis
The instruments used in this study were Moodle platform, reading comprehension test, and student engagement questionnaire. Moodle platform is used as the platform for the flipped digital classroom method. The platform will allow for the creation of multimedia instructional materials such as videos, audio recordings, and interactive quizzes. It will also allow for the tracking of student progress and engagement. Reading comprehension tests were used as the measure of reading comprehension. The test will consist of a passage followed by a series of multiple-choice questions designed to assess comprehension. A student engagement questionnaire was used to measure student engagement in the flipped digital classroom method. The questionnaire will comprise Likert-scale questions and open-ended questions. The questionnaire was adopted from Hart et al. (2011), Student Engagement in Schools Questionnaire (SESQ).

The Likert-type survey is used to evaluate student engagement comprehensively, where students rate their responses on a scale of 1 to 5, with 1 being "never" and 5 being "always." The survey takes approximately 40 minutes to complete and for this particular study, it only included items that assessed behavioral, emotional, and cognitive engagement. Validity and reliability tests were conducted by distributing them to 30 individuals who were not the survey respondents. All instrument question has passed the validity and reliability tests with a validity value of 8.69 and a reliability of 9.23. The student's reading comprehension skills were evaluated based on their performance on reading comprehension tests, which were developed through a rigorous process of planning the question difficulty, recording the items, editing each question, and analyzing them with English learning experts.

The study employs a quasi-experimental design factorial 3 x 2 pre-test-post-test non-equivalent control group to investigate the effect of using the flipped digital classroom method with Moodle and student

engagement on reading comprehension. Participants will take a reading comprehension test and complete a student engagement questionnaire before and after a four-week treatment period. Descriptive statistics are used to analyze the data and inferential statistics are used to answer the research hypothesis by using Two Way ANOVA analysis to compare pre and post-test scores between the experimental class and control class and explore the interaction between model and student engagement and the effect on students' reading comprehension. In this study, the experimental class received learning treatment using the flipped digital classroom method with Moodle, and the control class used a conventional method of lecture and practice in the class only.

Results and Discussions

Student Engagement

Sixty respondents received a questionnaire on their perception of engagement in learning reading comprehension. College students in these two classes participated in reading comprehension learning using the different media and method. The experiment classes used the flipped digital classroom method used Moodle E Learning Material, and the control class used the conventional method without using Moodle. The results of respondents' answers to their assessment as follows:

Table 1. Student Engagement in The Experiment Class

| Student Engagement | Category | | | Mean | Level |
	Low (1.00-2.33)	Fair (2.34-3.66)	High (3.67-5.0)		
Behavioral	5 (16.6%)	9 (30.0%)	16 (53.4%)	3.88	High
Emotional	9 (30.0%)	8 (26.7%)	13 (43.3%)	3.40	Fair
Cognitive	6 (20.0%)	10 (33.4%)	14 (46.6%)	3.25	Fair
Average				3.51	Fair

The data findings explain that the three categories of student engagement in the experimental class show Frist, low behavioral engagement 16.6%, medium behavioral engagement 30.3%, and high behavioral engagement 53.4%. Second, low students' emotional engagement was 30.0%, medium students' emotional engagement 26.7% and high students' emotional engagement 43.3%. Finally, low students' cognitive engagement was 20.0%, medium students' cognitive engagement 35.4% and high students' cognitive engagement 46.6%. The average score on the Likert-scale was 3.51. It means teaching reading comprehension with the flipped digital classroom method using Moodle E-Learning Material showed fair student engagement.

Table 2. Student Engagement in The Control Class

| Student Engagement | Category | | | Mean | Level |
	Low (1.00-2.33)	Fair (2.34-3.66)	High (3.67-5.0)		
Behavioral	6 (20.0%)	High	13 (43.3%)	3.80	High
Emotional	7 (23.3%)	Fair	14 (46.7%)	3.51	Fair
Cognitive	10 (33.3%)	Fair	12 (40.0%)	3.10	Fair
Average				3.47	Fair

The three categories of student engagement in the control class showed in the table above show that Frist, low behavioral engagement 20.0%, medium behavioral engagement 36.7%, and high behavioral engagement 43.3%. Second, low students' emotional engagement was 23.3%, medium students' emotional engagement 30.0% and high students' emotional engagement 46.7%. Finally, low students' cognitive engagement was 33.3%, medium students' cognitive engagement 26.7% and high students' cognitive engagement 40.0%. The average score on the Likert-scale was 3.47. It means teaching reading comprehension with the control class using Moodle showed fair student engagement.

Reading Comprehension Skills

The evaluation of student reading comprehension skills used reading-comprehension test. The mark got from the exam and then to compare the effect of learning engagement on student understanding of economic reading material given between the flipped digital classroom method using Moodle E-Learning Material and conventional method. Student engagement consists of three categories, namely high, medium and low engagement. The following are the results of studying the Pre-test and Post-test reading comprehensions of the two classes.
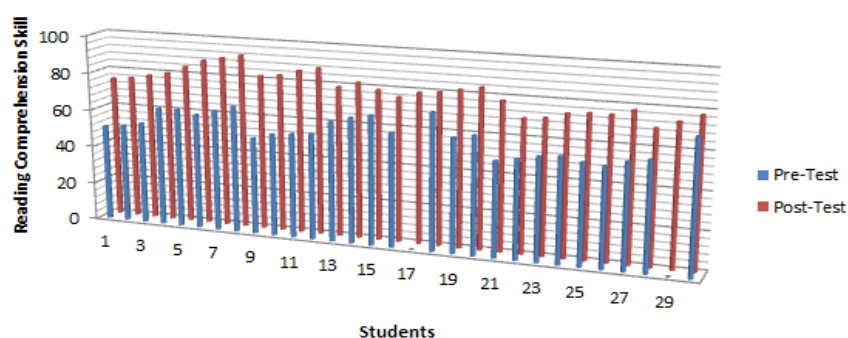
Figure 1. Graphic of Pre-Test and Post-Test of Students' Reading Comprehension Skills in The Experiment Class

The pre-test and post-test results of the experimental class students' reading comprehension calculated for the average value and the standard deviation. The experiment class showed the data pre-test, and post-test on the students 'reading comprehension skills were different. It had a mean of 79.8 with a standard deviation of 7,536. The following is a graph of the Control Class Pre-test and Post-Test Values.
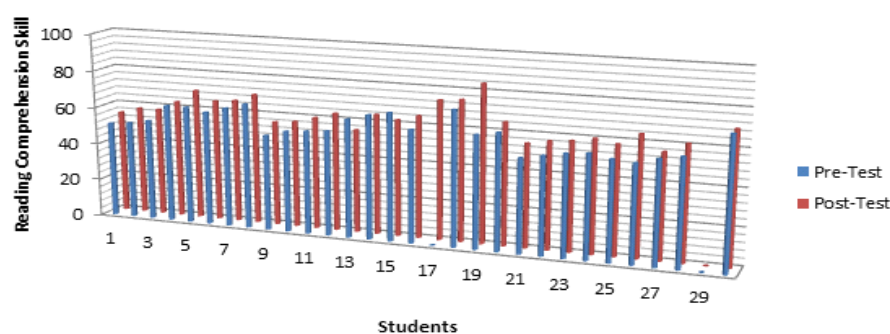

Figure 2. Graphic of Pre-Test and Post-Test of Students' Reading Comprehension Skills in The Control Class

The data pre-test and post-test of students' reading comprehension of control class as a whole showed that the students' reading comprehension skills were not much different. The control class has a mean of 59.23 with a standard deviation of 7.131.

Overall, the post-test data on students' reading comprehension of economic reading material and data analysis based on the level of student engagement in taking economics English courses showed the findings of a quantitative study which explained as follows:

Table 3. Post-Test Values and Student Engagement for Both Learning Methods

Student Engagement	Statistics	Learning Methods	
		Experiment Class	Control Class
High	N	8	8
	Average	82.87	68.12
	Standard Deviation	6,577	6,057
Moderate/Fair	N	12	12
	Average	81,667	71.75
	Standard Deviation	3,339	6,584
Low	N	10	10
	Average	74.30	62.10
	Standard Deviation	3,164	5,016

Based on the table above revealed that in general, the average score of student reading comprehension skills between the experimental class and the control class based on high, medium, and low student engagement has different quality thinking skills. The average reading skills of the experiment class students was 82.87. The reading skill of control class students was 68.12. The category of student engagement in the experimental class was 81,667, and the level of student engagement in the control class was 71.75. In the low level of student

engagement in the experiment class, obtaining that the average value of reading comprehension skills was 74.30 different and the control class was 62.10. From these two data, it appears that both the experiment class and the control class to high student engagement is the same as student reading comprehension skills.

Hypothesis Testing

To answer the research hypothesis, namely 1) what there is a difference in the reading comprehension skills of students who receive the learning treatment flipped digital classroom method using Moodle E-Learning Material with the conventional method, 2) is there a difference in the reading comprehension skills of students who have high, medium and low student engagement and 3) is there an interaction between the learning method and learning engagement on student reading comprehension skills. To answer this hypothesis well need a Two-Way ANOVA test is necessary. The results of the calculation are as follows:

Table 4. Two-Way ANOVA Test

Tests of Between-Subjects Effects					
Dependent Variable: Reading Comprehension Skills					
Source	Type III Sum of Squares	df	Mean Square	F	Sig..
Corrected Model	2461.567a	5	492,313	5,466	.000
Intercept	420660,100	1	420660,100	4.671E3	.000
Method	240,100	1	240,100	2,666	.016
Student Engagement	2129,400	2	1064,700	11,822	.000
Method * Engagement	92,067	2	46,033	.511	.042
Error	7565,333	54	90,063		
Total	430687,000	60			
Corrected Total	10026,900	59			

The Two-Way ANOVA test above showed the F count of student engagement was 11.822 with a significance value (sig) $\alpha = 0.000$. For the interaction between method and student engagement, the result obtained an F count of 0.511 with a significance value (sig) $\alpha = 0.042$. Meanwhile, student learning outcomes are based on the learning method factor with F-value = 2.666 with a significant (sig) $\alpha = 0.016$. The significance level value contained in the table above is higher than the significance value of 0.05. It means that there is an influence on the learning method of flipped digital classroom method using Moodle E-Learning Material on students' reading comprehension skills.

Based on the findings data above concluded that 1) there are differences in the reading comprehension skills of students who get the learning treatment flipped digital classroom method using Moodle E-Learning Material with the conventional method, 2) exist differences in reading comprehension skills between students who have high, medium and low engagement and 3) there is an interaction between the learning method and students' engagement on reading comprehension skills. To find out how much interaction between flipped learning method and students' engagement (high, medium, and low) on reading comprehension skills predicted through the following post-Anava follow-up tests (Table 5).

Table 5 presents the findings of an investigation into the relationship between student engagement levels and learning outcomes, specifically in terms of reading comprehension skills. The results indicate that there was no significant difference in reading comprehension skills between students with high and moderate engagement levels. However, there were significant differences in reading comprehension skills between students with moderate and low engagement levels, as well as between students with high and low engagement levels. These findings suggest that student engagement plays a crucial role in determining academic performance, and educators should focus on increasing student engagement to improve learning outcomes.

The study aimed to prove whether there is an effect of the flipped digital classroom method using Moodle E-Learning Material and student engagement on students' reading comprehension skills in the Economics English course. Research design with 2 x 3 pre-test-post-test non-equivalent control-group factorial used to describes the findings that can explain the extent to which the effect of the flipped learning method and students 'engagement affects students' reading comprehension skills.

Table 5. Post-Anava Follow-Up Test Using Scheffe.

Multiple Comparison
Reading Comprehension Skills

(I) Student Engagement	(J) Student Engagement	Mean Difference (IJ)	Std. Error	Sig..	95% Confidence Interval	
					Lower Bound	Upper Bound
High	Moderate	2.70	2,450	.547	-3.41	8.81
	Low	11.40 *	2,450	.000	5.29	17.51
Moderate	High	-2.70	2,450	.547	-8.81	3.41
	Low	8.70 *	2,450	.003	2.59	14.81
Low	High	-11.40 *	2,450	.000	-17.51	-5.29
	Moderate	-8.70 *	2,450	.003	-14.81	-2.59

The Effect of Flipped Digital Classroom Using Moodle on Students' Reading Comprehension Skills
Sixty The reading comprehension learning research conducted in management classes during the COVID-19 pandemic was an experimental class with flipped digital classroom method using Moodle E Learning Material. The control classes used the lecture method. Both findings provide a difference where the students' comprehension reading ability in the experiment class was more effective than the control class.

Students' reading skills that have improvement during learning by the flipped digital classroom method using Moodle. It was consistent with Alsowat, (2016). He reported that the application of the flipped classroom method improves students' reading comprehension skills. Further research that supports this finding is Huang & Hong, (2016) reported that out of forty randomly selected tenth graders showed that students' reading comprehension improved significantly after the teacher used the flipped classroom method. In contrast, to research Connor et al., (2009) reported no effect on learning method regarding student engagement and reading comprehension skills. The influencing variables were vocabulary mastery and oral reading fluency level. The Next study of McElhone, (2012) also reported things that are different from these findings that the patterns of interaction between teachers and students in supporting the learning outcome of student understanding and reading engagement do not influence each other. Mik, (2019) researched flipped classroom note-taking in learning reported indifferences found in learning outcomes related to flipped digital classroom and individual writing assignments. Fadi, (2019) also reported that the vocabulary knowledge of students affects reading comprehension skills. It is a required predictor of understanding a written text.

Using the flipped classroom method allows students to get early exposure and take the initiative to prepare their face-to-face class well. Besides, this method provides a mechanism for assessing student activities in the classroom that focuses on the mastery of the material and high-level understanding (Kvashnina & Martynko, 2016). Lecturers should encourage students to practice reading text reading economic material at home. The lecturer can give assignments every day before entering the class face to face. Lecturers can also use various questioning strategies to lead student opinions to answer text comprehension through questions that the lecturer leads them. This method can open their horizons to think further to understand the meaning of the text well. Lecturers must be creative in developing questions for students to encourage them to answer reading comprehension questions given. The leading questions can guide students to focus on the sentences contained in the text asked (Al-Qahtani, 2020).

Giving reading comprehension assignments at the beginning of the class, enable students to practice doing reading questions at home is one of the advantages of the flipped learning method. Lecturers need to hone their competence in using this method. Risnanda, (2018) supported and expanded on Guszak, (1967) suggests that lecturer competence during class teaching requires at least 30 to 120 questions per hour. The leading questions raised students to understand and underline the text messages they read. Borich, (2016) states that 80% of class activities are devoted to question and answer. The emergence of social-emotional interaction between lecturers and students encourages high intensity of student engagement. Lecturers and students discuss with each other related to understanding the text read (Hellman & Milling, 2020).

Applying the flipped digital classroom method and student engagement in learning reading comprehension aims to build student engagement atmosphere in questions and answers about reading comprehension test. They are not only able to answer and remember the questions well. But also give reasoning, analysis, and evaluation in nature. In answering the questions, the lecturer led them with the next question until they completely understood the meanings. Lecturers should provide various types and levels of questions and guide understanding the context of the reading question.

The same thing happened to online learning during the COVID-19 pandemic to Economic College Students of West Sumatra. In teaching activities, lecturers are more dominant using Moodle online social media. The choice of social media is because it is easy to use and familiar among students and convenient and attractive in online communication with an instant chat platform and easy for everyone to use (Akkara et al.,

2020). The student also can access the materials given by lecturers through multipurpose chat rooms. Students can also download material sent by lecturers, study and understand over and over again. The use of Moodle's social media technology allows students to learn in their learning style. Students can learn whenever and wherever they want through their smartphones (Alfawareh & Jusoh, 2014; Binti Mistar & Embi, 2016; Asmara, 2020). The widely use of the Moodle application in online learning as a learning medium is accessible easily. Besides getting easy, the use of internet access that is needed is also not too big. Moodle, as a social media application that is usable for distance learning method do. It can allow teachers and students to interact in the virtual world. Lecturers can send access to course materials via Moodle and hold face-to-face meetings with students using the teleconferencing feature available in the application. As we know, that the Moodle feature provides chat and teleconference spaces (Bahasoan et al., 2020; Asmara, 2020). With this feature, lecturers can interact with students in chat and telecommunication rooms. The teleconference can accommodate 4 to 8 people in direct communication.

The experimental class with the online-based flipped classroom method using moodle is more effective than the control class with the lecture method. In the experiment class, students study independently first to accomplish reading comprehension assignments given at home. Meanwhile, the conventional does not describe anything at the beginning. The experiment class further encourages students to learn independently to work on each given reading comprehension task before holding virtual face-to-face discussions. In contrast to the control class, the teacher explaining so much and is dominant in class mastery. Flipped classrooms provide opportunities for students to study themselves so that they get the initial knowledge needed in-class face-to-face discussion.

Meanwhile, the lecture method, the lecturer explained more. In the early stages of learning, the dominant lecturer first explains the strategy of understanding a text to their students. After explaining, the lecturer asked the students to do the reading comprehension assignments contained in the textbook. At this stage, students learning time at virtual face-to-face meetings via social networking during COVID-19 Pandemic less, so that time for discussion and question and answer is very little. As a result, when lecturers encourage students to work on reading comprehension questions in class, it leads students to have difficulty explaining the meaning they get from the text they read because they have less trained. It differs from previous research by Brady et al., (Hamilton et al., 2019; Asmara, 2020; Almarzooq et al., 2020).

The Effect of Student Engagement on Reading Comprehension Skills
The effect of student engagement on reading comprehension skills shows that the mean reading comprehension skills of the early students between the experimental class and the control class were not much different. The high category of reading skills in the experiment class got an average value of 82.87, and the control class was 68.12. Furthermore, students with the medium engagement category for the experiment class were 81,667, and the control class was 71.75. Finally, students with low engagement in the experiment class gave an average score of 74.30, and the control class was 62.10. From these two data, it appears that in the early stages, both the experiment class and the control class showed high, medium, and low engagement was not much different from the students' reading comprehension learning outcomes.

This study supported the finding of Verawardina et al., (2020). Teachers must be able to create an interactive learning process and encourage student enthusiasm for learning. Research by Mohd et al., (2016) reported that students' academic engagement depends on their satisfaction during the learning process. Research of Karabiyik, (2019) also concluded student engagement affects the success of learning English.

The average level of student engagement in following lectures using the flipped digital classroom method is better than in conventional classes. The advantage of using the flipped classroom online method via Moodle was this method can increase student awareness for active and independent learning can be realized in online learning. It also proves the high intensity of engagement triggers their self-regulated learning to act in critical thinking activity (Phothongsunan, 2020). A less effective control class leads to a lack of lecturers' and students' performance. The lecturers are more dominant so that the time for practicing and learning independently of students reduced. The learning process that the lecturers carry out is still monotonous. It does not challenge students and seems teacher-centered. Lecturers do not provide training periods and do not guide students with various types and strategies of questions that can lead them to understand the meaning of reading. The lecture learning method tends to make students have difficulty because they do not have an initial experience of the material discussed. This insufficient initial knowledge causes discussion and question and answers activities in class does not run well.

These findings are also consistent with the research by Zen et al., (2019). It explains the strength of the flipped digital classroom method besides it is easy to implement, it also accessible anytime and anywhere. Lecturers and students can study according to the time they want. The use of social media is still dominantly

used by lecturers in carrying out learning tasks in Indonesia. This study concludes that the flipped classroom method via Moodle can improve students' reading comprehension skills compared to conventional class even though supported by the same media. Likewise, student engagement did.

Interaction of Flipped Classroom Method and Students Engagement on Students' Reading Comprehension Skills

The interaction of the flipped classroom method and student engagement with students' reading comprehension skills is the interaction of student engagement in the high, medium, and low categories. This research supported Abaeian & Samadi, (2016) and Sencibaugh & Sencibaugh, (2015). They reported a positive interaction between the flipped learning method and student engagement in students' reading skills. The prediction results show no interaction between high and medium student engagement with value sig = 0.547. Meanwhile, there was a difference in students 'moderate versus low engagement with students' reading comprehension skills with a sig = 0.003. Finally, it also predicted a positive interaction between students' learning engagement with reading comprehension skills between groups of high and low engagement with a sig = 0.000.

The behavior of using Moodle in the flipped digital classroom method is a manifestation of student engagement. In online learning by using this media shows how technology affects student engagement in taking online learning (Santosa, 2015). This interaction shows that the flipped learning method and student engagement affect student achievement in reading comprehension skills. This interaction still affects the intensity of students' learning engagement itself. Students with high-intensity learning engagement were not much different from students with moderate intensity in reading comprehension learning outcomes. The differences found were in students with moderates and low learning engagement and high and low learning engagement. These findings conclude that the lower learning engagement cannot improve students' reading comprehension using the Flipped digital classroom Method because by using flipped classroom method has been shown to increase engagement. According to a study by Strayer (2016), students in a flipped classroom reported higher levels of engagement and motivation than students in a traditional classroom. Another study by Hung et al. (2019) found that students in a flipped classroom using Moodle were more engaged in the learning process and demonstrated higher levels of critical thinking than those in a traditional classroom.

Conclusions

This study proves the hypothesis that flipped digital classroom method using Moodle E-Learning Material affects reading comprehension skills. The student engagement also shows an interaction with the learning method on reading comprehension skills. Students with high learning engagement were not different from moderate learning engagement in their reading achievement. Meanwhile, medium and low learning engagement showed affected their reading comprehension learning achievement. It is the same with high and low student engagement did. The flipped digital classroom method and students' learning engagement proved to affect learning outcomes of reading skills. This method is also able to improve student achievement in reading comprehension material well through high student activeness and interaction in discussions during face-to-face online learning. Principals and English teachers must implement the flipped classroom teaching method on an on-going basis. Teachers use Moodle social media-based learning technology and possibly use others, such as Facebook, Instagram, and others. To improve students' reading comprehension and engagement during online learning, the teacher needs to provide authentic website-based materials variety into the used teaching social media. Through various social media-based teaching between teachers and students, teaching English is more fun and accessible whenever and wherever students want to.

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