

**INTEGRATING FLIPPED CLASSROOM MODEL AND JIGSAW IV  
TO DEVELOP STUDENTS' READING COMPREHENSION AND  
CRITICAL THINKING**

**(A Thesis)**

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**MASTER IN ENGLISH LANGUAGE TEACHING STUDY PROGRAM  
LANGUAGE AND ARTS EDUCATION DEPARTMENT  
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2021**

## ABSTRACT

### INTEGRATING FLIPPED CLASSROOM MODEL AND JIGSAW IV TO DEVELOP STUDENTS' READING COMPREHENSION AND CRITICAL THINKING

By

**Desy Desmita Wulandari**

This study aims to examine some different effects of the two non-traditional approaches when they are being applied in learning reading. Understanding texts means engaging the learners carefully into the text in such a way that they are filtering the information before consuming and discerning it as their understanding. Flipped classroom model may provides a wider and more flexible opportunity to students to take stance towards the text. The study inserts the elements of critical thinking standards in the process of flipped classes to bring learners to a higher level of comprehension. The study are to find out 1) whether there is a significant difference of students' reading comprehension achievement for those who are taught through flipped classroom model integrated with jigsaw IV and those who are taught through original flipped classroom model 2) to what extent critical thinking is achieved by students after the implementation of flipped classroom model in learning reading.

The samples of this study were 65 EFL students at the second grades of SMAN 1 Gedong Tataan. This study was quantitative research which used control group pre test - post test design. It was also true experimental study, which there were two classes; control and experimental classes were compared. The data were analyzed by using SPSS 26.0. This study utilized the five reading aspects for evaluating the achievement of the experimental class and control class. The result of *independent sample t-test* showed that the sig. (2-tailed) was  $.000 < .05$  so that the alternative hypothesis was accepted. There was significant difference of using flipped classroom model integrated with jigsaw IV and original flipped classroom model for students' reading comprehension achievement. Then, the critical thinking standards were utilized to develop a questionnaire for evaluating students' critical thinking achievement after being taught by using flipped classroom model in both classes. The results showed that in some extents of standards such as precision, relevance, consistency, logical correctness, completeness and fairness, most of the students achieved moderate level. Then, in 2 other standards; clarity and accuracy, most of the students achieved low level of critical thinking.

**Keywords** : Flipped Classroom Model, Jigsaw IV, Reading Comprehension, Critical Thinking

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**A Thesis**

**Submitted in a Partial Fulfillment of  
The Requirement for S-2 Degree**



**MASTER IN ENGLISH LANGUAGE TEACHING STUDY PROGRAM  
LANGUAGE AND ARTS EDUCATION DEPARTMENT  
TEACHER TRAINING AND EDUCATION FACULTY  
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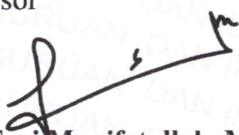
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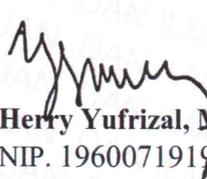
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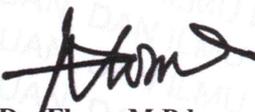
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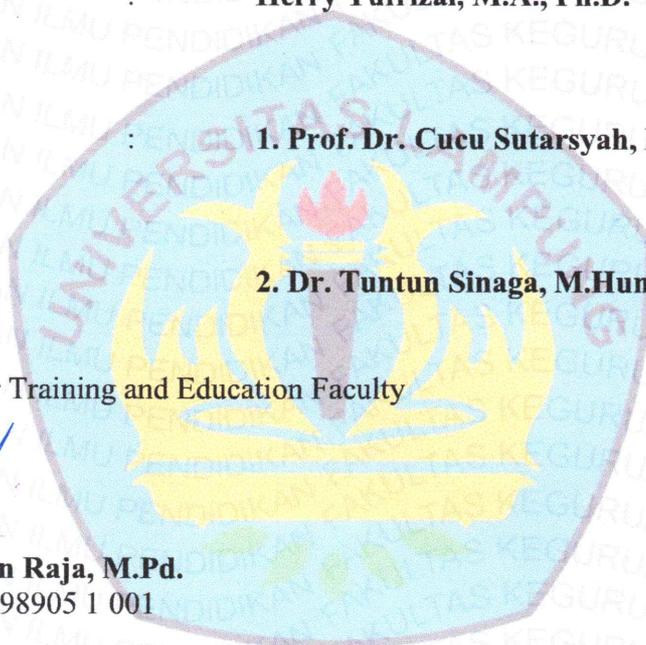
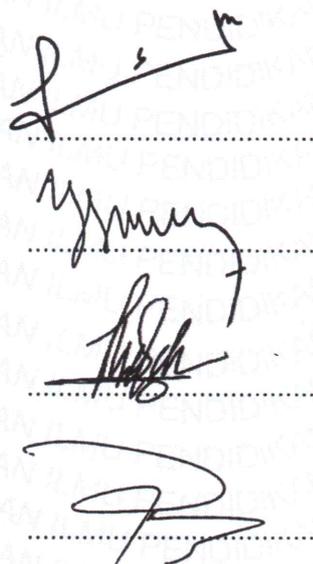
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## **CURRICULUM VITAE**

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## **DEDICATION**

*This script is fully dedicated to My Beloved Parents, Mr. Sumarjo and Mrs. Endar Yuliati and my sisters, Lulu'ul Mahmudah and Amalia Atika who always keep on praying for my life and always support me in accomplishing this script.*

*All my beloved friends*

*Masters' degree in english language teaching study program 2019.*

*My almamater, University of Lampung.*

## **MOTTO**

You don't have to be great to get started, but you have to get started to be great

**(Les Brown)**

Di dalam menjalani hidup, berusahalah dengan sebaik-baiknya dan semampunya, jangan memaksakan jika tak lagi mampu, serahkan ketentuan dan hasilnya kepada-Nya sang maha Berkehendak.

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Since it is important to be known that this thesis would never have come into existence without any support, encouragement, and assistance by several gorgeous people, the writer would like to address his gratitude and respect to:

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Hopefully, this thesis would give a positive contribution for educational development and for those who want to carry out further research.

Bandar Lampung, August 2021  
The writer,

**Desy Desmita Wulandari**

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## I. INTRODUCTION

This chapter presents the general points of the study. It includes background of the problem, identification of the problem, limitation of the problem, research questions, objective of study, uses of the study, scope of the study and definition of term.

### 1.1 Background of the Problem

Teaching reading to achieve students' comprehension is highly important, since the basic goal of reading is comprehension that will lead readers to take stance towards the text. According to McNamara (2007), comprehension refers to the ability to go beyond the words, to understand the ideas in a text and the relationships that exist between those ideas. Understanding texts means engaging the learners carefully into the text in such a way that they are filtering the information before consuming and discerning it as their understanding. In reading process, learners create interaction with the text or passage therefore they would grasp the intended message of the text.. Behind the process, readers also must be able to identify the reason why the text is produced, in which context it is produced, and the identity of the producer/author and etc. The complicated process of reading forces the learners to have higher order thinking skill (HOTS).

Supporting reading with higher level of thinking is needed to encourage active thinking process by teaching students how to think rather than what to think after read. Actually, in education field at this 21<sup>st</sup> century, Indonesia has expected that 2013 curriculum would prepare learners to be able to encounter 21<sup>st</sup> century skills; communication, collaboration, critical thinking and problem solving, creativity and innovation. It refers to our educational system which implemented Bloom's Taxonomy to design the learning activities which follow from lower cognitive level such as knowledge and comprehension into higher cognitive level;

application, analysis, evaluation and creation. Higher level of thinking or critical thinking skills component refers to the cognitive processes of thinking. According to (Kavanoz, in S. Celik 2020), the paradigm of critical thinking as “active, purposeful, and organized efforts to make sense of our world by carefully examining our thinking, and the thinking of others, in order to clarify and improve our understanding”.

In the field, EFL students frequently accept any information they receive from the text without questioning or analysing to draw conclusions based on critical judgments to achieve higher-order of thinking. This can be due to many reasons such as the absence of good instruction, the lack of background knowledge, both teachers and students seem to give less importance to developing more than comprehension skill and the limited time of teaching learning process, especially practice reading in the classroom. Fortunately, to support students’ comprehension in learning reading, critical thinking skills can be taught along with English as a foreign language and it is possible to develop students’ critical thinking skills through using an IT (Information Technology) integrated instructional strategy (Kavanoz, in S. Celik 2020).

The Flipped Classroom (FC) model has emerged as an innovative learning model to cover these problems since the process of flipped classes brings learners into a higher level of comprehension. Bergmann and Sams (2012) stated basically the concept of a flipped class is that which is traditionally done in class is now done at home and that which is traditionally done as homework is now completed in class. Then according to Brame in Drake, et al. (2013) in a Flipped Classroom, “students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge, perhaps through problem solving, discussion, or debates”.

Flipped classroom model may provide a wider and more flexible opportunity to create student-centred learning and active learning process, to

allow students to learn collaboratively and to have extension learning time. This model can develop students' comprehension and critical thinking. Tobert (2020) explains that creating a learning environment that is active and collaborative as well as giving students the opportunity to practice important skills are vital for promoting critical thinking. Moreover, research demonstrates that students engaged in active learning exercises have improved higher-order thinking and problem-solving skills (Crouch and Mazur, et al qtd. In Morton & Colbert-Getz, 2016). Flipped Classroom model provides more room and critical thinking paradigm of complex (Hantla, 2014) so as it can be applied to improve critical thinking through activities outside and inside the classroom (Sofya qtd in., Kurnianto, et al. 2020). This model allows more time for students to learn inside and outside the classroom because of the inverted learning process with the utilization of technology (Bergmann & Sams, 2012).

Some recent researches such as by Hashemifardnia, Namasiandost & Shafiee (2018) conducted a research about the effect of implementing Flipped Classroom on Irian Junior High School students' reading comprehension. They provided the result indicated that there was a significant difference between the post-test of the experimental and control group. It means that there is significant effect of implementing Flipped Classroom in order to improve students' reading comprehension. In line with Herlindayana, Sahlan & Albert (2017), Karimi & Hamzavi (2017), and Kurniawan & Wulandari (2018) also conducted the research to know the effect of implementation of Flipped Classroom model towards students' reading comprehension. The newest qualitative study exploring the use of Flipped Classroom model in reading comprehension conducted by Fahmi, Friatin & Irianti (2020). This study investigated the teacher's way of implementing Flipped Classroom in teaching reading narrative text and reveal students' perception towards the teaching model. The result of the study was showed that the teacher implemented four main stages in teaching reading

narrative text using the Flipped Classroom model. Meanwhile, regarding the students' perception, students perceived all the stages and activities in the Flipped Classroom model positively. The students viewed that Flipped Classroom as a fun learning model, which helped them become more active students, and help them overcome their shortcomings.

Additionally, several researches have been proven that flipped classroom was effective in improving the ability of critical thinking on teaching learning process (Kurnianto, et al., 2020; DeRuisseau, 2016) and over 90% post graduate law students found the flipped classroom model to be either effective or very effective to promote critical thinking (Liu, 2019). Lockwood in Voss & Kostka (2019), they stated that when flipped learning was implemented, students engaged in work outside of class that requires them to use skills that are lower on Bloom's taxonomy, such as knowledge and comprehension. This means that the lecture videos or reading were given to students prior to the courses allowed them to learn at their own pace due to being able to pause, rewind, and replay the videos or reread the reading text. They can replay/reread everytime until the comprehending was formed. Therefore, pre-class time enhance the students ability to comprehend the concept by themselves, get the background knowledge from it, then make a framework.

Lockwood in Voss & Kostka (2019) also stated that what is now done in class are activities that call for students to use skills that are higher on Bloom's taxonomy, such as application, analysis, evaluation, and creation. Which means that this model brings the cognitive process runs from lower into higher-from reading comprehension into critical reading. During in-class time, students engage in hand-on activities and practice under the teachers' guidance. They apply their comprehension in actual class time through active learning activities. Last, after class, all students have access to peer/instructor feedback from in-class session and have an assignment that are completed independently. It means that the

teacher together with students evaluate the learning process to know to what extent the student's comprehension from the text.

Flipped classroom is a new culture for students and instructors and does not have a strict theoretical framework (Turan and Goktas, 2016) therefore it may be adopted in many ways, but the core that this model inverts the time and place of homework and instruction, allowing students more time for collaboration and engagement in constructivist learning environment (Abeysekera & Dawson, 2014; Ash, 2012; Chen *et al.*, 2014; Love *et al.*, 2014; Street *et al.*, 2015 qtd. In Turan & Goktas, 2016). Thus, refers to the emphasize on the active learning process, Hsieh in Green, et al. (2017) suggest to integrated this model with other interactive learning technique and (Singh et.al, 2017) revealed that using resources such as YouTube videos as guidance for them to dramatize their role according to the situation given by their lecturer in the class builds confidence and ability to engage with peers. Therefore, to engage students in learning, giving students material by using video also create a positive acceptance.

From the explanation above, it is indicated that Flipped Classroom model can enhance students' comprehension and also promote students into higher-order thinking through engage students in active learning process and collaborative learning. This active and collaborative learning were created by jigsaw. Jigsaw develop into 4 types of technique during 1978 to 2000, they are Jigsaw I, Jigsaw II, Jigsaw III and Jigsaw IV. Jigsaw type IV is one of effective instructional technique for teaching reading for enhancement of learning responsibility and interaction. Through integrating flipped classroom model and jigsaw IV, students are allowed to learn about the topics outside of class at their own pace, and come to class informed and more prepared to engage in discussions on the topic in groups and apply their knowledge through active learning. This active learning within the classroom seeks to focus on comprehension skill and on higher level skills, such as creating, analysing, evaluating.

Many studies on the effect of implementing Flipped Classroom toward students' reading comprehension in EFL context have been explored but study on implementing Flipped Classroom model which would be integrated with other interactive learning technique in learning reading is still rare. Therefore, this current study will develop the Flipped Classroom model integrating with Jigsaw IV technique in learning reading. Modifying at practical level is expected to accomplish the best result and to bring up the capability of EFL students to think more than comprehending but also critically. This research is needed to provide the evidence whether there is significant difference of the achievements in reading comprehension of students who are taught by using Flipped Classroom model integrated with Jigsaw IV and those who are taught by using original Flipped Classroom model, and to know in what extent of critical thinking is achieved by the students after the implementation of Flipped Classroom model for both of classes.

## **1.2 Identification of the Problems**

Based on the background of the problem above, the writer identifies the problems as follows:

1. The students associate learning English in traditional view.
2. The students are not engaged in the learning.
3. The learners have not enough time to practice reading in the classroom.
4. The lack of background knowledge.

## **1.3 Limitation of the Problems**

Based on the identification of the problems above, the writer limits the problems that is investigated. The writer focus on implementation of Flipped Classroom model integrating with Jigsaw type IV and original Flipped Classroom in learning reading.

#### **1.4 Research Questions**

Based on the limitation of the problems above, the writer would like to formulate research question as follows:

1. Is there any significant difference of using flipped classroom model integrated with Jigsaw IV and original flipped classroom model for students' reading comprehension achievement?
2. To what extent is critical thinking achieved by the students after the implementation of Flipped Classroom model in learning reading?

#### **1.5 Objectives of the Study**

The objective of this study are:

1. To find out whether there is significant difference of students' reading comprehension achievement for those who are taught by using Flipped Classroom model integrated with Jigsaw IV or those who are taught by using original Flipped Classroom model.
2. To find out the extent of critical thinking level is achieved by students after the implementation of Flipped Classroom model in learning reading.

#### **1.6 Uses of the Study**

The uses of the study show into two categories. They are theoretical and practical which are described as follows:

##### **1.6.1 Theoretical**

Theoretically, findings of the study are expected to support the existing theories on integrating Flipped Classroom model with Jigsaw technique in learning reading.

### **1.6.2. Practical**

#### **For Teacher**

Practically, this study can provide the English teacher to use new learning model that is integrating Flipped Classroom model and Jigsaw IV technique to teach reading comprehension in teaching and learning process. This study give attention with the evidence of this learning model. This study also provides the English teacher to encourage the students to more practice outside the classroom to develop their reading comprehension.

#### **For Students**

The students can improve their reading comprehension through implementation Flipped Classroom model integrated with Jigsaw IV technique. The students know the new model which more interactive, creative and fun than the traditional model to practice their reading comprehension.

### **1.7 Scope of the Study**

The quantitative study focused on whether the used of Flipped Classroom model integrated with jigsaw IV improved students' reading comprehension. Whether there was significant improvement. Which one was better by integrating Flipped Classroom Model with Jigsaw IV or original Flipped Classroom Model in teaching reading. Then, in what extent was critical thinking achieved by the students after the implementation of Flipped Classroom model. This study treated two groups, one as experimental group and other as control group. An experimental group who got the treatment using Flipped Classroom model integrated with Jigsaw IV and a control group who got the treatment by using original Flipped Classroom model. The instruments for the study were reading test to measure the students' reading comprehension achievement before and after the treatment and questionnaire to find out the extent of students' critical thinking level after the implementation of Flipped Classroom model.

## 1.8 Definition of Terms

1. Reading comprehension is a multicomponent, highly complex process that involves many interactions between readers and what they bring to the text as well as variables related to the text itself (Klingner, Vaughn, and Boardman (2007)).
2. Critical thinking is the general term given to a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyze, and evaluate arguments and truth claims; to discover and overcome personal preconceptions and biases; to formulate and present convincing reasons in support of conclusions; and to make reasonable, intelligent decisions about what to believe and what to do (Bassham, et al (2011)).
3. A flipped class is that which is traditionally done in class is now done at home and that which is traditionally done as homework is now completed in class. It allows more time for students to learn inside and outside the classroom because of the inverted learning process with the utilization of technology (Bergmann & Sams, 2012).
4. Jigsaw is learning technique was introduced by Aronson in 1978. Jigsaw was one of the earliest of the cooperative learning methods. Jigsaw IV developed by Holliday, D.C., 2000. The steps of Jigsaw IV as follows Introduction; Expert sheets assigned to expert groups; Groups answer the expert questions prior turn to returning to home teams; Quiz on material in the expert group shared checking for accuracy; Students return to home teams sharing their information with their teammates; Quiz on material shared checking for accuracy; Review process whole groups; Individual assessment and grades; Re-teach any material missed on assessment as needed (Holliday, D.C., 2000).

## **II. LITERATURE REVIEW**

This chapter discusses several theories related to the topic of this research, such as concept, aspects and process of reading comprehension, concept of critical thinking and critical thinking standard, concept, phases and procedures of original Flipped Classroom, concept and procedure of Jigsaw IV, concept and procedure of Flipped Classroom model integrated with Jigsaw IV in learning reading, review of the previous research, theoretical framework in research, and hypotheses.

### **2.1 Concept of Reading Comprehension**

Most of knowledge and information can be gained by reading and comprehending what is the text talking about. Grabe and Stoller (2013) stated that reading for general comprehension is, in its most obvious sense, the ability to understand information in a text and interpret it appropriately. Then, RAND Reading Study Group in Caldwell (2008) states that Reading comprehension as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. It means that, the result of reading is the reader get the meaning of the text (comprehension). In order to read efficiently, the more practice with written language is needed such as the reader needs much training in handling unfamiliar words, automatically processing the unstated information, understand the meaning, main idea, idiom, specific & supporting information, to infer and to success reach the intended conclusions.

Reading comprehension involves much more than readers' responses to text. According to Klingner, Vaughn, and Boardman (2007), reading comprehension is a multicomponent, highly complex process that involves many interactions between readers and what they bring to the text (previous knowledge, strategy use) as well as variables related to the text itself. It means that successful of reading comprehension is depend on the reader, whether they have good

previous knowledge, good reading strategy, high reading interest, or easy to understand the text or not.

In brief, reading comprehension is important in English language learning, not only for construct the meaning of the text, but also the students should get comprehension from the text as a product of its process. Reading comprehension is a complex task, there are many different cognitive skills and abilities which related with it such as previous knowledge, good reading strategy and high reading interest. Likewise, good reading comprehension will depend on good language understanding more generally. Reading comprehension brings the students success in teaching and learning process, since by comprehend the material before, they will remember much more, it helps them when they learn English.

## **2.2 Aspects of Reading Comprehension**

Every students have their level on reading a text. It can be seen from their comprehending ability to the text. According to Suparman (2012), there are five aspects of reading comprehension skills that should be mastered by the reader to comprehend the text deeply. They are main idea, supporting detail, inference, reference, vocabulary. These aspects are provided to measure the students' achievement in reading comprehension will be explained as follows:

### **1. Main idea**

Each paragraph has at least one main idea therefore, this aspect become important for the readers in order to know the generalization concept which tell about the paragraph. The reader is usually found the main idea at the beginning or at the end of the paragraph. According to Suparman (2012), determining the main idea of a paragraph is a skill to grasp and find the main point of the passage in each paragraph where the keyword will be repeated in the supporting details.

## **2. Supporting detail**

Identifying supporting detail means that we should look for the information that relevant to the goal in mind and ignore the irrelevant one (Suparman, 2012). The specific information develops the topic sentence by giving definition, example, comparison, explanation, evidence and etc.

## **3. Inferences**

To draw inference, the reader implies the meaning of the sentences and create a conclusion. The inference is a good guess or conclusion drawn based on the logic of passage (Suparman, 2012). It means that the reader's logical connection between what they know and what they do not know.

## **4. Reference**

Reference is usually used a type of pronoun in order to prevent unnecessary repetition of words or phrases. According to Suparman (2012), Finding reference means that the reader should interpret and determine one linguistic expression to another.

## **5. Vocabulary**

Vocabulary is a fundamental thing for everyone who wants to produce and to get input such as information. In reading comprehension, the reader should understand vocabulary to comprehend the word mean in order to get deeper understanding.

From the explanation above, we know that to achieve the goal of reading, there are five aspects of reading comprehension that students should master such as: identifying the main idea and supporting detail from each paragraph, making inference by comprehend the implicit meaning that contain in the text, confirming reference that exist in the text and understanding the vocabulary clearly.

### **2.3 The Processes of Reading Comprehension**

One of the factors that have been found in affecting reading comprehension is a reader's schemata. According to Sutarsyah (2009), schema is an abstract structure or concept stored in memory based on the people's experience and knowledge. He also adds that a schema theory is basically a theory of background knowledge. It is in line with Richards and Schmidt (2002), they stated that contemporary theories of comprehension emphasize that it is an active process drawing both on information contained in the message by getting meaning from written symbols (bottom-up processing) as well as background knowledge, information from the context and from the writer's purposes or intentions (top-down processing). Sutarsyah (2015) adds that reading actually involves the process of bottom-up and top-down which is called interaction.

#### **1) Bottom-up process**

In bottom-up processing, the reader builds up a meaning from the written symbols on the page: recognizing letters and words, working out sentence structure to grasp meaning. Sutarsyah (2015) states that reading is considered essentially a mechanical decoding process. At this process, a reader is assumed to decode or translate the printed symbol in the text by moving his eyes, recognizing letters, combining them to form words, then combining the words to form phrases, clauses, and sentences of the text. Thus, this bottom-up model was proposed by structural linguists and behavioral psychologists. Sutarsyah (2009, 2015) adds contrast with top-down, bottom-up activation refers to the activation where the data driven starts from parts to the whole or from something specific to something general.

#### **2) Top-down process**

In top-down processing, there is growing view which replace bottom-up processing in a foreign language circle. Top-down processing draw on our

own intelligence and experience – the predictions we can make, based on the schemata we have acquired – to understand the text. Since reading is considered as an active process between the reader and the text. According to psycholinguistic model, background knowledge and in particular the role of soci-cultural meaning are important aspects in second language reading comprehension Sutarsyah (2015). Thus, the ability to construct meaning from the text is based on the reader's previous experience, background knowledge and familiarity with a topic. Additionally, top-down activation refers to the activation begin from something general and goes to something specific (Sutarsyah, 2009,2015).

### **3) Interactive process**

In Sutarsyah (2015), some studies stated that the efficient and effective reading requires both top-down and bottom-up strategies operating interactively. According to this model, both bottom-up and top-down models seem to occur simultaneously in a reading process (Rumelhart's (1980), Carrell (1992c)). Therefore, in interactive process of reading, the reader's linguistics competence by decoding written symbols (bottom-up process) and the reader's background knowledge and experience (top-down process) play significant role in comprehending the text. To interpret the writer's intended message, a reader approaches written material with his or her thought and language knowledge interactively.

In conclusion, from the three models of reading process, the interaction model is most appropriate as a model of reading process, although schema availability alone is not sufficient condition for adequate comprehension. Any reading strategy should be derived from this model (Sutarsyah, 2015).

## 2.4 Concept of Critical Thinking

Learning process in this 21<sup>st</sup> century era demands the students to improve their thinking into higher-order thinking skill, especially for higher educational level. The function of education is to teach one to think intensively and to think critically (Luther, M. qtd. in Bassham, et al (2011)). Critical thinking means to teach learners how to think – that is, how to become independent, self-directed thinkers and students. According to Bassham, et al (2011) critical thinking is the general term given to a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyze, and evaluate arguments and truth claims; to discover and overcome personal preconceptions and biases; to formulate and present convincing reasons in support of conclusions; and to make reasonable, intelligent decisions about what to believe and what to do. This broad definition characterizes critical thinking as an application of rational and higher order thinking skills, such as analysis, evaluation and creating in cognitive level of Bloom's Taxonomy.

Critical thinking relates to our thought processes, how we use our judgment, how we take action to solve problems and how we make decisions. Same theory by Paul and Elder, they claim that “critical thinking is the process of analyzing and assessing thinking with a view to improving it. Critical thinking presupposes knowledge of the most basic structures in thinking ... and the most basic intellectual standards for thinking ...” (Paul & Elder in Kavanoz, 2020). On the other words, every process which engages analysis and assessing/evaluation of our thinking deeply is an attempt to think critically. Questioning and curiosity are necessary characteristics of those who think critically as they always try to find the answer for the question they raise.

### **2.4.1 Critical Thinking Standard**

To qualify students into critical thinker, some experts have been defined the critical thinking standard. These standards will be as guidance for teacher to assess how far the students' mastery of the critical thinking skill. Critical thinking standard according to Basham, et.al (2011), they are:

#### **1) Clarity**

To become critical thinkers, we should clear in how we communicate our thought, our believe, and the reason of what our believe. According to Larmore in Bassham et.al. (2011) stated that clarity is not a mere embellishment of the intellect; it is the very heart of intellectual virtue. It is due to something that clearly leads to something that is true. In context of reading, the critical thinkers not only strive for clarity of language but also seek maximum clarity of thought. Then, a critical thinker also must be clear with information on the reading text itself.

#### **2) Precision**

Critical thinkers also understand the importance of precise thinking in daily life. They understand that to cut through the confusions and uncertainties that surround many everyday problems and issues, it is often necessary to insist on precise answers to precise questions: What exactly is the problem we're facing? What exactly are the alternatives? What exactly are the advantages and disadvantages of each alternative? Only when we habitually seek such precision is we truly critical thinkers. In context of reading, the critical thinkers always want the explanation is more specific and more details.

#### **3) Accuracy**

The next standard of critical thinking is that the critical thinkers look for the accuracy and sufficient information. They also want the factual information because they need the truth before go on to analyze it. When reading a text, a

critical thinker will put more attention to the accurate plot and sources of information.

#### **4) Relevance**

The critical thinkers have ability to connect the information and idea that are being discussed with the matter that are being discussed also. Due to what is said should be pertinent, so no tedious and irrelevant discussion can be allowed.

#### **5) Consistency**

It is easy to see why consistency is essential to critical thinking. Logic tells us that if a person holds inconsistent beliefs, at least one of those beliefs must be false. Critical thinkers prize truth and so are constantly on the lookout for inconsistencies, both in their own thinking and in the arguments and assertions of others.

#### **6) Logical Correctness**

To think logically is to reason correctly—that is, to draw well-founded conclusions from the beliefs we hold. To think critically we need accurate and well supported beliefs. But, just as important, we need to be able to reason from those beliefs to conclude that logically follow from them.

#### **7) Completeness**

In most contexts, we rightly prefer deep and complete thinking to shallow and superficial thinking. It means that when reading the critical thinker engages in deep and thorough thinking and evaluation, avoiding superficial thinking and criticism about the reading text.

#### **8) Fairness**

Finally, the last standard of critical thinker demands that their thinking be fair — that is, open minded, impartial, and free of distorting biases and preconceptions. Therefore, in reading, the critical thinkers must be fair in evaluating or giving a comment towards a text.

By all these explanations means that there are eight standards which will indicate the students as critical thinkers. In this case, these standards are provided to measure the students' achievement in critical thinking level in reading skill.

## **2.5 Concept of Flipped Classroom**

Learning model in teaching English is very helpful for teachers and students to achieve their success or goal in the teaching learning process. Many learning models which can be used in teaching every English skill. Especially, in teaching reading, one of the model is Flipped Classroom. Many experts have been discussed the concept of Flipped Classroom. According to Hamdan et, al. (2013) in the flipped learning model teachers shift direct learning out of the large group learning space and move it into the individual learning space, with the help of one of several technologies. It means that this is a kind of learning model which involve the technology help in the teaching learning process. The term 'flip' means that there is system exchange in teaching from group learning space into individual learning space which leads to personalized learning.

In line, Bauer-Ramazani et,al. (2016) define the flipped learning as a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter. In other hand, through flipped the learning space does not mean ignoring the group space in teaching learning process. Precisely, the teacher as an educator will guide students to make the class become center of collaborative activity and create the interactive learning environment. This is supported finding that a Flipped Classroom offers flexible instructional time, creates a dynamic and interactive learning environment, and allows for a deep investigation of concepts (Amiryousefi, 2017; Chen Hsieh, Wu, & Marek,2017; Francl, 2014 qtd. in Bauer-

Ramazani et,al; 2016) . Hence, the teaching and learning process in the classroom will more comprehensible and effective through Flipped Classroom.

According to Bergmann and Sams (2012) Basically the concept of a flipped class is that which is traditionally done in class is now done at home and that which is traditionally done as homework is now completed in class. Then according to Brame in Drake, et al. (2013) in a Flipped Classroom, “students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge, perhaps through problem solving, discussion, or debates”. In other words, the Flipped Classroom activities are pre-class and inside-class activity. Pre-class is doing before class time by giving the students material or instruction related with topic that will be discuss in class time. The material is shared by using any online platform that have been agreed with the class. The students are asked to comprehend the material when they are outside of class. Then, in inside-class, the teacher use class time to check on each learner’s understanding and discuss the students’ note to avoid misconception related the material before class. Class time also can be used for apply learner’s understanding or do the analysis material and evaluation the material.

According to Turan & Akdag (2019), to date, studies have shown that a Flipped Classroom contribute the academic achievement and decreases students’ cognitive load. Some experts in Turan & Akdag (2019) found that a Flipped Classroom makes room for active student participation and encourages the development of an interactive learning environment (Chuang, Weng, & Chen, 2018), increases student engagement (Chen Hsieh, Wu, & Marek, 2017), provides more room and critical thinking paradigm of complex (Hantla, 2014) and improve critical thinking through activities outside and inside the classroom (Sofya qtd in., Kurnianto, et al. 2020). However, due to the emphasis on students becoming the agents of their own learning rather than the object of instruction, the Flipped

Learning model can enable educators to make the shift from teacher-driven instruction to student-centered learning. It is supported by (Hutchings et al. in Green, et al, 2017), Flipped Classrooms allow for transformative, student-centred learning.

From those theories above, Flipped Classroom refers to a learning model which is appropriate to teach English Foreign Language (EFL) learner by flipping the learning process contrary from conventional model. In Flipped Classroom, teachers have to prepare a reading text or lecture video which will be transferred for students via online platform such as whatsapp, youtube, google-drive, and etc 1 to 3 days before in-classtime. The students can watch or read the material wherever and whenever they are during pre-class time. The day in-classtime, the teacher check the learner's understanding and make clearly discussion. Then, teacher string activities to make specific analysis or do some interactive learning/collaborative learning activity then report the result of these activity. Flipped Classroom believes that by giving the material before the in-classtime, it allows the students develop their own thinking to comprehend the material and it make the in-class time more valuable and useful for working on several tasks and practice activities. In this situation, the teacher shift from their role as central figures in the classroom become more like facilitators of learning, focus on creating tasks to help students use language correctly.

### **2.5.1 Phases of Flipped Classroom**

By using Flipped Classroom; innovative teaching model with involve the technologies and give the students freedom in what situations they learn outside the class, these are believed that the teachers can positively improve the goals of increased students' reading comprehension or even critical thinking.

There are three instructional phases that can be implemented by using Flipped Classroom in teaching learning process. According to Hsieh in Green, et al. (2017) the phases are:

1. *Before Class*, Assigned readings; recorded lecture; supplemental videos/podcasts; short assessment.
2. *During Class*, Activities; small group/partner work; partner-sharing; Problem Sets; Assessments.
3. *After Class*, Complete assessments; follow up activities.

Overall, the phases in Flipped Classroom consist of before class/pre-class which mean that learning activity is done outside the class before the class time begin. After that, the learning activity continue to in-class time which mean that the students discuss what they have learnt before in outside the classroom. The last phase is the learning activity which the students do after in-class activity whether the comprehension has been achieved.

### **2.5.2 Procedure of Flipped Classroom Model in Learning Reading**

In implementing Flipped Classroom model in teaching and learning reading, student progress through 3 consecutive phases developed by Hsieh in Green, et al. (2017), and in each phase, there are some stages as follow:

#### ***Phase I: Before Class,***

1. All students are shared the material in the form of reading text 2 days before the class schedule (in-class time) using online platform like WA group.
2. All students are asked to read the material and tried to comprehend the reading text by themselves. They can read wherever, whenever, and in what situation they want before the in-class time. Then, they have to answer the guided question related to the text that is provided by the teacher.

***Phase II: During Class,***

3. The students are divided into pairs. Each pair discusses the answer of the guided question and they create deeper comprehension about the reading text by sharing together what they have understood in before class.
4. Each pair are asked to present the answer of the question in front of the class. Then, the other pairs are allowed to give response such as question, suggestion even critics if they are contra.

***Phase III: After Class,***

5. All students are given the individual test to check their comprehension related to the whole material.

**2.6 Concept of Jigsaw Technique**

Jigsaw is one of the interactive learning techniques from cooperative learning approach. Cooperative learning refers to an instruction method in which students at various performance levels work together in small groups towards a common goal (Thakral, 2017). This method fosters academic achievement and gives self-esteem to pupils by creating small working groups, in which students help each other, improve their communication, problem solving and critical thinking skills.

The original Jigsaw method was developed by Aronson (1978). The implementation of Jigsaw allows students to actively participate in the learning process. Changes in teaching and learning process make Jigsaw technique also developed from the original version. There are currently four types of Jigsaw technique available for teachers to use in their classroom: a) Jigsaw developed by E. Aronson (and others, 1978); b) Jigsaw II developed by R.E. Slavin in 1980; and c) Jigsaw III developed by R Stahl in 1994. d) Jigsaw IV developed by Holliday, D.C., 2000. Detail conception of these Jigsaw types will explain below:

### **1. Jigsaw I**

Jigsaw is learning technique was introduced by Aronson in 1978. Original Jigsaw/Jigsaw I was one of the earliest of the cooperative learning methods. The original Jigsaw method was developed to place students in situations of extreme interdependence. Each student is provided with only part of the materials of an academic unit but is evaluated on how well he or she masters the whole unit. In Jigsaw, each student in a four- to six-member group is given unique information on a topic that the whole group is studying. After the students have read their sections, they meet in "expert groups" with their counterparts from other groups to discuss the information. Next, the students return to their groups and teach their teammates what they have learned. The entire class may take a test for individual grades at the end (Aronson, 1978).

### **2. Jigsaw II**

Jigsaw II was adapted from the original Jigsaw method to use existing curriculum materials and to take advantage of some of the features of STAD that are not part of the original Jigsaw (Slavin, 1980c). The typical sequence of events in Jigsaw II is as follows : The students are assigned to teams as in STAD; they are assigned to expert topics within the teams; they read the whole learning unit, with emphasis on their expert topic; they meet in expert groups to discuss and master their topics; they report to their teams; they take an individual quiz, which contributes to a team score; and they receive individual and team recognition (Slavin, 1980).

### **3. Jigsaw III**

Jigsaw III developed by Stahl in 1994 adds a whole group review process before the test but then follows Jigsaw II for the stages and competition element. It means that in Jigsaw III, this led to a need for some further

evaluation of the remaining concerns by the addition of a review session prior to the individual assessment (Stahl, 1994).

#### **4. Jigsaw IV**

In 2000, Jigsaw IV was developed. Its difference from Jigsaw I, II, and III is that some quizzes are given to students in order to check the learning in expert and home groups and the parts of the units which are not taught are added to the process of instruction again. In Jigsaw IV the teacher introduced the lesson in a way that was user friendly; one, that the teacher felt comfortable utilizing in the classroom. The two quizzes addressed the issue of accuracy of answers that the students received from their peers. The teacher also could judge whether the students were on "the same wavelength" by correcting the information before it was taught to their teammates. The whole group review before the test allowed for another accuracy check prior to the assessment. The final stage addressed the concern that dealt with mastery of the knowledge. The re-teaching allowed teachers to continuously check for student understanding and mastery (Holliday, D.C., 2000).

##### **2.6.1 Procedure of Jigsaw IV in Learning Reading**

In Jigsaw IV, student progress through 9 consecutive stages developed by Holliday (2000), as follow:

###### *Stage I: Introduction*

The students are assigned to four-to-six member teams (home group). All groups are shared a video to introduce the general material that will be taught. After that, the reading text also will be given to the groups and each member of home group have to choose one specific topic that should be discuss.

###### *Stage II: Expert sheets assigned to expert groups*

They are in the same topic are called 'expert group'. This group will be shared an expert sheet, they try to expert on their own topic by reading and searching from any sources until they get well comprehension to answer the expert sheet. In this case, the expert sheet is filled by critical thinking questions which need the students to analyze and evaluate their thinking to answer it.

*Stage III: Groups answer the expert questions prior turn to returning to home teams;*

On expert group, the students discuss their expert topic, each expert member give contribution ideas that they comprehend from the material in order to answer expert group quiz.

*Stage IV: Quiz on material in the expert group shared checking for accuracy.*

The expert groups are given a quiz to check the accuracy of their comprehension about the expert topic before sharing the information to home group. They identify the most important learning points and make a plan about how to teach their comprehension clearly to their own home group by preparing a report. In this current study, the questions in expert group quiz is designed to force the students' comprehension about linguistic features of the text. Then, the questions also promote the students critical thinking ability in creating the main point that will be shared for other members.

*Stage V: Students return to home teams sharing their information with their teammates;*

Each member in the expert group return to home group and takes turns teaching what he or she has become an "expert" to the other "home group" members.

*Stage VI: Quiz on material shared checking for accuracy;*

The home groups are given a quiz to check the accuracy of their comprehension about the whole topic. Like the previous quiz, the teacher could judge whether the students are on "the same wavelength" by correcting the information after the teammate give explanation to each other. The element of comprehension and critical thinking are inserted by giving the home group questions related to the main points that they got from the whole material. The questions are asked them to identify the theme, social function and generic structures of the text and they analyse and evaluate their main point of each paragraph and take the conclusion for all.

*Stage VII: Review process whole groups;*

Teacher review whole group comprehension about the material. The whole group review before the test allowed for another accuracy check prior to the assessment.

*Stage VIII: Individual assessment and grades;*

Teacher share an evaluation quiz to evaluate the students' comprehension after learning.

*Stage IX: Re-teach any material missed on assessment as needed;*

The teacher teaches any material missed if it is needed. The re-teaching allowed teachers to continuously check for student understanding and mastery.

## **2.7 Flipped Classroom Model Integrated with Jigsaw IV Technique in Learning Reading**

Reading comprehension is a complex task, there are many different cognitive skills and abilities which related with it such as previous knowledge,

high reading interest and good reading strategy. Grabe and Stoller's assertion that class discussions of texts are an excellent way to teach students to understand the text they are reading although they "require an investment of classroom time" (Grabe and Stoller in Voss and Kostka, 2019). Flipped Classroom emphasizes the interactive learning activity indeed in-class time.

With lecture moved outside of the classroom, in-class learning time can be used for various tasks appropriate to student learning. In-class time should be used strategically for student support and interaction, by and with peers and/or the instructor. The group process in class would serve as an intermediary scaffold to allow students to build and deepen their knowledge prior to demonstrating their understanding individually. Even simply integrating more structured interaction opportunities, like Jigsaw Readings, where students can interact with one another to share their understandings of concepts or course readings, can be ways to enhance learning in a Flipped Classroom (Hsieh in Green, et al. (2017)). Supported by Rau, et.al. (2017) in flipped classroom model, instructor may structure collaborative activities with established method including the jigsaw cooperation method in which students learn complementary sets of materials and then explain the material to each other. In line with other scholars' experiments (e.g., Yamada, et al., 2015; Manchiryal, Rollakanti & Poloju, 2019; Erbil, 2020), all of these scholars have combined flipped classroom model with other collaborative learning techniques like Jigsaw and it resulted better performance on students' learning achievement.

Many studies have been proved that Flipped Classroom model had positive effect to teach students' reading comprehension even critical thinking (Kurnianto, et al. 2020; DeRuisseau, 2016) and over 90% post graduate law students found the flipped classroom model to be either effective or very effective to promote critical thinking (Liu, 2019). Lockwood in Voss & Kostka (2019), he stated that when flipped learning was implemented, students engaged in work outside of class that

requires them to use skills that are lower on Bloom's taxonomy, such as knowledge and comprehension. Furthermore, what is now done in class are activities that call for students to use skills that are higher on Bloom's taxonomy, such as application, analysis, evaluation, and creation. During in-class time, students engage in hand-on activities and practice under the teachers' guidance. They apply their comprehension in actual class time through active learning activities. Last, after class, all students have access to peer/instructor feedback from in-class session and have an assignment that are completed independently. It means that the teacher together with students evaluate the learning process to know to what extent the student's comprehension from the text.

Like Flipped Classroom, Jigsaw technique also has many reviews that it was effective to improve students reading comprehension. One of the latest studied on Indonesian EFL context showed that Jigsaw gave more effective application on teaching reading comprehension on senior secondary level in Medan (Tarigan, et.al 2021). Therefore, modifying Flipped Classroom integrated with Jigsaw is expected can improve students' reading comprehension even promote critical thinking skill. Some experts develop Jigsaw technique from original version due to they follow up some concern that happened after the implementation of old version, they tried to fix it become the best version of Jigsaw technique. In this case, Jigsaw IV is chosen to design learning activity by inserting the Jigsaw's stages to the Flipped Classroom model in order to achieve the objective of this study.

Jigsaw IV is a response from some concerns that Holliday found based on his previous research and this is more complete version from Jigsaw III. These are the additional stages that the Holliday applied in Jigsaw IV. In Jigsaw IV, the teacher introduced the lesson in a way that was user friendly; one, that the teacher felt comfortable utilizing in the classroom. The two quizzes addressed the issue of accuracy of answers that the students received from their peers. The teacher also

could judge whether the students were on "the same wavelength" by correcting the information before it was taught to their teammates. The whole group review before the test allowed for another accuracy check prior to the assessment. The final stage addressed the concern that dealt with mastery of the knowledge. The re-teaching allowed teachers to continuously check for student understanding and mastery.

**Table 2.1 Flipped Classroom Integrated with Jigsaw IV**

<b>Phase</b>	<b>Stages</b>	<b>Critical Thinking</b>
<b>Before Class</b>	- Introduction	
<b>In-Class Time</b>	- Expert sheets assigned to expert groups;	Inserted critical thinking
	- Groups answer the expert questions prior turn to returning to home teams;	Inserted critical thinking
	- Quiz on material in the expert group shared checking for accuracy;	
	- Students return to home teams sharing their information with their teammates;	Inserted critical thinking
	- Quiz on material shared checking for accuracy;	
	- Review process whole groups;	
<b>After Class</b>	- Individual assessment and grades;	Inserted critical thinking
	- Re-teach any material missed on assessment as needed;	

### **2.7.1 Procedure of Flipped Classroom Model Integrated with Jigsaw IV in Learning Reading**

One of the challenges of teaching academic reading is that this skill is cognitively and linguistically complex and thus need emphasis on the comprehending process in teaching learning procedure. For teaching reading through Flipped Classroom, English teachers have opportunities to incorporate this model with other interactive technique. The researcher may modify this model by inserting all stages of Jigsaw technique indeed in Flipped Classroom

phase. Procedure of modifying Flipped Classroom model integrated with Jigsaw IV refer to Hsieh in Green, et al. (2017) original theory, they are:

### ***Phase I: Before Class***

Set up the activities, divided students into groups (home and expert group), prepare the appropriate reading text and expert sheets before coming to the class, and prepare the video explanation about the general topic, after that publish it to the students 2 days before in-class time using online platform, i.e., WhatsApp; topic is explanation text, subtopic natural and social phenomena. The students free to read the text and watch the video explanation whenever dan wherever they want and in what situation before coming to the class. Its mean that in pre-class, the students will have done 1 stage of Jigsaw IV, they are:

1. *Introduction*; The teacher introduces the material to the whole class by giving the video explanation and reading text. All students in a class are asked to watch the video and read the text to get general comprehension about their own topic before becoming to the in-class time.

### ***Phase II: During Class***

Generally, in-class time, the students will be directed to discuss the reading text and expert sheet. The students will follow 6 stages on Jigsaw IV technique. Students are expected to have deeper comprehension after past this step. The detail stages of Jigsaw IV as follow:

2. *Expert sheets assigned to expert groups*; they are in the same topic join in one group, called expert group. This group will be shared an expert sheet therefore, they try to expert on their own topic by reading and searching from any sources until they get well comprehension to answer the expert sheet.

3. *Groups answer the expert questions prior turn to returning to home teams;* on expert group, they discuss their expert topic, each expert member give contribution ideas that they comprehend from the material.
4. *Quiz on material in the expert group shared checking for accuracy.* The expert groups are given a quiz to check the accuracy of their comprehension about the expert topic before sharing the information to home group. They identify the most important learning points and make a plan about how to teach their comprehension clearly to their own home group by preparing a report.
5. *Students return to home teams sharing their information with their teammates;* each student takes turns teaching what he or she has become an “expert” to the other “home group” members.
6. *Quiz on material shared checking for accuracy;* The home groups are given a quiz to check the accuracy of their comprehension about the whole topic. Like the previous quiz, the teacher could judge whether the students are on "the same wavelength" by correcting the information after the teammate give explanation to each other.
7. *Review process whole groups;* teacher review whole group comprehension about the material. The whole group review before the test allowed for another accuracy check prior to the assessment.

### ***Phase III: After Class***

At the end of the class, the students have to complete the assessment individually, for instance, answer an evaluation quiz or create a summary of the whole material that they have comprehend. In this stage, students will follow 2 last stages of Jigsaw IV:

8. *Individual assessment and grades*; teacher share an evaluation quiz to evaluate the students' comprehension after learning.
9. *Re-teach any material missed on assessment as needed*; The re-teaching allowed teachers to continuously check for student understanding and mastery.

## **2.8 Review of Previous Studies**

Reading comprehension is crucial to success in educational system. Students reading performance is useful for language acquisition. Then, this part discusses some previous studies related to Flipped Classroom model in teaching reading comprehension.

In accordance with the implementation of Flipped Classroom model in TEFL, the newest research was conducted by Fahmi, Friatin and Irianti (2020). They investigated the use of Flipped Classroom model in reading comprehension. This study was qualitative research used triangulation technique and the samples of this study were 23 students tenth grade and 1 English teacher of vocational school. The researcher used 3 instruments; the observation and the interview were used to investigate how the teacher implement Flipped Classroom in teaching reading comprehension, then the questionnaire was used to know the student's perception of implementing Flipped Classroom in reading comprehension. The result showed that the teacher uses Flipped Classroom in two main parts pre-classroom session (preparing and sharing the material) and in-classroom session (reviewing online material and monitoring collaborative work). Next, the answer of second research question viewed that the student's perception toward Flipped Classroom activities is positively. They assumed Flipped Classroom as a fun learning model which helped them became more active students and helped them overcome their shortcomings.

Secondary, the research was conducted by Hashemifardnia, Namasiandost and Shafiee (2018). They investigated the effect of implementing Flipped Classrooms on Iranian Junior High School Students' Reading Comprehension. This is experimental study and the sample was 50 Iranian pre-intermediate students. This study aimed to know 'does implementing Flipped Classroom have any significant effect on Iranian Junior High School students' reading comprehension?'. This research used pre-test and post-test to know the significant effect. The finding showed that the students who received instruction through Flipped Classroom had better performance compared to those who were trained through traditional classroom.

Research conducted in 2018 by Hari K. and Wulandari investigated the effect of Flipped Classroom towards students' achievement in teaching reading. This was an Action Research Design which used test, observation sheet and interview in conducted this research. The result showed that the students' reading achievement was improved by using Flipped Classroom. So, it was concluded that during the teaching and learning process, students were more active and enthusiastic. They had good willingness in following reading class. Students in critical reading class consisting of 32 students became samples in this research.

Additionally, another previous research by Herlindayana, Sahlan and Albert (2017) who investigated the effect of Flipped Classroom on students' reading comprehension on Senior High School Kartika XX-2, Kendari. 32 students were taken as samples in this research. The reading test; pre-test and post-test was analyzed to know the significant effect of Flipped Classroom on students' reading comprehension. The result showed the p value  $(0.000) < 005$ , which means that there was a significant positive effect of Flipped Classroom on students' reading comprehension. The open-ended questionnaire was also used and showed that the students reported that Flipped Classroom impacted positively on their learning process and learning experience.

Then, the quantitative research was conducted by Karimi and Hamzavi (2017) which the title is ‘the effect of flipped model on EFL learners’ reading comprehension: Learners’ attitude in focus’. This research investigated 50 EFL learners studying at an accredited private language institute in Isfahan. Comprehension test (pretest-posttest) and a questionnaire were used to know whether there is significant effect or not of implementing flipped model instruction and to evaluate students’ perceptions. The findings of the study indicated flipped model of instruction had a significant positive effect on EFL students’ reading comprehension development. Then, from the questionnaire, the results of frequency analyses revealed that EFL students had mostly positive attitude toward flipped model of instruction and agreed that flipped model of instruction would be useful in improving their reading skill. In general, flipped learning received the most positive remark from students in the survey.

The last previous research reporting Flipped Classroom to reading comprehension skill was done by Sin and Siahpoosh in 2020. This study explored (Q1) Does Flipped Classroom have any significant effect on Iranian EFL learners’ reading comprehension at elementary level? (Q2) Does Flipped Classroom have any significant effect on Iranian EFL learners’ reading comprehension at intermediate level? (Q3) Does Flipped Classroom have the same effect on elementary and intermediate levels EFL learners’ reading comprehension? the sample was 120 Female students in Paniz institute, Ardebil, Iran. This was True-experimental, Quantitative research. By using 3 kinds of instrument, they are Oxford Placement Test, PET Reading Comprehension Test and Reading Comprehension Test (Post-test), this study resulted the answer of these 3 research questions. RQ1: Based on the results the elementary experimental group had a higher mean than the control group on the posttest of reading comprehension. The results of the independent t-test indicated that the experimental group significantly outperformed then control group. RQ2: Based on the results it can be

claimed that the intermediate experimental group had a higher mean than the control group on the posttest of reading comprehension. It means the same with the first result. RQ3: An independent-samples t-test was run to compare the experimental elementary and intermediate group's means on the gain score in order to probe the third null-hypothesis. The results of the independent-samples t-test, it indicated that there was not any significant difference between the intermediate and elementary groups' mean on gain score.

Based on the result, it can be concluded that the implementing of Flipped Classrooms in teaching and learning can produce positive results because they could absorb students in learning English. The positive effects of using Flipped Classrooms became obvious after the treatment.

Several studies that are mentioned above have demonstrated the success of implementing Flipped Classroom to teach reading and critical thinking yet the procedure of Flipped Classroom on those previous studies is original version. Additionally, refers to those previous studies, some area specifically critical thinking standard has not been explored yet and it leads this current study to investigate it. Therefore, this research aims to investigate the improvement of students' reading comprehension through Flipped Classroom model integrated with Jigsaw IV technique and to know in what extent is students achieved critical thinking after the implementation of Flipped Classroom model.

## **2.9 Theoretical Framework**

In teaching learning process, the goals of teaching reading are to teach our students to read and to teach our students to get comprehension . For students, reading is a notable skill in learning English to achieve the academic success. They should have good reading ability by comprehend the reading text. Behind that, the students on the higher level of education are charged beyond the

comprehension. That comprehending process will more difficult, students need more critically in thinking or higher order thinking skill (HOTS).

Teaching reading to achieve students' comprehension is highly important but then comprehend the reading text more critically will engage the students in learning, since they use their thinking more and it will improve their cognitive skill. This thing become important because students with critical thinking ability are assumed that they have deeper comprehension. Fortunately, comprehension and critical thinking skills can be taught for EFL students by using innovative learning model that involve an IT and interactive learning process.

Developing the modified Flipped Classroom is effective solution to improve students' reading comprehension. Flipped Classroom was introduced as an innovative learning model with technologically involvement which appeared in 2007 By Jonathan Bergmann and Aaron Sams. Flipped Classroom is a learning model which is traditionally done in class is now done at home and which is traditionally done as homework is now completed in class. Hence, the activities in Flipped Classroom model consists of *before class*, *during class* and *after class*.

Flipped Classroom model is considered that having flexibility in learning time. This model allows the students to have extension of learning time by learning outside the classroom with the help of technology. Even though, the activity in the classroom also became attention due to the interactive learning and meaningful activities should happen in this model. The activities are focused deeper to students' comprehension to avoid the misconception since they read the material at home. Then, after class session, the students have to complete the assessment individually to evaluate the whole material that they have comprehend.

The Flipped Classroom model is given the opportunity to collaborate with wide variety of innovative learning approach/techniques which will improve students' reading comprehension and even more to critical thinking. As

collaborate with the activities to simultaneously foster EFL students' comprehension skills by integrating Jigsaw IV technique enhanced activities such as home group work, expert group work, expert sheet questions that demand real analysis, or evaluation quiz will nurture students' comprehension and also critical thinking skill. Since in this case, the element of critical thinking is inserted in some conceptual quizzes and the utilizing of video explanation. This leads the Flipped Classroom model raise up student-center learning. The teacher becomes facilitator who give the guidance and any helps for student's difficulties. Based on the explanation above, it can be concluded that using Flipped Classroom model which inserted another innovative learning approaches/techniques to improve students' reading comprehension will be effective.

## **2.10 Hypotheses**

There are some hypotheses which proposed based on the research questions formulation, as follow:

1. For the first research question, the hypothesis is:

Ha: There is significant difference of using flipped classroom model integrated with Jigsaw IV and original flipped classroom model for students' reading comprehension achievement.

### **III. RESEARCH METHODS**

This chapter discusses the method of the study which is related to the research design. The discussions in this chapter focus on the setting of the study, research variable, research participants, research design, data collection, research instrument, validity and reliability, and data analysis.

#### **3.1 Setting of the Study**

##### **a. Time**

The study has been conducted at SMAN 1 Gedongtataan, on May 20<sup>th</sup>, 2021 to June 17<sup>th</sup>, 2021. The researcher used two classes in the eleventh grade of the second semester in 2020/2021 academic year.

##### **b. Place**

The study has been conducted at SMAN 1 Gedongtataan, Pesawaran 2020/2021 academic year. Senior High School students have been chosen because Flipped Classroom model need students responsibility and capability to access the technological tools. Then, when the students learnt at home, they need independence how they have to learn and they need higher level of thinking to comprehend topic by themselves.

#### **3.2 Population and Sample**

The researcher used two classes as the sample of the research, one class as an experimental group and other class as control group. The population of this study was eleventh grade students. The samples of the research had been chosen through cluster random sampling. XI IPA 2 as experimental class, XI IPA 1 as control class and XI IPA 7 as try-out class. The samples in experimental class

were 32 students, control class were 33 students and try-out class were 32 students.

### 3.3 Research Design

The research design used in this study was quantitative method in order to determine the significant difference of students' reading comprehension achievement between two classes; experimental class and other class was control class. In this study, the researcher has a true-experimental research which compared students on experimental class with control class . Hatch and Farhady (1982) state that the researcher applies true experimental design as a research design in which an experimental group of participants receives the special treatment, and the other group does not experimental by giving a specific treatment to measure the significant effect of this model instruction. Hence, the researcher implements the Control Group Pre test - Post test Design formulated by Setiyadi (2018) which was seen below:

**Table 3.1 Control Group Pre test-Post test Design**

Group/ Class	Pre-test	Independent Variable	Post-test
K1	T1	X	T2
K2	T1	O	T2

Note:

K1 : Experimental Group

K2 : Control Group

T1 : Pre-test measurement of the students' reading comprehension

X : Treatment by using flipped classroom model integrated Jigsaw IV

O : Treatment by using original flipped classroom model

T2 : Post-test measurement of the students' reading comprehension

The pre-test was used to get the students' reading comprehension score before the treatment. Then, 3 times of treatments have been given in the form of learning activities about explanation text materials by using flipped classroom model integrated with Jigsaw IV for experimental class and by using original flipped classroom in control class. After that, the post-test has been held to discover the improvement of the students' reading comprehension achievement after the treatments.

For the first research question, the reading comprehension test was used for examining the students' achievement on reading comprehension before and after the treatment. The students' results could be analyzed to know their improvement from pre-test to post-test. For the second research question, this research used descriptive analysis method to describe the result. Questionnaire was given to find out the extent of critical thinking was achieved by the students in learning reading after implementation of Flipped Classroom model. The students' response of questionnaire analyzed through Median-Split method to divide the students' level in 3 categories (low, moderate and high).

### **3.4 Variables of Research**

As an important factor, variable was needed in conducting the research. Craswell (2012) stated that a variable is a characteristic or attribute of an individual or an organization that a researcher can measure or observe and varies among individuals or organizations studied. In this research, there were three kinds of variable which was investigated. They are dependent, independent and intervening variable, which were classified as:

- a. 2 Independent variables were Flipped Classroom model integrated with Jigsaw type IV (X1) and original Flipped Classroom model (X2)
- b. Dependent variable was the students' reading comprehension (Y)
- c. Intervening variable was students' critical thinking (Z)

### 3.5 Research Instruments

In conducting the research, reading comprehension test and questionnaire have been used for collecting the data.

#### 3.5.1 Reading Comprehension Test

The tests were used to assess the students' achievement on comprehending texts after the implementation of Flipped Classroom model. In these tests, the students have been given a multiple choice test of reading comprehension and then the researcher collected the data to determine the significant differences of mean score of student before and after the treatment. The tests which used based on 5 aspects of reading comprehension (Suparman, 2012). The test consisted of pre-test and post-test (Appendix 7 & 10). The specification of test can be seen below:

**Table 3.2 The Specification of Reading Test on Pre-test**

No	Aspect of Critical Thinking Standard	Item Number	Total
1	Main idea	2, 3, 11, 13, 15, 20, 24, 27, 31, 37,	10
2	Supporting Detail	1, 4, 6, 8, 23, 25, 10, 16, 17, 28, 32, 33, 35, 36, 50	15
3	Inference	5, 12, 19, 26, 29, 30, 38, 49	8
4	Reference	14, 22	2
5	Vocabulary	7, 9, 18, 21, 34	5
<b>Total</b>			<b>40</b>

**Table 3.3 The Specification of Reading Test on Post-test**

No	Aspect of Critical Thinking Standard	Item Number	Total
1	Main idea	6, 7, 11, 14, 21, 24, 26, 30, 31, 35	10
2	Supporting Detail	2, 4, 5, 8, 9, 12, 17, 18, 27, 32, 34, 36, 37, 39, 40	15
3	Inference	1, 13, 15, 16, 20, 23, 28, 29	8
4	Reference	22, 33	2
5	Vocabulary	3, 10, 19, 25, 38	5
<b>Total</b>			<b>40</b>

### **3.5.2 Questionnaire**

There would be questionnaire based on critical thinking standard develop by the researcher in this research. The questionnaire was used to investigate the extent of critical thinking was achieved by the students after the implementation of Flipped Classroom model. According to Bassham, et.al. (2011), a characteristic of critical thinker is critical thinkers have a passionate drive for clarity, precision, accuracy, and other critical thinking standards.

The questionnaire was presented based on 4 Likert Scales and it was adapted from critical thinking standard stated by Basham, et.al (2011). The item range was from 1 up to 4, there were categories 4 for “strongly agree”, 3 for “agree”, 2 for “disagree”, 1 for “strongly disagree” (Appendix 17). The result of the questionnaire showed the level of critical thinking which achieved by the students after being taught by using flipped classroom model in learning reading.

### **3.6 Validity and Reliability of the Instruments**

To know whether the instrument was appropriate or not, this research examine its validity and reliability. Those two aspects were highly important for a research to decide the right instrument.

#### **3.6.1 Validity**

To know whether the test was good or not, some criteria should be considered. The criteria of a good test were valid (content validity and construct validity). As stated by Hatch and Farhady (1982) said that a test can be said valid if a test measures the object to be measured and suitable for the criteria. In this study, the researcher will use content validity and construct validity for the test instruments.

## 1) Reading test validity

The reading test was used to measure students' reading skill since the instrument can be said as valid when it measures what should be measured. Content validity is the test which measures appropriate content, it means that the content of the test should represent the material to be taught (Setiyadi, 2018). In order to see whether the content of test is valid or not, in arranging test material, the researcher should be guided by the syllabus of the second grade senior high school which relate to the materials which is explanation text more specific to natural and social phenomena. The following table will present the content validity of this research.

**Table 3.4 The Content Validity of Reading Test**

3.8 Distinguish social functions, text structures, and linguistic elements of some oral and written explanation texts by giving and requesting information regarding natural or social phenomena covered in subjects class XI, according to the context of their use.	Explanation text; natural and social phenomena	Read some explanation text related with natural and social phenomena, collect information from any sources about the explanation text, and take turn to present the text to your classmate	Book from Ministry of Education and Culture (English for SMA / MA/ SMK / MAK class XI)
4.8 Capturing contextually meaning related to social function, text structure, and linguistic elements of some oral and written explanation text by giving and asking information related to natural or social phenomena covered in subjects class XI.			

Construct validity is focused on the aspect of the measurement because construct validity means the test measures the skill which should be measured. In construct validity, there will be some aspects to be assessed which represent such

indicators. This research administered the test where the scoring covered five aspects of reading comprehension based on Suparman (2012), they are: main idea, supporting details, inference, reference and vocabulary. Then, researcher used expert judgement to analyze the face of this test (Appendix 9 & 13).

## 2) Questionnaire validity

The questionnaire based on critical thinking standard has been developed by the researcher uses the theory from Bassham et.al. (2011). The researcher used expert judgement to analyze the face validity and construct validity of this questionnaire. The validation form has been given to the first advisor and second advisor as the expert and got the validation checklist whether all items already represent the critical thinking standard theory or not (Appendix 18).

After accepted validation from expert, the questionnaire was tried-out. To analyze the construct and content validity, the results of try-out were calculated by correlating each item with total score using Correlation Pearson Product Moment. The result showed that all items of questionnaire was valid ( $r_{table} < r_{hitung}$ ). From the data showed that  $r_{table}$  for  $n-2= 27$  samples with significance level 5% were 0.381, whereas all the items have  $r_{hitung}$  more than 0.381. It means that all items of questionnaire were valid.

The table specification of critical thinking level questionnaire can be seen below:

**Table 3.5 Specification of Critical Thinking Level Questionnaire**

No	Standard of Critical Thinking	Item Numbers	Total
1	Clarity	1, 2, 3	3
2	Precision	4	1
3	Accuracy	5, 6	2
4	Relevance	7, 8	2
5	Consistency	9	1
6	Logical Correctness	10, 11	2
7	Completeness	12	1
8	Fairness	13, 14	2
<b>Total</b>			<b>14</b>

### 3.6.2. Reliability

Traditionally, reliability was used as a measure of quality and the term means repeatability or consistency. Fraenkel and Wallen (2011) state that reliability refers to the consistency of the scores obtained how consistent they are for each individual from one administration of an instrument to another and from one set of items to another.

#### 1. Reading test reliability

The reading test was tried out first to analyze the reliability of the test items. The researcher used Split-Half Method; odd and even number to find the coefficient of the reliability of the first and the second half group. After getting the Guttman split-half coefficient for odd number was .822 and for even number was .845, the researcher analyzed the alpha value in “Cronbach Alpha if Item Deleted” to know whether each items test was reliable or not (Appendix 4 & 5). In general, for items on odd and even number have high to very high reliability since the items’ reliability coefficient between .7000 to .9000. The criteria of reliability test as follow:

Reliability coefficient 0.000 – 0.200 is very low reliability

Reliability coefficient 0.200 – 0.400 is low reliability

Reliability coefficient 0.400 – 0.600 is fair reliability

Reliability coefficient 0.600 – 0.800 is high reliability

Reliability coefficient 0.800 – 1.000 very high reliability

#### 2. Questionnaire Reliability

For the reliability of questionnaire, the researcher used internal consistency test. According to Budiastuti & Bandur (2018), the internal consistency test that is most appropriate to used is Alpha’s Cronbach. After the questionnaire was tried out, the result of calculation data showed that the alpha coefficient was .806. It

means that the questionnaire has good reliability as follow the criteria of alpha coefficient value:

0 = no reliability

>.70 = acceptable reliability

>.80 = good reliability

.90 = excellent reliability

1 = perfect reliability

### **3.7 Data Collecting Technique**

In conducting this research, the technique for collecting the data was needed, this research used test and non-test technique. The test has been conducted to obtain the result of students' reading comprehension achievement, while non-test in the form of the questionnaire was used to investigate the extent of students' critical thinking level that was achieved after implementing Flipped Classroom model.

In collecting the data, the researcher used 2 reading tests and 1 questionnaire, they were:

#### **1. Pre-test**

The pre-test has been given to the students on experimental and control class before the treatments (Appendix 7). The pre-test was administered to measure the students' reading comprehension ability before the treatment. The test was in the form of multiple-choice questions about explanation text with 5 alternative options.

#### **2. Post-test**

The post-test has been conducted for the students in both two classes after the treatments (Appendix 11). It was used to know the students' reading comprehension achievement after being taught by using flipped classroom model integrated with Jigsaw IV in experimental group and original flipped

classroom model in control class. The test is in the form of multiple-choice questions about explanation text with 5 alternative options.

### 3. Questionnaire

In exploring the second research question, this research distributed a questionnaire which consist of 14 items (Appendix 17). The items of questionnaire were developed by the researcher itself with adopted theory of critical thinking standard by Bassham et.al. (2011) to find out the extent of students' critical thinking level that was achieved after implementing Flipped Classroom model. The questionnaire divided students into 3 level categories: low level, moderate level and high level of critical thinking.

## 3.8 Research Procedures

In conducted this researcher, the researcher applied the following procedures:

### 1. Determining the research problem

The main purpose of conducting this research was find out whether the students' reading comprehension achievement would increases by implementing Flipped Classroom model integrated with interactive learning technique like Jigsaw IV. Furthermore, investigate the extent of students' critical thinking level that was achieved after implementing Flipped Classroom model.

### 2. Determining the subject of research

The researcher chose the second grades senior high school students of SMAN 1 Gedongtataan as the subject of research. While the sample used two classes, one as experimental class consist of 32 students and another one as control class consist of 33 students also.

3. Designing instruments of research

The instruments of this research were reading tests and questionnaire. The students in both 2 classes got the same instruments during the research. Reading test consisted of 40 multiple choice questions and questionnaire consisted of 14 statements.

4. Trying out the test

Before the test was used for conducting pre-test and post-test, the test has to try out to identify how accurate and effective the test before used it to collect the data and identify whether the test could be administered or not (Appendix 3). Therefore, the researcher has been given to the students in one class (different from experimental and control class). The tried out has been conducted on May 20<sup>th</sup>, 2021 using google form. Then the test items were evaluated to get its validity and reliability (Appendix 4).

5. Administering the pre-test

Before conduct the treatment, the pre-test has been given to the students on May 24<sup>th</sup>, 2021 to know their initial ability on reading comprehension. Google form was used as a media to collect the data from pre-test. The result of pre-test was used to get the gain of score later after the post-test administered.

6. Conducting the treatment

The treatments have been conducted for about 3 times meeting in class. The treatments have been conducted on May 27<sup>th</sup> – June 16<sup>th</sup>, 2021. During the treatment, the researcher taught the students by using the proposed learning mode. Experimental class was taught by using flipped classroom model integrated with Jigsaw IV, and for control class was taught by using original flipped classroom model. There was a lesson plan as a guideline for the researcher to control the class activities flow. In pandemic situation, the treatment did by online learning mode. All of the activities of sharing

material and discussing section was done on WA group. While for presenting the results of the discussion, the class activities used ZOOM application for virtual meeting. The design activities for students who were taught through integrating flipped classroom model and jigsaw IV on experimental class as follows (Appendix 1):

- 1) First meeting, the topic material about natural phenomena. A reading text and a video explanation were given in pre-class time. Then in-class time, the students collaboratively discussed with expert group and home group and presented the results of discussion. After class time, they had review and evaluation quiz.
- 2) Second meeting, the topic material about social phenomena. In pre-class time, students were shared a reading text and a video explanation. They also did the discussion with their own expert group to answer the expert sheet and expert quiz. Then, in-class time, they followed the activities on home group including discussion and presentation, after that review when they have been done. Next, after class, an evaluation quiz and re-teaching video were given to them.
- 3) Third meeting, the topic material about natural phenomena. In this meeting, the text and reading material were shared together with home group quiz. The students have discussed with their own home group and presented the result of the discussion in pre-class time. Then, in-class time, they discussed in each expert group and review after finished. After class, they have to complete an evaluation quiz and the teacher re-teach the material which was not clear yet.

The design activities for students who were taught through original flipped classroom model on control class for first until third meeting were same (Appendix 2). The students were shared a reading text material in pre-class time. The topics were about natural phenomena and social phenomena.

They also have guided questions to direct their thinking. In in-class time, they discussed with their pairs and presented the results of the discussion related to the guided questions. Then, after class, they answered an evaluation quiz.

7. Administering the post-test

After the treatment given to the student, the post-test has been administered on June 17<sup>th</sup>, 2021. Google form was used to collect the data from post-test. This test was aimed to know the students' reading comprehension achievement after the treatment. Furthermore, the result of post-test was compared with pre-test result to know the improvement.

8. Distributing questionnaire

After conducting the treatment, in addition after completing the post-test, all students must also complete the questionnaire on google form. The questionnaire was shared on June 17<sup>th</sup>, 2021. The results of the questionnaire were analyzed to answer the second research question.

9. Analyzing the data

After getting the data which were needed for this research, those data were analyzed. The researcher examined the result by comparing the score of both two classes in order to analyze the significant difference of the achievement (Appendix 14 & 15). For the questionnaire, the researcher analyzed by divided the students into 3 level categories, they are low level, moderate level and high level of critical thinking (Appendix 19). After that, the researcher investigated the level of students' critical thinking that was achieved after implementing flipped classroom model in learning reading

### **3.9 Data Analysis**

In analyzing data, the independent sample t-test was used. Independent sample t-test statistically compared two difference mean from

different data and different group. In parametric statistics, there were assumptions which should be fulfilled, they were normality and homogeneity test.

**a. Normality test**

Normality test was used to know if the data gotten during the research have normal distribution or not, it can be analyzed in Parametric test. In this research, statistical computation by using SPSS version 26 (*Statistical Package For Social Science*) was used to know whether the data is normal or not. The tests of normaly employed are Shapiro-Wilk test. The Hypotheses formula were:

$H_0$  = The data have normal distribution.

$H_a$  = The data do not have normal distribution.

While the criteria of acceptance or rejection of hypotheses for normality test were:

$H_0$  is accepted if  $\text{Sig.} > \alpha = 0,05$

$H_a$  is accepted if  $\text{Sig.} < \alpha = 0,05$

**b. Homogeneity Test**

Homogeneity test was used to determine whether the data obtained from the sample homogeneous or not. Yet, the homogeneity of data variance is not an absolute requirement. The statistical computation also by using SPSS version 26 (*Statistical Package For Social Science*) for homogeneity test. The test of homogeneity employing Levene statistic test.

The hypotheses for the homogeneity test were:

$H_0$  = The variance of the data is homogeneous.

$H_a$  = The variance of the data is not homogeneous.

While the criteria of acceptance or rejection of hypotheses for homogeneity test were:

$H_0$  is accepted if  $\text{Sig.} > \alpha = 0,05$

$H_a$  is accepted if  $\text{Sig.} < \alpha = 0,05$

### 3.10 Hypotheses

Hypothesis was a temporary answer that was proposed in research which then becomes a grip as the direction of research. Research hypothesis is a predictive statement, capable of being tested by scientific methods. The hypothesis proposed should be examined in the discussion, whether accepted or rejected.

$H_a$ : There is significant difference of using flipped classroom model integrated with Jigsaw IV and original flipped classroom model for students' reading comprehension achievement.

$H_0$ : There is no significant difference of using flipped classroom model integrated with Jigsaw IV and original flipped classroom model for students' reading comprehension achievement.

## V. CONCLUSIONS AND SUGGESTIONS

This chapter provides the conclusions of the research findings and suggestions for further research to English teacher and the other researchers who want to conducted the same context.

### 5.1 Conclusions

The implementation of flipped classroom model enhanced students' reading comprehension in both of class. Either flipped classroom model integrated with jigsaw IV or the original flipped classroom model showed increasing achievement. Since, this model provided extended learning time through learning outside and inside the classroom. Therefore, the students have enough time in learning reading. In outside the classroom, the students grasped knowledge and comprehension, then, in inside the classroom, they applied, analyzed, evaluated and create their comprehension through active learning process. Then, the flexibility of this model which allowed it to integrate with other interactive learning technique push the students to engage in learning inside the classroom.

Yet, the better result was showed by students who were taught by using flipped classroom model integrated with jigsaw IV. This modified model provided video explanation which given outside the classroom, it made the students easy to visualize the information. They related their thought about what they get from reading text and what it is in the video. Therefore, they more prepared to engage in learning and discussing section. This modified model also provides students with responsibility to contribute idea, so that the students force themselves to have deep comprehension. Additionally, the students got exposed by enormous chance to develop their comprehension in collaborative learning. They were engaged in active learning process by analyzing, discussing, sharing, answering some quizzes together with their own expert and home group and evaluating the learning

process. All these elements in jigsaw IV such group work, work sheet and exercise quizzes practiced the students' thought to more active to process the information during in actual class time. It brought the students into a higher level of comprehension.

Furthermore, the implementation of flipped classroom model could give students chance to promote their thinking into higher order thinking skill. This model enhanced learners' critical thinking skill on moderate level in some extents such as precision, relevance, consistency, logical correctness, completeness and fairness standards. During teaching reading through flipped classroom model, learners have practiced some critical thinking skill by involving their thought to get specific information in detail, to think relevance information or idea related to the discussed matters, to be consistent with information they believed, to brings a variety of thoughts together into some order combination of thoughts was mutually supporting and makes sense, to conclude and evaluate information of the text, to comment friends and judge the text without reference to one's own interests or be more objective. While in some extents such as clarity and accuracy, learners achieve low level of critical thinking. Flipped classroom model did not promote learners to grasp information from the text and communicate their thought clearly since learning outside the classroom, then it did not encourage learners to check the information of the text whether it represents things as they really are, such true or not and took from reliable sources or not.

## **5.2 Suggestions**

In conducting the present study, the researcher faces some obstacles that obstructs the research progress. Initially, the lack of teacher in controlling students in learning outside the classroom. Furthermore, due to the current circumstance of the pandemic which the teaching and learning process have to conduct through long distance learning, make it hard to do the in-class time include problem of

internet connection, internet quota and students' device. These were the main obstacles that affected our research progress because this research has been conducted only through online platforms. Thus, some suggestions could be listed for the teachers and further researchers.

### **5.2.1. For the Teachers**

1. Refer to the finding, teachers should stimulate their students' thinking by adopting learning model that develop their comprehension and higher order thinking skill.
2. Refer to some obstacles, teachers should prepare any online platform which can control students in outside the classroom. Thus, the teachers can make sure that all students already learn before come to the in-class time. It will force the students' readiness in learning reading.
3. Teachers should provide flexible methods so that they can change the ways of teaching based on the current condition on pandemic. In long distance learning or online learning, teachers may use a good video conferencing application to be more effective doing activities through virtually meet with the students during the in-class time.

### **5.2.2 For the Further Researchers**

1. As this limitation of this study is only conduct the use of flipped classroom model integrated with Jigsaw IV in teaching reading, the further researchers are suggested to conduct the research by integrating flipped classroom model with others interactive and collaborative learning technique such GI (group investigation), Number Head Together, and etc. for teaching all English skill.
2. As the finding that some critical thinking standards are achieved by students in learning through flipped classroom model. Therefore, the space especially improving students' critical thinking skill is still needed

for EFL students in Indonesia. The further researchers may be suggested to conduct the research by implementing flipped classroom model to improve students' critical thinking skill.

3. As this limitation of this study is only use closed-ended questionnaire to analyze and describe the students' level of critical thinking achievement after teaching reading, the further researchers are suggested to conduct research to know the students critical thinking improvement using comprehension check test as the instrument.

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