

II. FRAME OF THEORIES

This chapter presents some literature reviews, they are jigsaw technique, the benefit and weakness of using jigsaw, concept of listening, listening comprehension, teaching of listening comprehension, teaching of listening comprehension through jigsaw technique, motivation, motivation in learning English, measurement of motivation in learning English, concept of narrative & spoof text, theoretical assumption, and hypothesizes.

2.1. Concept of Jigsaw Technique

Elliot Aronson (1978) says that the jigsaw technique is so named because each student in jigsaw classroom has to become an expert on single topic that is crucial part of a larger academic puzzle. It means in using jigsaw technique, the students need to cooperate among them in order to finish the certain task. Aronson (1991) further says that jigsaw is used in cooperative strategies work in listening classroom. It means jigsaw technique as one of cooperative learning strategies which requires student-student interaction in each activities. These arguments is supported by Benneth (1991) said that jigsaw is a cooperative learning structure that promotes the sharing and the understanding of ideas or texts. The main focus is, each information must be shared to other member groups so that the discussion will happen in that situation.

Jigsaw listening is the term popularized by “Marion Geddes” and “Gill Sturbridge” to describe an activity in which different student get different information from different listening passages which they then have to share in order to perform some kind of task. In other words, four or five students may each listen to tape in short paragraph. Then, each student will hear a different piece of the “Jigsaw”. After that, The students join to use their “piece” to put jigsaw together. Therefore, students must master in one topic that they have heard, after that, they must share that information to other member groups in order to arrange complete information.

The researcher believe that as cooperative learning technique can reduce social conflict among school students, promotes better learning, improves student motivation, and increases enjoyment of the learning experience.

2.2. Benefit and Weakness of Using Jigsaw

Jigsaw technique has some benefits and weakness in application for learning process. The most important thing, teacher as a facilitator can maximizes the students’ potential talent through jigsaw technique, and he can minimize the negative effect of jigsaw technique. The following as The benefit of using jigsaw are which taken from Caroll, 1986, (208-210).

1. Teacher is not the sole provider of knowledge

Teacher is, not only one of the sources of information which will be applied but also the students will take a vital role in this technique to distribute knowledge to other students.

2. Efficient way to learn.

This technique takes an efficient way to learn new materials effectively. It can be seen from characteristic of Jigsaw technique.

3. Students take ownership in the work and achievement.

Students will learn about the responsibility of their work and achievement through teamwork.

4. Students are held accountable among their peers.

Students will be familiar with their other friends. Then, all students will be involved in learning process so that it reduces competition among students.

5. Learning revolves around interaction with peers.

Student-student interaction will improve significantly. Because this technique will take a time of majority of learning in teamwork.

6. Students are active participants in the learning process

Students must be active participants because the successful work will be success or not. It depends on students' active participation or not.

7. Builds interpersonal and interactive skills

Indirectly, this technique will improve students' interpersonal and interactive skills among their friends

Weakness of Jigsaw Method

Here are the weaknesses of jigsaw technique which are taken from Carroll, 1986, (208-210). Hopefully, by considering the weakness, the teacher can reduce the negative effect of this technique.

a. The Problem of the Dominant learner.

Many jigsaw teachers find it useful to appoint one of the learners to be the discussion leader for each session, on a rotating basis. It is the leader's job to call on learners in a fair manner and try to spread participation evenly. In addition, learners quickly realize that the group runs more effectively if each student is allowed to present her or his material before question and comments are taken. The self-interest of the group eventually reduces the problem of dominance.

b. The Problem of the slow learner.

Teachers must make sure that learner with poor study skills do not present an inferior report to the jigsaw group. To deal with this problem, the jigsaw technique relies on "expert" groups. Before presenting a report to their jigsaw groups, each learner enters an expert group consisting of other learners who have prepared a report on the same topic. In the expert group, learners have a chance to discuss their report and modify it based on the suggestions of other members of their expert group. This system works very well. In the early stages, teachers may want to monitor the expert groups carefully, just to make sure that each learner ends with an accurate report to bring to her or his jigsaw group. Most teachers

find that once the expert groups get the hang of it, close monitoring becomes unnecessary.

c. The Problem of Bright Learners Becoming Bored.

Boredom can be a problem in any classroom, regardless of the learning technique being used. Many Researchers suggest, however, that there is less boredom in jigsaw classrooms than in traditional classrooms. Younger students in jigsaw classes report liking school better, and this is true for the bright learners as well as the slower learners. After all, being in the position of a teacher can be an exciting change of pace for all learners. If bright learners are encouraged to develop the mind set of "teacher," the learning experience can be transformed from a boring task into an exciting challenge. Not only does such a challenge produce psychological benefits, but the learning is frequently more efficient.

d. The Problem of Students Who Have Been Trained to Compete.

Many researchers suggest that jigsaw has its strongest effect if introduced in elementary school. When children have been exposed to jigsaw in their early years, little more than a "booster shot" (one hour per day) of jigsaw in middle school and high school is required to maintain the benefits of cooperative learning.

What if jigsaw has not been used in elementary school? Admittedly, it is an uphill battle to introduce cooperative learning to 16-year olds who have never before experienced it. Old habits are not easy to break. But they can be broken, and it is never too late to begin. Experience has shown that although it generally takes a bit

longer, most high school learners participating in jigsaw for the first time display a remarkable ability to benefit from the cooperative structure.

2.3. Concept of Listening

Listening is the first skill that the students have to master before learning a foreign language. Listening is the skill that children acquire first, especially if they have not yet learnt to read. This is added by Scott and Yetsberg (2000:75) who say when the pupils start to learn a foreign language, it is going in mainly through their ears and what the pupils' hearing are their main source of the language. So in language skills, listening is the main point of studying language before other skills.

Listening is an active and creative process which requires mastery of skills, listening is the dominant means of sensory comprehension, because in listening, the listener plays a very active part in connecting the overall messages which are eventually exchanged between listener and speaker. It is obvious that listening need thinking and memory. This statement comes from Morley (1976) who said that listening is receiving, receiving requires thinking and thinking requires memory. There are no ways to separate listening, thinking, and memory.

It is necessary to recognize the differences between hearing and listening. Hearing is simply an awareness of a recognizable sound, while listening is a continuing process including not only perception but also interpretation, assimilation,

association, and reaction (Henning: 1966). In other words, listening is the first step of the main step in learning language. Listening involves students' ability to interpret, to assimilate, and to associate sounds so that they can get the main idea of the information and react properly to that information.

There are some differences types of listening based on Syque (2002 : 5), they are :

1. Dialogic Listening

In dialogic listening, we learn through conversation and engaged interchange of ideas and information in which we actively seek to learn more about the person and how they think.

2. Therapeutic Listening

In Therapeutic Listening, we are not only empathizing with the speaker but also to use this deep connection in order to help the speaker understand, change, or develop in some way.

3. Empathetic listening

In empathetic listening we seek to understand beliefs, models, emotions, and goals of other people. This requires excellent discrimination and close attention to the nuances of emotional signals. We show the expose we get by demonstrating out empathy in our demeanor toward them.

4. Appreciative Listening

In appreciative listening, we seek certain information, which will meet our needs and goals .For example when we are listening to good music, poetry, or stirring words of great leaders.

5. **Comprehensive Listening**

In comprehension listening we try to make sense the meaning or to comprehend what others are really saying. And through understanding body language, voice, etc. Help us to understand what other person really mean.

6. **Discriminative Listening**

Discriminative listening is the most basic type of listening, by the difference between different sound is identified. We learn to discriminate sounds and phonemes of the language. And to discriminate between muscle and skeletal movements that signify different meaning.

7. **Evaluative Listening**

In evaluate listening we make judgments' about what other person is saying, whether something is good, bad, worthy, or unworthy. It is particularly pertinent when other person is trying to persuade us, to change our behavior or our culture.

The researcher uses comprehensive listening as listening type of his research. Because he uses questions with information in listening paragraph in order to measure students' listening ability. Besides that, comprehensive listening type is appropriate with *SMA School Based Curriculum (KTSP)* which focus on understanding communication in daily activities.

2.4. Concept of Listening Comprehension

Since listening is, according to Wang Shouyuan (2003), the most important component in the five aspects of overall English competence he suggests as listening, speaking, reading, writing and translation, it deserves particular

attention. Educators must actively explore the nature and process of listening comprehension and study the theory and methodology of listening comprehension in order to improve listening teaching outcomes and make students recognize that listening comprehension is the crucial aspect of English learning.

From the point of view of constructivist linguistics, foreign language teaching should focus on language form and structure, thus, listening teaching is undertaken in each of the four aspects of language form. When students are taught to understand a passage of text, teachers first let them discriminate between the pronunciation of vowels and consonants, then understand vocabulary, sentences and discourses. The goals of this listening teaching model from the “bottom-up” is to help students understand the meaning of vocabulary by discriminating sounds, to understand sentence meaning, and to monitor and control the meaning of discourses by understanding sentence meaning.

Since the 1970s, with the development of functional language theory, there has been an emphasis on the research of language function in society. Functional linguistic experts recognize language as a communicative tool, but not an isolated structure system. Consequently the teaching of listening is not simply intended to make students hear a sound, a word or a sentence, rather, the goal is to cultivate students’ abilities to understand speakers’ intentions accurately and communicate with each other effectively.

Emmert (1994) says that Listening is an active process by which students receive, construct meaning from, and respond to spoken and or nonverbal message. Therefore, Listening is really active process in which in daily communication the

listeners play a very active role in receiving the overall messages from the speakers.

Abbot et al (1981) state that there are some purposes and nature of listening comprehension:

- 1) Giving experience to the learners in listening to a wide variety of language, and different text languages.
- 2) Giving training to the learners to listen flexibility.
- 3) Providing a stimulus for other activities.
- 4) Giving opportunities to the learners to interact while listening.

Listening consists of micro and macro skills which like Hughes (1991: 134) says:

a. Micro skill.

In micro skill, to understand what someone says, a listener has to interpret intonation pattern (e.g. *Recognize, stress, and rhythm*), recognition of function of structure (interrogative as request, imperatives e.g. *sit down!*, cohesive devices, e.g. *such as and which*, detect sentences constituents, e.g. *Subject, verb, object, conjunctions, prepositions*), recognize discourse markers (e.g. *well; Oh, another thing is; Now, finally*). By understanding, the speaker's intonation pattern and structure form, they can help students in understanding the speaker's ideas in bottom-up approach.

b. Macro Skill.

In macro skill, to understand what someone says, a listener has to involve with listening for specific information, obtaining direction of what is being

heard or the listener should get the general idea of the information, following instructions or directions. Therefore, it uses top-down approach.

Then, why the researcher will use both macro and micro skill because it is very important to master both of them (Brown, 2001:260). Traditionally, the students are required to concentrate on listening comprehension, which is to understand the information they hear. So that Danaher (1994: 2) states that the micro and macro skill of listening within foreign language learning are the most important skill for beginning students, in order to prepare them in speaking, reading and later on writing. So, the researcher chose macro and micro skill of listening in his study.

From previous statements, listening is the process of getting information and to understand the speaker's ideas. Therefore, listening comprehension skill is very urgent to understand the information effectively.

2.5. Teaching of Listening Comprehension

Listening is the ability to identify and understand what others are saying. Listening involves understanding a speaker's accent or pronunciation, his grammar, his vocabulary, and grasping his meaning (Saricoban, 1999). It shows that listening requires students' ability to recognize different vocabulary, grammar, accent or pronunciation, to understand a message so that listening is the skill to identify and understand what others are saying.

Besides that, Harmer (1991:22) states that the students need to hear the language used, so that they can both imitate the pronunciation and also subconsciously acquire some of its sound and pattern. In other words, the purpose of teaching listening is making the students to be able to understand and recognize words that heard.

Moreover, Rost (1991) states that there are some components that makes up the level of the stage of developing listening skills as follows:

1. Recalling important words and ideas.

The students will keep the words in their memory through comprehension and will use its words when it is needed.

2. Using background knowledge (what we already know about the content and the form) and content (what has already been said) to predict and then to confirm meaning.

3. Connecting linguistics cues to paralinguistic cues (intonation and stress) and to nonlinguistic cues (gestures and relevant objects in the situation) in order to construct meaning.

4. Identifying 'pragmatic unit'.

The foreign language will try to guess the meaning of vocabulary from speaker expressions and utterances.

5. Identifying grammatical grouping words.

The foreign language learners recognize the pattern of the sentence according to the words that they already heard.

6. Recognizing words.

The foreign language learners decide words which reference by the speaker.

7. Discriminating between sounds.

The foreign language learners only hear the meaningless noises and start to differentiate the words which have similar sounds.

Brown (2001: 258-260) summarizes some of the listening teaching technique principles as elaborated in the following. First, in an interactive, four skills curriculum, teachers should not overlook the importance of techniques that specifically develop listening comprehension competence. The second principle is that teachers should use techniques that are intrinsically motivating. In order to appeal to the students' personal interest and goals, teachers should take into full account the experiences, goals and abilities of the students in designing lessons. The next principle is utilizing authentic language and context to enable students to see the relevance of classroom activity to their longterm communicative goals. The fourth is carefully considering the form of listeners' responses to see whether or not their comprehension has been correct. Another principle is encouraging the development of listening strategies because most foreign language students are simply not aware of how to listen. The last principle in designing listening technique is that teachers should include both bottom up and top down listening techniques, because both of them can offer keys to determining the meaning of spoken discourse.

There were several abilities that should be mastered well such as how to differentiate certain sounds, to know well on various words and how to group a number of words in the sentences. Students should also be sensitive to paralinguistic cues and nonlinguistic cues, so they would be able to build their right guessing on the meaning to find out the key words or key sentences that the researcher wants to develop the students' skill by testing them about background knowledge about what they have already known about the content, the form, and also content of the text. It made students' listening ability become so better.

2.6. Implementation of Teaching Listening Through Jigsaw Technique

According to Aronson (2008: 1) there are ten steps considered important in the implementation of the jigsaw classroom:

1. Students are divided into a 5 or 6 person jigsaw group. It depends on size of classroom
2. One student should be appointed as the group leader. This person should initially be the most mature student in the group.
3. The day's lesson is divided into 5-6 segments (one for each member)
4. Each student is assigned one segment to learn. Each student should only have direct access to their own segment.
5. Students should be given time to listen over their segment at least twice to become familiar with it. Students do not need to memorize it.

6. Temporary experts groups should be formed in which one student from each jigsaw group joins other students assigned to the same segment. Students in this expert group should be given time to discuss the main points of their segment and rehearse the presentation they are going to make to their jigsaw group.
7. Students come back to their jigsaw group.
8. Students present his or her segment to the group. Other members are encouraged to ask question for clarification.
9. The teacher needs to float from group to group in order to observe the process. Intervene if any group is having trouble such as a member being dominating or disruptive. There will come a point that the group leader should handle this task. Teachers can whisper to the group leader as to how to intervene until the group leader can effectively do it themselves.
10. A quiz on the material should be given at the end so students realize that the sessions are not just for fun and games, but that they really count.

Then, based on Aronson (2008: 2) the following list of Jigsaw steps explains the process in more detail:

1. Teacher identifies a range of materials related to the topics addressed in the lessons. Consider the students who will be involved in this exercise,

and, if necessary, try to identify selections of varying text/script difficulty and sophistication.

2. Teacher divides students into four to six jigsaw groups, known as the home group, and appoints one student as a leader. The group size should be dependent upon the number of selections to be assigned. The teacher divides the lesson into four to six segments. Each group member receives the task of listening one of the targeted selections. Depending on the nature of the group, the teacher may allocate the specific listening to each person, or the group itself may decide who will tackle which selection.
3. Students listen the selections independently. If the materials are photocopied, encourage students to underline important information they will need to share with their group. "Sticky notes" are an option for materials that cannot be written upon. Students may also jot down notes, or follow a graphic note-taking outline provided by the teacher as a means for extracting important concepts from their passage. Students should only have access and knowledge of the text related to their specific listening or assignment.
4. All of the students in the home group are now "experts" on the assigned listening. They meet with their home group and discuss the concepts, highlights, and other information they feel is most important. This group might also create a summary of key points, a concept map, a graphic outline, which will be shared with other groups.
5. Members of the home group leave and meet with new, secondary groups. Each member of the new group has key information that no one else in the

new, secondary group has. The new groups teach each other what the home group felt to be the most important and relevant information. This is where the jigsaw starts to come together. Members from the separate groups have come together to teach each other their assigned listening. Students are encouraged to "test" one another and ask questions for further clarification.

6. The final piece to the Jigsaw activity involves a return meeting of the original group. During this time, individual group members share in turn the pertinent information they learned from participating the second groups. All the information comes together. The rest of the group is accountable for learning this new information, which will be assessed during the evaluation of this unit of study.

1.1. Picture of 8 jigsaw groups or home group

1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5

1.2. Picture of "expert" group

1	1	1	1	1	2	2	2	2	2	3	3	3	3	3
4	4	4	4	4	5	5	5	5	5					

According to Penny Ur (1984), jigsaw in listening different but connected passages, each of which supplies some part of what they need to know. Then they

come together to exchange their information and are thereby enable reconstruct a complete picture a situation or perform a task. Benneth B (1991) says that jigsaw class is:

1. Organize the class into cooperative home groups of, namely, 8 jigsaw groups from 40 students, and 5 hand out 5 different sets of information which relate to particular topic for example, structures of story, pictures story.
2. Organize the class into cooperative expert groups by teaming up students with like materials. For example, all page one student in the class together, page two, and so on. This group reads the materials and discusses the best method of sharing their acquired knowledge and understanding with their cooperative home group.
3. Organize the expert group to return to the jigsaw groups. Each student presents their understanding of their part of the topic and the home group must then demonstrate understanding of the whole topic. After that, teacher will evaluate their comprehension about the topic.

2.7. Measurement of Listening Test Achievement

To measure students' listening achievement, the researcher will use listening test as an instrument to collect the data. There are 40 items for try-out. After analyzing, the result of try-out test, the bad items will be omitted. The test consists of 40 items in multiple choices. It will be given in two times. It is called as pre-test and post-test. Pre-test is given before the treatment, and post-test will be given after the treatment. Both pre-test and post-test consist of the same item questions.

But, they will be given randomly between pre-test and post-test so that it looks different.

The scoring of listening test achievement is the total of correct students' answer is divided with the total of questions. Then, it will multiply by 10. Finally, it is the students' listening test achievement. Lastly, the score will be compared between pre-test and post-test to measure whether there is an increase or not.

2.8. Concept of Motivation

In general, Motivation means the extent to which you make choices about (a) goals of learning (b) the effort you will devote to the pursuit (Brown, 2001:72).

Motivation is an inner power reinforcing someone to do something, all inner power that determines successful learning activity (Oxford and Shearin, 1994:12).

Ellis (1991:1) states that motivation is one of the factors that influence the students' ability in learning language. The researcher can assume that success in task because of simply to the fact, someone is motivated to do it. If the students are strongly motivated, the process of learning will be more active and effective for their achievement increasingly.

Motivation is undoubtedly an important factor in foreign language learning (FLL) success (Gardner, 1985b). Motivation depends on the learner's personality and attitude. On the contrary, Gardner (1985) explains that motivation differs from orientation because the students might demonstrate a particular orientation but not be highly motivated to achieve goal. This statement has showed that extrinsic

motivation is needed to achieve the goals in learning English, for example, to get a better job or high salary so that learners have high motivation in learning English. On the other hand, integrative motivation, it is from inner so that the learners' motivation in learning English are to integrate or adapt with new environment or culture so that they need to learn English seriously. Based on the previous statements, motivation is urgent to accelerate in learning English.

From the explanation above, the researcher is strongly sure that motivation can trigger the learners in learning English easier than ones have low motivation in learning English as second or foreign language. In conclusion, it seems that motivation has the fundamental function in order to help students in learning English as a means of communication in daily activity.

2.9. Concept of Motivation in Learning English.

As we know, all of teaching – learning process need motivation, of course, the students need to be motivated in learning English. Oxford and Shearin (1994) states that motivation is extremely important for second language learning and it is crucial to understand what our students' motivation are. Firstly, we should know what the reasons are, they learn English as foreign or second language. Then, motivation is also useful to accelerate them in getting their goals in learning English.

Brown (2001:76-77) and Gardner and Lambert (1972) suggests two kinds of motivation: *integrative motivation*, referring to positive attitudes and feelings

toward the target language group, and *instrumental motivation*, referring to the potential utilitarian gains of second language, motivation in learning English is divided into two parts. The first is instrumental motivation, which refers to more functional reasons for learning a language, for example, to get a better job or a promotion, or to pass a required examination. It means there are external factors which trigger to learn English. The second is integrative motivation that identified with positive attitudes toward the target language group and the potential for integrating into that group or at least an interest in meeting and interacting with members of target language group. It means that learners will learn English for their own goal without burden from others. It has been clear that in learning English motivation consists of intrinsic and extrinsic motivation. Intrinsic motivation is a motivation as incentives, which originates within the behavior itself rather than externally as in playing musical instrument for enjoyment (Setiyadi, 1999). If the students did all the tasks which were given by the teacher enthusiastically with the characteristics are based on their needs, wants, or desires within oneself. It is called intrinsic motivation. On the other hand, learners who have extrinsic motivation in doing all English tasks. They will consider about positive or negative feedback for them. If there is a positive feedback, they will learn English seriously and vice versa.

The researcher will focus on investigating students' motivation aspects in learning of English. It has been proven by using questionnaire which has been modified to measure students' motivation aspects in learning listening. Because learning with high motivation is more influenced to learners in learning English more successfully.

2.10. Measurement of Motivation in Learning English

Motivation is a set of psychological formation. It cannot be measured and observed directly. It must be measured through a certain indicators. In other words, it must be put, organized, and classified into measurable symbols order to make sense. That is the reason, why the researcher will measure the motivation toward English by administering Likert measurement technique (Likert scale) range 10 to 30, and in 100 – 600 for low, normal, and high range category. This technique places psychological aspect that is used into all instruments in this paper like as motivation questionnaires. It is supposed to the students to read the questionnaire carefully and to answer the questionnaire honestly. Therefore, the students will ignore the result of test so that they can focus on the answer of the questionnaire honestly.

The questionnaire consists of 20 questions. It is close-ended questions. It is modified, and adopted by Setiyadi's (1999). This instrument is suitable to measure psycholinguistic aspects such as motivation and its elements in learning foreign language.

In this questionnaire, the researcher will refer to the indicator of motivation elements which is determined a part of motivation such as : students' effort, students' goal , persistence, and frequency. Gardner (1985) says that motivation involves four aspects: a) a goal, b) an effort, c) a desire to attain the goal, d) a favorable attitude toward the activity. Therefore, the researcher will use them to

create close-ended questionnaire to find out students' motivation in learning English

2.11. Concept of Narrative and Spoof Text

Why does the researcher provide narrative text in frame of theories ? Because it is important to be known by students in Senior High School. Narrative has been a part of learning evaluation. Then, students in second year at senior high school have been familiar enough with narrative text. They have also background knowledge about it so that the researcher chooses narrative as a topic for evaluation. Hopefully, it can help the students as listeners in understanding the information which are heard. Then, here are the characteristics of narrative text :

- a) Orientation : Introduction of characters, setting, and its time of story.
- b) Complication / Crisis : Problems or crises happen during the story. Some conflicts make the story become real. The problems that the main characters encounter.
- c) Resolution : A problem solving of the crisis in the story. The solution to the problems.
- d) Moral value (optional) The quality or standard behaviour that the researcher describes in the story.

SPOOF TEXT

Spoof is a text which tells factual story, happened in the past time with unpredictable and funny ending. Its social function is to entertain and share the

story. It has Generic Structure; there are orientation, events, and twist. Then, language feature of spoof are Focusing on people, animals or certain things, Using action verb; ate, ran, etc, Using adverb of time and place, and Told in chronological order. Therefore, the researcher will choose spoof text as one of the materials in doing treatments

2.12. Theoretical Assumption

In learning listening students should understand what speakers have said about setting, background speakers, or topic conversation. In relation with students' motivation, jigsaw technique can activate the students' schemata about topic and setting of listening material. It happens because jigsaw can trigger students to work in group in getting a full of information.

The teacher will teach listening skill through jigsaw technique to increase students' achievement. Teaching jigsaw technique is very suitable for Listening class. In this case, teacher can use interactive stories so that listening class can be more active and interactive, and students can increase their ability in listening English.

Based on the frame of theories above, the researcher assumes that jigsaw can be used to overcome students' difficulties in understanding listening section in their classes because they are active in listening class. It can be used to trigger students' background knowledge. Hopefully, their listening achievement will increase too.

2.13. Hypothesis

Based on assumption and the theoretical views above, the researcher states his hypothesis as following:

- There is a significance increase of students' listening achievement after being taught by jigsaw technique.

Statistical Testing

Repeated Measure T-test

The hypothesis will be statically analyzed using Repeated Measure T-test that is used to draw the conclusion at level of 0,05 ($p < 0,05$)