The use of Guthrie's theory in a combination of stimulus and response

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ABSTRACT

Eliminating punishment can lead to a lack of focus or the emergence of bad habits that can affect the teaching and learning process. The purpose of this research is 1) to find the effects of using punishment, reward, exercise, and test (fatigue method), 2) to find The Contiguous Conditioning Theory using fatigue method in one single trial learning can be a new technique in learning English. The treatment is the application of Guthrie's theory using fatigue method in one single trial learning in the English Course class. Posttest-Only control design is an experimental study that compares two groups were given different treatment. The result shows that the use of Guthrie theory of fatigue method in one single trial learning gives different results compared to the result of conventional theory. The experimental group shows better average student learning outcomes than the control group. The hypothesis is succeeded and the Guthrie theory of fatigue method in one single trial learning can be used as a new method in teaching English. Guthrie's theory is effective in building students' understanding or thinking that the final grade is important, not just a standard for passing a lesson.

I. INTRODUCTION

In taking education and learning, learning activities are actions that are taken so that later the goal of obtaining useful knowledge in the future can be achieved. Studying a foreign language is still categorized as an education that must be followed by the students and has been included in the education curriculum. An article by Maduwu (Maduwu, 2016) states that the government has introduced English as early as possible even from the initial education level in elementary schools (SD) during the 2013 curriculum. According to Hakim and Chiani's article (Hakim & Chiani, 2019), the introduction of a foreign language is a form of positive stimulation for the brain. It is said

to be positive because by introducing a foreign language, it will stimulate the brain, neurons or brain cells respond and work. In the process, brain cells that receive foreign language stimuli will associate themselves with other cells in the brain. If other cells come to work and are honed, the brain's performance will automatically get better. Learning a foreign language is good even if it is learned from an early age because learning a foreign language will provide good stimulation to the brain. The stimulation that is generated from learning a foreign language will increase brain performance automatically.

Then, what is the challenge for foreign language teachers at every level of education? The challenge is the technique that is used. Interesting techniques will of course attract students' interest in learning and will increase the achievement of these students if interest in learning arises. The result that the researcher has got from teaching English from the past until nowadays is many students get unsatisfactory grades and this can be seen from the learning outcomes of the students from semester to semester. Another result is many students of the researcher see English lessons as hard material; they cannot understand easily. Because of them, most of the students become lazy and their will to become better in the lesson was gone.

A technique that is used nowadays in the learning process is a technique where the learning outcomes are determined not through exercise and test or exam but performance. That's why students nowadays think gaining score through test is not important. They are lazy to do a test and prefer to do a task. The Contiguous Conditioning Theory created by Edwin Ray Guthrie (1886-1959) said differently about this. According to Guthrie, learning is movement caused by stimulation. the conditioned response, which is, after the response is stimulated by an external stimulus, the body itself will produce the next response and the next response will produce the next stimulus, and so on. (Sriyanti, 2011).

The punishment (stimulus) that is given during the learning process is needed to change a person's behavior (response). Exercises and tests need to be done as the new stimulus, so it creates the desired response, namely good grades. In the fatigue method, if a punishment from time to time when the student gets a bad score or gives reward when the other student gets a good result, it will become a stimulus. The students who get a bad score will study harder so the student will not get another punishment in the next test. The student who gets a good result will also study harder than before to get another reward in the next test. Single-trial Learning technique is associated with the technique because the effect is established on the first experienced instance of the

stimulus. The fatigue method of the theory is carried out in learning in a single trial on every meeting, not slowly and step-by-step.

So, the questions are, what does the effect of using punishment, reward, exercise, and test (fatigue method) on learning results? Can The Contiguous Conditioning Theory using fatigue method in one single trial learning be a new technique in learning English? The purpose of this research is to find out the effects of using punishment, reward, exercise, and test (fatigue method) in learning results and to find out that The Contiguous Conditioning Theory using fatigue method in one single trial learning can be a new technique in learning English.

This research is expected to be useful in providing an alternative way of teaching English which hopefully can be applied to any subject because it focuses on the use of stimulus and responses. The results of this research will be able to see that everything that the researcher has mentioned above (punishment, reward, exercise, test) is necessary for shaping the learners so that the given and received stimuli are responded with responses where the students will study harder to get good grades. The expected output of this research is published so that it can be seen and read by education activists who will later see this as a new alternative teaching technique to their students. Hopefully, this technique can be a solution in teaching and learning and turn studying diligently into a habit for the students.

Some previous studies had discussed the issue, but those which focused on teaching process seem to have not been further discussed. Haraway and Maples' article (Haraway & Maples, 1974). The title is Contiguous Withdrawal Conditioning: A Model for Punishment. This research used 20 male rats as the research subject. They were divided into two groups. This subject was trained using a standard Skinner box randomly. It talks about the reinforcement effects through contiguously conditioned approach responses, to the treatment of punishment. Haraway et al, (Haraway et al., 1974). The title is Contiguous Approach Conditioning: A Model for Positive Reinforcement. The research was about a stimulus presented contiguously with the onset of a positive reinforcer, food, which may serve as a conditioned elicitor of approach behavior. The subject of this research is 20 male rats that were assigned into two groups. The experimental group received their daily food supply paired with a flashlight. For the control group, the flashlight was presented uncorrelated with the daily food. Maples et al, (Maples et al., 1975). The title is Contiguous Approach Conditioning: A Model for Negative Reinforcement. This study was designed to provide an empirical basis of negative reinforcement by showing that stimuli contiguously paired with shock termination can become conditioned elicitors of approach. Haraway et al, (Haraway et al., 1984). The title is Contiguous Approach

Conditioning: A Model for Sidman Avoidance Learning. This study sought to contiguous approach the conditioning model of instrumental reinforcement effects to account for Sidman avoidance conditioning. Experimental subjects (rats) received a 15-sec. duration light which was paired, independently of the subject's behavior, with the nonoccurrence of regularly scheduled 1-ma. shocks. Controls received light and shock unpaired. All subjects were then tested in a simple T-maze for an approach to the light. The subject of this research is rats. Kishimoto et al, (Kishimoto et al., 2002). The title is Mglur1 in Cerebellar Purkinje Cells Is Required for Normal Association of Temporally Contiguous Stimuli in Classical Conditioning. This study was to study mice that had the effect of mGluR1 deficiency outside PCs can be studied without cerebellar dysfunction. The researcher used three eyeblink conditioning paradigms with different temporal specificities between conditioned stimulus (CS) and unconditioned stimulus (US). Delay conditioning, in which CS and US terminate, was impaired in mGluR1±/± mice but normal in mGluR1-rescue mice. However, both strains of mice displayed severe impairment in trace conditioning, in which a stimulus-free interval of 250 or 500 ms intervened between CS and US. Mustofa (Mustofa, 2019). The title is Teori Contiguous Conditioning Edwin Ray Guthrie Dan Penerapannya Dalam Pembelajaran Pai Di Sekolah. This research aims to describe what is Contiguous Theory and how it applies to Islamic religious education in school. This research uses a literature study as the research method. Mustofa (Mustofa, 2022). The title is Teori Contiguity Edwin Ray Guthrie (Teori Belajar Aliran Behavioristik Contiguous Conditioning Dan Penerapannya Dalam Pembelajaran Pai Di Sekolah). This research studies the application of the Contiguous Conditioning theory in teaching Islamic studies. It is said that this theory fits enough to develop students' abilities both from the cognitive, affective, and psychomotor domains.

Most of the previous studies use animals as the research subject, mice. Two studies apply this theory in teaching to develop students' abilities. One study talks about this theory in the form of a literature study. the difference between previous studies and this research is where the method is applied and the objectives that are going to achieved. This study applies this method in teaching with the aim of proving that learning and teaching with this method can make students achieve better learning outcomes compared to current teaching and learning methods which focus on performance not grades. This study uses two classes as a comparison, where one class uses this method while the other class does not use it.

The researcher sees that there is a difference in learning outcomes between the conventional teaching method with the use of the Contiguous Conditioning theory of Fatigue method in teaching. The researcher hypothesizes there is a difference in the

average student learning outcomes between the Experimental group and the Control group

What Learning is

"English is the international language of communication" (Maduwu, 2016). English is used at the official sessions of the United Nations (UN). English is also used as the standard language of international aviation. Wherever we go around the world, we are faced with the use of English the first time we set foot in an airport or port. air from the country we are going to. This proves that English is very widely used. Therefore, learning and mastering English is a necessity, if we don't want to say it is a must. Being able to use and understand English inevitably gives a lot of benefits in the future. If later our work is related and requires having the ability to speak English, it will be an added value for us if we already understand and know how to use English before and will be uncomfortable if we don't have it, English became a compulsory subject. Understanding and being able to use English is a plus point.

Learning a foreign language or a language that is not our native turns out to provide another benefit, especially for our brain development. The introduction of a foreign language is a form of positive stimulation for the brain. It is said to be positive because by introducing a foreign language as a brain stimulus, neurons or brain cells respond and work. And in the process brain cells that receive foreign language stimuli will associate themselves with other cells in the brain. If other cells come to work and are honed, the brain's performance will automatically get better (Hakim & Chiani, 2019). Snell (2005) in the article of Hakim and Chiani (Hakim & Chiani, 2019) states that the way the human brain works is largely determined by the stimuli received by the brain. It was explained that neurons are brain cells that can be stimulated by certain stimuli. In the human brain, there are 100 billion neurons, each of which is connected. This discovery tries to explain that the human brain will be able to develop optimally if given stimuli that can train the brain.

Learning is an activity that has been a scourge for students at every level of education from the past until now. Even with these learning activities, students gain new knowledge and skills which of course will be useful for them in the future. A simple definition of learning is "the acquisition of knowledge or skills through experience, study, or by being taught" (New Oxford Dictionary, 2010). According to Boyd et al., (1980) on Gusmanti's (Gusmanti, 2014) "The term learning emphasizes the person where change occurs or is expected to occur. Learning is the act or process by which changes in behavior, knowledge, skills, and attitudes are acquired." Meanwhile, according to Smith (1982) in Gusmanti's article (Gusmanti, 2014), "summarizing the challenges of defining learning in

these words: It has been suggested that the term learning defies precise definition because it is used for a variety of purposes. Learning is used to refer to:

a) the acquisition and mastery of what is already known about something,

b) expansion and clarification of the meaning of one's experience, or

c) an organized and deliberate process for testing ideas relevant to the problem. In other words, it is used to describe a product, process, or function."

Through learning, not only gaining knowledge of something or new things, learning can also provide additional skills or new skills. From learning, there will be changes in behavior and attitudes in facing problems which of course become better or acquainted. Ernest Hilgard (1996) in Gusmanti's (Gusmanti, 2014) concludes that it is very difficult to formulate a satisfactory definition of learning that includes all the activities and processes we wish to include and omit all those we wish to exclude, the difficulty does not prove shameful because it is not sourced. Controversy about facts and interpretations, not an over-definition. In learning, the learner will experience unpleasant things such as difficulty to understand, and failure to try at first, but this is not something that should be a scourge or an obstacle because these difficulties and failures are a process of formation towards a better form of learning. The result of this research will show that difficulties and failures become obstacles for students. By using the stimulus and response of Guthrie's theory in fatigue method, all these obstacles can be handled.

Contigous Conditioning Theory

According to Habibah and Sugiharti in their paper (Habibah & Sugiharti, 2019), the theory of immediacy or proximity (temporal contiguity or contiguous conditioning) was first introduced by Edwin Ray Guthrie. According to Guthrie, the immediacy of the relationship between a combination of stimulus and response will increase the likelihood of repetition of this stimulus and response pair pattern. This response will occur in the same combined situation. So, in this theory, immediacy is the key to learning rather than reinforcement. Guthrie also emphasizes that reinforcement is not so important because it only serves as a factor that prevents the organism from trying another response. What is important in this theory is the unbroken link between the stimulus and the intended response. Learning something is a stimulus that will produce a response of a will to understand the material being studied. This is the key emphasized by this theory. Based on Gusmanti's paper (Gusmanti, 2014) this theory is "a combination of stimuli that have accompanied a movement will tend to be followed by the movement on its repetition". Focusing on the expected stimuli and responses is the key for this theory to be successful, maintaining the continuity of the relationship between these stimuli and responses is

needed so that they are not interrupted and habituation is created so that the intended goal is achieved.

This theory also has suggestions that must be considered by teachers in interacting and teaching material to their students. Based on Muazzaroh's paper (Muazzaroh, 2017) associating the response stimulus appropriately is the heart of Guthrie's theory. Guthrie gave suggestions for teachers in guiding the students. The suggestions are:

a) The teacher must be able to direct the student's performance to be what when he learns something. In other words, what is the stimulus contained in the book or lesson that causes students to learn? The teacher should be able to find a way to stimulate the student to have the will to study the lessons,

b) If students take notes or simply read books, it can make them remember more information. So, in this case, the book will be a stimulus that can be used as a stimulus to memorize lessons. Taking notes and reading a lot of books will help the students understand easily the lesson, teacher should make the students realize these things,

c) In managing the class, teachers are recommended not to give orders that will directly cause students to disobey class rules. The teacher must be able to guide and give direction to his students when they study the material, the teacher must be able to provide stimulation to the students so that the students' performance in learning is in a good performance and maintaining it and of course, the initial stimulus is the teacher must make the students want to learn. Textbooks must also be able to be turned into a means of extending the stimulus from the teacher to students, the teacher must be able to make the textbook into something interesting and encourage the students so that learning performance does not decrease. This theory also tells that in giving instructions, teachers must be able to give strict instructions, instructions that show the students that the instructions are important and must be obeyed without exception.

The Single-trial Learning

In applying the theory of immediacy or contiguity (temporal contiguity or contiguous conditioning), Guthrie argues that learning must be in a certain technique, The single-trial learning because for Guthrie, learning is an activity that must have benchmarks and of course, this is necessary for habituation. Based on Habibah and Sugiharti's paper (Habibah & Sugiharti, 2019), Guthrie argues that learning does not take place slowly or gradually, but on a single-trial basis. Therefore, practice is needed to get used to a new stimulus to elicit the desired response. If this desired response occurs repeatedly, the organism will be less inclined to give another response. For example, in learning a foreign

language, every part of the correct sentence must be attempted to relate to the stimulus, so that a correct sentence will develop through practice. The single-trial learning was recommended by Guthrie. In doing this research, Guthrie's theory was applied using single-trial learning. All the materials were taught only one time then directly enter the exercises to see how far the students understand the materials. This was used in the controlled class. The materials were taught in a simple language, so the students were able to understand them in a short time. The students were given a certain time to take notes about the materials. All of the given exercises were followed by clear instructions on how to do them.

Based on Habibah and Sugiharti's Paper (Habibah & Sugiharti, 2019), Guthrie argues that learning cannot be done in a step-by-step process but in a single trial. Therefore, practice and repetition are needed to accustom a new stimulus to elicit the desired response. If this desired response occurs repeatedly, the organism will be less to respond differently. For example, in learning a foreign language, every part of the correct sentence must be sought so that related to the stimulus, so that a correct sentence will develop through practice. The single-trial learning requires setting the circumstances in such a way that the given stimuli must elicit correct responses. Therefore, errors must be eliminated by examining the stimulus carefully to elicit the correct response together with the stimulus. Errors in this case such as bad habits that exist in students that can interfere with responses must be addressed immediately so it will not make the stimuli stop and repeat everything from the beginning.

Aspects of Contiguous Conditioning Theory

In using the theory of immediacy or proximity (temporal contiguity or contiguous conditioning) based on Ghulamul's paper (Mustofa, 2019), it cannot be separated from aspects such as forgetting, punishment, encouragement, intention, and transfer training. For this reason, so that the prospective users of this theory can understand it better, Guthrie explains as follows:

First, Forgetting is caused by the emergence of alternative responses in a stimulus pattern. After the stimulus pattern produces an alternative response, the stimulus pattern will then tend to produce a new response. Learning new things will result in forgetfulness and will affect the learning that has occurred before.

Second, Punishment. The effectiveness of punishment is determined by what causes the action taken by the punished organism. Punishment works well not because of the pain experienced by the condemned individual, but because punishment changes the way the individual responds to certain stimuli. According to Asfar (Asfar, A.M. Irfan Taufan

Asfar & Halamury, 2019), "Guthrie believes that punishment plays an important role in the learning process. The punishment given at the right time will be able to change a person's behavior." Effective punishment will provide a new response, not in the form of pain but if the individual feels compelled to provide another response that changes the individual's behavior.

Third, physiological drives. Drives are what Guthrie calls Maintaining stimuli (stimuli that maintain) that keep the organism active until the goal is achieved. For someone who experiences hunger, that person will try to fulfill that hunger (maintaining stimuli).

Fourth, the conditioned response to maintaining stimuli is called intentions. This response is called intention because maintaining the stimulus from the urge usually lasts for a certain period (until the urge subsides). For someone who experiences hunger, that person will try to fulfill that hunger (maintaining stimuli). The effort will persist (intention) until the goal is achieved or until the person gives up.

The fifth is Transfer Training. Guthrie in this case is less hopeful because someone shows a response that is following stimuli if under the same conditions." If the participants want to be able to face the competition situation, usually there will be a dress rehearsal process in the competition to prepare the participants before the D Day of the competition.

In doing this research, the researcher only focused on punishment and mixed it with rewards. This combination was able to handle all the aspects above, such as:

a) By using the combination of punishment and rewards, the aspect of forgetting was able to be handled. Because the students were understanding if they want to avoid the punishment, they must be able to achieve a reward, by correctly answering questions.

b) For the psychological drives, the students must be able to maintain the stimuli all the time, they would not have punishment at the end of the class.

c) For the intention part, with the effort of the students to avoid punishment, the students did the intention part.

d) For transfer training, because the students did not want to have punishment, they pushed themselves to understand the material, if they were not able to understand the material, the students would ask questions related to the material

Three Methods to Change Behavior

The application of contiguous conditioning theory will encounter habits that occur in the field. Some habits are appropriate but some habits are not. If the habit is appropriate,

then you can continue, but when you find an inappropriate habit, then the habit needs to be broken. For this reason, it is necessary to break the relationship between associations and 'cues' (which give rise to stimuli and responses) (Mustofa, 2019). A man usually smokes after eating or while doing nothing, the man will usually smoke. This habit will occur more often when the situations that support the habit occur or remain a lot. There are three methods offered by Guthrie to change habitual behavior, namely:

Threshold Method

A method of looking for clues that trigger bad habits and responding to the cues when they arise. For example, there is a student who likes to be busy with himself at the back of the class. To stop the student's busy habit, the teacher can move his seat to the front row. Next, a man after eating he usually smokes, before smoking is done there must be something else that diverts the smoking habit, the stimulus can be increased from time to time.

Fatigue Method

The relationship between the stimulus and the bad reaction is left alone until the perpetrator feels bored. For example, there is a student who likes to take small notes to cheat. So, to stop the bad behavior a teacher can ask the student to make notes on pages and pages continuously so that he will get bored by himself. Another example is to reduce the smoking habit, the man is offered cigarettes continuously until the man experiences fatigue.

Incompatible Response Method

This method assumes that humans are organisms that always react to certain stimuli. If a reaction to a certain stimulus has become a habit, then the way to change it is by connecting the stimulus with the opposite reaction to the reaction to be eliminated. For example, a student who feels scared when asked by his teacher to come forward to work on a question on the blackboard. To get rid of the student's feelings of fear, the teacher can tell students to go forward continuously every time there is a question to be done on the blackboard. Another example, for a man who has a smoking habit. By presenting people who care so that the man stops smoking, it is hoped that there will be a stimulus of support from outsiders so that there is a response given by the man so that he stops smoking (Mustofa, 2019).

In this research, the researcher chose the fatigue method to change the bad behavior of the students. The researcher is always given punishment and reward in every meeting, so that the students who tend to avoid answering questions, would be forced to try to answer and give a correct answer so they can avoid punishment. The students will feel

fatigued in avoiding the questions and doing the punishment. They would rather try to give the correct answer, so they will have rewards for not doing any task or homework.

II. METHOD

This research is quantitative research. Based on Sugiyono (2018) in Arni et al (Arni et al., 2022), quantitative data is a research method based on concrete (positivistic) data, research data in the form of numbers that will be measured using statistics as a means of calculating the test, related to the problem under study to produce a conclusion. This research is trying to find and show the effect of using Guthrie's theory of fatigue method by doing a single-trial learning. The treatment is the application of Guthrie's theory using fatigue method in one single trial learning in the English Course class. According to Noeng (2002) in the article of Rahman (Rahman et al., 2020), research is an effort in the field of science that is used to obtain facts in principles patiently, carefully, and systematically to answer the truth. In obtaining systematic answers in research, it is necessary to have a method or technique used in processing the research, which is called a method. So the research method is a scientific way to obtain data with the purpose and usefulness of research.(Rahman et al., 2020). The method that was used in this research is the Experimental method. According to Sugiyono (2016) in Rahman's article (Rahman et al., 2020), "the experimental method can be interpreted as a research method used to find the effect of certain treatments on others under controlled conditions or in this study researchers can control all external variables that affect the course of the experiment which are selected randomly." The post-test was used as a tool to measure the development of student learning progress, as well as to evaluate learning programs. That is why the design of this research is Posttest-Only control design. Based on Campbell and Stanley (1963); Ghozali (2008) in Banding & Mayangsari's article (Banding & Mayangsari, 2017), Posttest-Only control design is an experimental study that compares two groups were given different treatment.

The population in this study was all students of the English Course Class, 411 students. There were two classes as the research sample. The two classes were taught by the researcher this semester, class A and class F.

The sampling technique that was used in this research is saturation sampling. According to Arikunto (2012) in the article of Maulana et al (Maulana et al., 2020) "If the total population is less than 100 people, then the total sample is taken as a whole, but if the population is bigger than 100 people, then 10-15% or 20-25% of the total population can be taken." The sample that was used for this research is 20% of the population, which is 82 students. The classes that the researcher taught were class A and class F. Class A was 37 students, class F was 45 students. the total of the students was 82 students.

Collecting data is the most important step in research, the goal is to get data. To complete the method used in collecting the data, data collection techniques are needed. The techniques used in this research was a test. A test is a collection of questions or exercises or exams used to measure skills, knowledge, intelligence, abilities, or talents possessed. Questions or exercises will be related to the English subject materials that they had learned this whole semester.

In doing the research, the researcher acted as the lecturer. After giving the mid-test as a pre-test, the researcher chose Class F as the experiment group because their mid-test score was lower than class A. Class A is the control group. Experiment group is group 1, control group is group 2. The treatments that were given by the researcher after the pre-test was done are:

a) In the experiment group, the material was only taught in one-single trial, while in the control group, the material was taught more than once.

b) After giving the materials, in the experiment group, the researcher was directly giving an exercise in the form of a game. In control group was done in the same way. The difference is, in the experiment group, the person or group who could not answer correctly and got the lowest score, automatically got a punishment in the form of homework, while others who could answer correctly and one of the biggest scores, got a reward of not doing homework or get an additional score for the quiz. In the control class, the treatment of punishment and reward were not used at all.

In analyzing the data, the researcher used some techniques. They are:

Normality Test of Research Data

The normality test of the data is used to find out what types of statistics are used by researchers for further data processing. This is done to find out whether the data from the two sample classes are in a normally distributed population or not.

Independent sample t-test

The independent sample t-test is a parametric test used to determine whether there is a mean difference between two independent groups or two unpaired groups with the intention that the two data groups come from different subjects. It is also a statistical analysis that aims to compare two unpaired samples (post-test) to test the success of a hypothesis.

$$t_{hitung} = \frac{X1 - X2}{\sqrt{\frac{(n1-1)s_{12} + (n2-1)s_{12}}{n1+n2-2}\left(\frac{1}{n1} + \frac{1}{n2}\right)}}$$

$X1$: mean value of the first sample group

$X2$: mean value of the second sample group

$n1$: First sample group size

$n2$: Second sample group size

$S1$: The standard deviation of the first sample group

$S2$: The standard deviation of the second sample group

III. RESULTS AND DISCUSSION

The initial action that was taken before starting to analyze the data is the normality test. The normality test is a part of the data analysis requirements test or the classical assumption test. This means that before starting the hypothesis test and statistical analysis of the existing data, the existing data must be tested for normal distribution. So that we can find out whether the existing data is normally distributed or not. If the significance value (Sig.) is bigger than 0.05, the research data is normally distributed. On the contrary, if the significance value (Sig.) is less than 0.05, the research data is not normally distributed. In parametric statistical analysis, data that is normally distributed means that the data can be calculated and hypothesized because it is considered feasible to be analyzed. This is an absolute requirement that must be met.

Table 1. Tests of normality

	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Post	Experiment	.128	45	.063	.939	45	.020
	Control	.125	37	.150	.933	37	.029

a. Lilliefors Significance Correction

Based on the output table, it is known that the value of df (degrees of freedom) for the Experimental group is 45 students, and for the Control group is 37 students. This means the amount of data from the 2 groups is more than 50 students, so the normality decision was made based on the results in the Kolmogorov-Smirnov table. Then from the output, it is known that the value of Sig. for group A is 0.063 and the value of Sig. for group B is 0.150. Because the value of Sig. for both groups is greater than 0.05. Then, based on decision-making in the Kolmogorov-Smirnov normality test above, it can be concluded

that the student learning outcomes for the Experiment class and Control class are normally distributed.

The homogeneity test aims to determine whether a variant (diversity) of data from two or more groups is homogeneous (same) or heterogeneous (not the same). The homogeneity test is generally used as a requirement in average difference tests such as the Anova test, the Mann-Whitney test, and the Independent Sample T-test. However, homogeneity is not an absolute requirement in the independent sample T-test, because if the variance between these groups is homogeneous then it will be able to produce accurate measurements in the difference test.

Table 2. Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
POST TEST	Based on Mean	2.162	1	80	.145
	Based on Median	1.712	1	80	.195
	Based on the Median and with adjusted df	1.712	1	79.953	.195
	Based on trimmed mean	2.205	1	80	.142

Decision-making guidelines in the Homogeneity test if the Based Mean significance value (Sig) is bigger than 0.05 then the variance of the data is HOMOGENEOUS. Meanwhile, if the Based Mean significance value (Sig) is less than 0.05, the variance of the data is INHOMOGENEOUS.

Based on the output above, it is known that the significance value (Sig) Based on the Mean is 0.145, which is greater than 0.05. Thus, it can be concluded that the variances of the post-test experimental class and the control class post-test are the same or HOMOGENEOUS. Therefore, one of the requirements (not absolute) of the independent sample t-test has been fulfilled.

The independent sample t-test is part of parametric inferential statistics (test of difference or comparison). In parametric statistics, some conditions must be met before testing the hypothesis (in this case testing the hypothesis using the independent sample t-test). The assumptions regarding the requirements for using the independent sample t-test are:

1. The two samples are not paired with each other.

2. The data that is used in this test is in the form of quantitative data (original numbers) on an interval or ratio scale.

3. The data for both samples are normally distributed.

4. There is the same variance or HOMOGENEOUS for the two research data samples. If it turns out that the data variances for the two samples are INHOMOGENEOUS, then the independent sample t-test can still be carried out, however, the decision is based on the results obtained in the SPSS output "Equal Variances not Assumed."

The formulation of the hypothesis for comparative research uses the independent t-test. H0 means there is no difference in the average student learning outcomes between the experimental group and the control group. Ha means there is a difference in the average student learning outcomes between the Experimental group and the Control group.

Before starting to interpret the output results, it is a must to know first the basis for making decisions in the independent sample t-test, namely if the value of Sig. (2-tailed) is more than 0.05, then H0 is accepted and Ha is rejected. This means there is no difference in the average student learning outcomes between the experimental group and the control group. If the value of Sig. (2-tailed) is less than 0.05, then H0 is rejected and Ha is accepted. That is, there is an average difference in student learning outcomes between the experimental group and the control group.

Table 3. Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Post	Experiment	45	58.16	25.015	3.729
	Control	37	42.91	28.619	4.705

Based on the Group Statistics table above, it is known that the amount of learning outcome data for the Experimental group was 45 students, while for the Control group, there were 37 students. The average value of student learning outcomes or the Mean for the Experimental group is 58.16, while the average value of student learning outcomes or the Mean for the Control group is 42.91. Statistically, it can be concluded that there is a difference in the average student learning outcomes between the experimental group and the control group. To prove whether the difference is significant (real) or not, we need to interpret the "Independent Sample Test" output.

Table 4. Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Post	Equal variances assumed	2.162	.145	2.574	80	.012	15.250	5.925	3.460	27.041
	Equal variances not assumed			2.540	72.143	.013	15.250	6.004	3.283	27.218

Based on the output above, it is known that the value of Sig. Levene's Test for Equality of Variances is 0.145, where the value is bigger than 0.05. So, it can be interpreted that the variance of the data between the Experimental group and the Control group is HOMOGENEOUS or the same. So, the interpretation of the Independent Samples Test output table above is guided by the values contained in the "Equal Variances Assumed" table.

Based on the "Independent Samples Test" output table in the "Equal Variances Assumed" section, it is known that the value of Sig. (2-tailed) is 0.012 which is smaller than 0.05, then as a basis for decision-making in the independent sample t-test, it can be concluded that H0 is rejected and Ha is accepted. Thus, there is a significant (significant) difference between the average student learning outcomes in the Experimental group and the Control group.

Furthermore, from the output table above, it is known that the value of the "Mean Difference" is 15,250. This value indicates the difference between the average student learning outcomes in the Experimental group and the average student learning outcomes in the Control group or 58.16-42.91 = 15.250 and the interval of the difference is 3.460-27.041 (95% Confidence Interval of The Difference Lower Upper).

The decision-making based on the comparison of the calculated t count with the t table in the independent sample t-test can be guided by the following basic decisions:

1. If the value of t count is smaller than t table then H0 is accepted and Ha is rejected, which means the difference in the average student learning outcomes between the Experiment group and the Control group.

2. If the calculated t count is bigger than t table then H0 is rejected and Ha is accepted, which means that there is a difference in the average student learning outcomes between the experimental group and the control group.

It is known that the calculated t count is 2,574. next, in finding the value of t table concerning the formula (α/2); (df) equals (0.05/2); (80) is equal to 0.025; 80. In the distribution of t table statistical values, the t table value is 1.1993

Thus, the calculated t count of 2,574 is bigger than 1,993. So, based on decision-making through a comparison of the calculated t count with t table, it can be concluded that H0 is rejected and Ha is accepted. This means that there is a difference in the average student learning outcomes between the experimental group and the control group. In other words, the usage of Guthrie's theory of fatigue method in one single trial learning with the conventional learning method produces different learning outcomes. So that it can be determined that the hypothesis of the use of the One-Single Trial learning method by Guthrie's theory gives better results and gives a better value impact.

The result of this shows that the use of Guthrie theory of fatigue method in one single trial learning gives different results compared to the result of conventional theory. The statistics result, shows that the average student learning outcomes between the experimental group and control group are different. The experimental group shows better average student learning outcomes than the control group, from this result, it can be concluded that the hypothesis is succeeded and the Guthrie theory of fatigue method in one single trial learning can be used as a new method in teaching English even any subjects if the stimulus and the respond are used in the right time.

IV. CONCLUSION

The application of Guthrie's theory of fatigue method has proven successful. Its application to the One Single Trial learning method shows as a better learning method than the conventional learning methods that currently exist. And, with the results obtained, it can be stated that the Guthrie theory of fatigue method in one single trial learning is considered appropriate to be used as a better choice of learning method compared to conventional learning methods. The use of punishment and rewards gives

a better stimulus to the students in learning the lessons. The response of the stimulus shows the experiment group has a better average point compared to the control group.

The result of this research illustrates that punishment and reward from Guthrie's theory in teaching are needed to encourage students to obtain good learning outcomes. Guthrie's theory is effective in building students' understanding or thinking that the final grade is important, not just a standard for passing a lesson. For further research related to English teaching methods, the application of Guthrie's theory of punishment and reward can be applied in teaching speaking because English course class only studies English grammar in general while the speaking class studies how to apply that grammar in a form of speaking. This could be another interesting factor for further research to be carried out using the Guthrie method.

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