

## THE EFFECT OF USING CAKE APPLICATION TOWARDS STUDENTS' GRAMMAR MASTERY

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### ABSTRACT

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This research aims to find out whether or not using Cake Application is effective towards students' grammar mastery. This research will collect data from students in class X MIA-2 and MIA-5 at SMA Methodist-2 Medan in the 2022/2023 academic year, which will be used as the research subject. The cake application was used to improve students' speaking ability in accurate pronunciation. The results of statistical calculations and data analysis demonstrated that the students have a significant effect of Cake Application on their grammar abilities in the experimental and control classes. Therefore, it can be concluded that the Cake Application has a strong effect on increasing students' listening comprehension and reading comprehension. In order to increase student learning activities and support students, this research intends to assist teachers in implementing learning utilizing learning applications as an alternative learning model.

**Key words:** *cake application, grammar, mastery*

### INTRODUCTION

#### a. Background of Studies

The emergence of various learning media is currently very helpful teaching and learning, such as online mass media, E-Learning, and online tutoring which are learning resources, so that students do not only receive information or lessons from their teachers. The development of digital technology is also able to bring up new learning models. In the past, learning was only with conventional models, face-to-face with teachers or lectures only, but now teachers are able to create new learning models, for example by making simple videos that make it easier for students to understand the subject matter.

English major students must master four skills: reading, listening, speaking, and writing. In order to support language abilities, grammar is also taught. However, in fact, it is frequently observed that many students still struggle to use the correct grammar or tenses when speaking or writing. This occurs as a result of their ignorance of how language is used in normal conversation. Learning grammar is the first step in acquiring English. People need to comprehend English

grammar or structure before they can begin speaking it.

Learning Outcomes for primary and secondary education consist of 6 phases, namely phases A to F, which cover all subjects lessons at the elementary and secondary education levels. Meanwhile, grade X is in phase E, where learning English focuses on strengthening spoken and written language with a CEFR B1 target. Various types of texts such as narrative, description, procedure, exposition, recount, report and authentic text are the main references in learning English in this phase. Students read written texts to learn something/get information. Implicit inference skills when understanding information, in English begin to develop. Students produce more diverse written and visual texts, with an awareness of the goals and target audience. But in order to achieve this goal, students need to master the foundation of learning English, which is grammar.

Teaching English as a Foreign Language (TEFL) is about passing on the knowledge of the language in nations where it is not the native tongue. English as a Foreign Language is typically taught in state-run schools and is

included in the educational curriculum of most countries. English is a required subject in senior and junior high schools in Indonesia. English is not necessary at the lower levels, such as in primary schools and kindergarten; students may be taught it as a local content subject. Local content subjects are additional subjects that must be included in the learning curriculum in all schools in Indonesia.

To be specific, grammar is one of important skills that students are taught to master. English grammar is the structure of the arrangement of sentences. By using the correct structure, a sentence will be perfect. This structure is also used in all languages, not just in English. According to Nelson (2001: p.1), "grammar is the study of how words form sentences." That means, in understanding grammar, there is a process of how language is combined and manipulated, from just fragments of words to form a more detailed and longer whole. In conclusion, grammar is one of the elements of language, grammar is a structure of language that must be mastered. Although it is difficult to learn the rules or even required to memorize, grammar is very important in learning a foreign language, constructing sentences, and expressing oneself in interactions with others.

The word (noun, adjective, verb, adverb, pronoun, determiner, conjunction, preposition), the phrase (verb phrase, noun phrase, adjective phrase, adverb phrase), the clause, the paragraph, the sentence, and the text/discourse are all examples of grammatical units in English. A word's grammatical and semantic role in a sentence is revealed by its part of speech. One word can function as multiple parts of speech when employed in various circumstances. To find the right definition of a word when using a dictionary, it is crucial to comprehend the different parts of speech.

Furthermore, Anyone who wishes to study grammar effectively must first understand grammar. It will be simple to master English in all aspects if study English grammar. By comprehending and employing proper grammar, learners can both understand the meaning of sentences or words and be able to effectively communicate that understanding to others. This has been demonstrated experimentally, among others by Michael Long (1985), whose research found that children who study grammar will be

more skilled in using English than students who learn the language organically without grammar.

The ability to write better won't necessarily improve only by studying grammar. The learner should, however, have more influence over how to organize words into phrases and sentences into paragraphs as a result of developing a better understanding of how language functions. In summary, learning grammar could make a better writer.

Students may build phrases more concisely and clearly by using grammar. From a communication perspective, grammar serves to facilitate conversation when two people are involved. It is simpler for the other party to comprehend and to compare their understanding of a message when sentences are arranged in a way that has been grammatical structure-regulated.

Cake is a popular learning application developed by Playlist Corporation, South Korea in 2018. With the use of real-world terms chosen by language specialists, Cake is a language learning app that aids users in developing their English language skills. Aside from that, Cake is a totally free English language learning software.

According to Paramita et al (2022) in his study claims that compared to traditional techniques, using cake can enhance student learning achievements. The users of this program can access a variety of functions at any time and from any location. This application is quite useful and will be the ideal tool for English language learners. However, whether or not all of these benefits will be able to enhance student learning outcomes such that students can be said to be successful in accomplishing learning goals or acquiring learning mastery is still up for debate. "Cake" looks a lot like a tiny English classroom. Cake is a Global English Learning app with millions of users worldwide. The app helps learners study real-life English in a more enjoyable way, without any pressure, stress, or sense of obligation. This application has many features. We can learn new phrases and vocabulary, grammar, and also pronunciation. This application also provides several different levels of English proficiency that users can choose according to their level of English proficiency. So that we can learn according to the stages of our English ability.

The benefit of using the Cake application towards grammar mastery is the built-in speech recognition feature from the Cake application. The built-in speech recognition feature allows users to assess their pronunciation while they record their voice and delivers quick feedback. Users who want to improve their grammar can benefit greatly from the built-in speech recognition tool, which offers evaluation and quick feedback. They will immediately be aware of their grammatical errors.

### b. Formulation of the Problem

Based on the background above, this research is formulated in the following question: Is using Cake application effective towards students' grammar mastery?

Based on a survey of the literature and a theoretical framework, the following is the researcher's hypothesis for this study:

1. Research Hypothesis: The Cake Application is effective towards students' grammar mastery.
2. H<sub>0</sub> (null hypothesis): The mean score of all students using Cake application will equal the mean score of all students using conventional learning method.
3. H<sub>1</sub> (alternative hypothesis): The Cake Application is ineffective towards students' grammar mastery.

### C. Research Method

Non-randomized control group pretest posttest is also known as non-equivalent control group design and is considered as the most widely used design in quasi experimental techniques. This design is similar to the pretest-posttest in the true experiment but does not have random sample selection in it. Non-randomized groups or non-equivalent groups have the same meaning, namely no randomization to form experimental groups and control groups. Therefore, this research design is also included in the type of quasi-experimental research.

However, since the experimental and control groups take the identical pretest and posttest, and the study lasts the same amount of time, it would be advised to use the same teacher or person for both English sessions to minimize this design threat (Donald Ary, 2011). Since the interview with an English teacher in Methodist-2 resulted that there are two classes she teaches

that have problem in their grammar, that is why this design is suitable for this experiment.

**Table 3.1 Non-Randomized Control Group Pretest-Posttest Design**

Group	Pretest	Treatment	Posttest
Experimental Group	Y <sub>1</sub>	X	Y <sub>2</sub>
Control Group	Y <sub>3</sub>	-	Y <sub>4</sub>

Notes: Y<sub>1</sub> = Experimental group pretest  
Y<sub>2</sub> = Experimental group posttest  
Y<sub>3</sub> = Control group pretest  
Y<sub>4</sub> = Control group posttest  
X = Cake Application

A sort of quasi-experiment known as the non-randomized control group pretest, posttest design involve in comparing two groups, namely the experimental group and the control group. The experimental group will get a treatment (X) in the form of using Cake application, while the control group will not get a treatment. In the control group, conventional learning or learning is usually done in that class. Both classes were given pretest (Y<sub>1</sub>) and posttest (Y<sub>2</sub>) with the same test questions, namely multiple-choice, where the pretest was given before receiving treatment and the posttest was given after receiving treatment.

This research was conducted at Methodist-2 High School, Jalan M.H. Thamrin Number 58, Medan, North Sumatra in the even semester of the 2024/2025 school year, in June 2025.

The population is the total number of research objects. In other words, the population can be defined as the total number of units or individuals whose characteristics are to be studied. Sugiyono (2016) argues that the population is a generalized area consisting of objects/subjects that have certain quantities and characteristics set by researchers to study and then draw conclusions. So that in conducting research, a researcher needs to determine the characteristics of the research object so that it meets the expected criteria. Then, the population is all subjects who are generally in research.

This study has sample characteristics that are in accordance with the objectives of the study, namely to find out whether the Cake application is effective or not towards students' grammar mastery. The research samples were selected from two classes of students in class X at SMA Methodist-2 Medan. Based on the population, their knowledge, and the research's objective, the samples were chosen. Class X

MIA-2 and X MIA-5, each with 38 students, were chosen as the experimental and control groups, respectively, after the sample was chosen. The number of samples in this study are 76 students.

**Table 3.3 Data of X MIA-2 and X MIA-5 of SMA Methodist-2 Medan**

Num	Class	Number of Students
1	X MIA-2	38
2	X MIA-5	38
	<b>Total</b>	<b>76</b>

Data collection techniques in this study are:

#### 1. Observation

According to Sugiyono (2016) Observation is the basis of all knowledge, through observation researchers learn about behavior, and the meaning of this behavior. This method is used to directly observe events or phenomena that are the focus of research. Sugiyono (2019) distinguishes observation into two:

##### 1) Participant Observation

The researcher is involved with the daily activities of the person being observed or being used as a source of research data. While making observations, researchers participate in doing what the data source is doing, and share in the grief.

##### 2) Non-participant Observations

Nonparticipant observation is a researcher who is not involved and only as an independent observer, nonparticipant observation is divided into two, namely:

##### a) Structured Observation

Observations that have been systematically designed, about what will be observed, when and where. Structured observation is carried out when the researcher knows exactly what variable is being observed. In making observations, researchers use research instruments that have been tested for their validity and reliability.

##### b) Unstructured Observation

Unstructured observation is an observation that is not systematically prepared about what will be observed. This is done because researchers do not know exactly what will be observed. In making observations, researchers do not use standard instruments, but only observation signs.

In this study, the researcher used direct observation at the scene or participant

observation. This observation was carried out to find out the targeted grammar for grade X which can be found from the Methodist-2 English lesson Syllabus for grade X and to obtain the evidence that class X MIA-2 is a class that experienced difficulties in grammar mastery.

#### 2. Test Implementation

According to Arikunto (2016) a test can be defined as a tool or procedure used to find out or measure something in an atmosphere, based on predetermined methods and rules. There are four types of tests, they are: oral, objective, essay, and performance test. In this research, the researcher will use objective test to create the test questions. According to Arikunto (2016), an objective test is a test whose form of assessment is objective, meaning that anyone who corrects an objective test answer will have the same result because the answer key is clear and definite.

According to Green and Michael (1982: 58), there are four forms of objective test, namely: short-answer form, alternate-response form, multiple-choice form, and matching form. The form that the researcher will use is multiple-choice form. The multiple-choice test is considered by most test experts to be the best type of objective test for measuring a variety of educational objectives. Multiple-choice (Arikunto, 2016) is an objective test consisting of a statement or notification of an incomplete meaning. And to complete it, you must choose one answer from several possible answers that have been provided.

To create a multiple-choice test for grammar, there are various types of tests that can be used: *completion*, *sentence alternatives*, *sentence interpretation*, and *scrambled sentences*. Here the researcher chooses three types of tests in constructing test questions: *completion*, *sentence alternatives*, and *scrambled sentences*. The researcher doesn't choose *sentence interpretation* because this type is just for testing *Pronoun* skills, meanwhile the topic of this study are *Simple Present Tense*, *Verbs*, *Subjective Pronoun*, and *Possessive Pronoun*.

The multiple-choice test with 5 answer choices has 1 correct answer and 4 distractor answers. The multiple-choice test with five answer choices is usually given to senior high school students. Giving the multiple-choice test

with five answer choices because it considers that the student's knowledge is broad enough so that the choice of distractor answers on the item questions is more than the multiple-choice test for the elementary and secondary levels, with the hope that it can make students bring out their abilities.

The researcher uses one of the objective test forms, multiple-choice test questions with 5 options to measure students' grammar mastery. Each test that is tested must have a score for each question. Scores are determined by examining the tests to count the number of correct and incorrect responses and assigning numerical scores, according to Green and Michael (1982: 159).

### 3. Documentation

According to Sugiyono (2018: 476) documentation is a method used to obtain data and information in the form of books, archives, documents, written numbers and pictures in the form of reports and information that can support research. Documentation is used to collect data and then reviewed. The documentation technique begins with collecting documents, selecting documents according to research objectives, recording and explaining, interpreting and connecting with other phenomena. The documentation used in this study includes syllabus and lesson plans.

A grammar test consists of multiple-choices questions which will be delivered on *Google Form*. The number of questions for both pretest and posttest will depend on the total of valid questions. The total of valid questions will be divided equally between pretest and posttest.

In determining the research class is carried out by choosing one class that will be used as an experimental class. The class will be selected based on the researcher's objective that have been specifically determined by the researcher. The researcher chose X MIA-2 as the experimental group. After determining the control class and experimental class, the next step is to pretest both classes. Pretest aims to determine the initial ability of students before treatment.

After the pretest, the next step is to give treatment. The experimental class will be taught using the Cake application. The experimental class will be given a link from the *Play Store* to

download the Cake app. After students download the Cake application, then the researcher will lead the students on how to use and learn grammar from the Cake application. The grammar topic that the researcher wants the students learn are Simple Present Tense, Verbs, Subjective Pronoun, and Possessive Pronoun.

Researcher will let the experimental group study grammar from Cake Application. The researcher will conduct classes of grammar study with Cake application is used as a teaching aid. The classes will be conducted for 1 week in 200 minutes (5 meetings). For the control group, they will study grammar conventionally from their English teacher in the same period of time.

After treatment, the next step is to provide posttests for both classes, namely the control class and the experimental class. Posttest aims to determine whether there is an increase in student learning outcomes between the control class using the learning method from the teacher and the experimental class after being given treatment, the Cake application.

## RESEARCH FINDING AND DISCUSSION

### a. Findings

Based on content validity, the validity of the test that was used as the research instrument was tested. Following the test the test instrument, whether it really complies with the English syllabus. This test was administered to one of the classes that was not part of the research sample, X MIA 3 with a total of 31 students, on the 9th of August. After being analyzed, a total of 50 questions were obtained that were valid and a total of 10 questions that were invalid.

After conducting the validity test, then the reliability test is then carried out. Based on the results of the calculation of the reliability test on the grammar mastery test, the reliability level of the test is 0.77 values in the range ( $0.71 \leq r \leq 0.90$ ) which means that the reliability of this test is high, so it can be used as a measuring tool to measure grade X students' grammar mastery. From the calculation results it is also known that the Mt value is 32.77 and the total variance is 61.4.

The researcher administers a pretest before the treatment so that the students can assess their level of grammar mastery. The findings of the statistical calculations and data analysis demonstrated the students' grammar mastery in

the experimental and control class. For experimental class (X MIA-2), there are two students scored the highest on the pretest, which was 84. Subsequently, four students achieved the lowest pre-test result of 56. And the mean score of the experimental class is 68.84. Meanwhile for control group (X MIA-5), there is two students scored the highest on the pretest, which was 88. And five students achieved the lowest pre-test result of 60. And the mean score of the control class is 71.58.

Once the pretest and treatment for one week are completed, the researcher gives the students a posttest to determine their grammar proficiency after treatment. The following table 4.3 displays the results of the students' posttest scores. The findings of the statistical calculations and data analysis demonstrated the students' grammar mastery in the experimental and control class. For experimental class (X MIA-2), there are two students scored the highest on the pretest, which was 100. Subsequently, one student achieved the lowest pre-test result of 72. And the mean score of the experimental class is 85.68. Meanwhile for control group (X MIA-5), there are four students scored the highest on the pretest, which was 96. And three students achieved the lowest pre-test result of 72. And the mean score of the control class is 84.53.

Based on the results of calculations using the Lilliefors test ( $L_0$ ), the normality test data for grade X students' grammar mastery are:

#### 1. Pretest

X MIA-2 got 0.121992 as the largest value of  $|F(X) - S(X)|$  (Lcount). When compared with the  $L_{table}$  value at a significant level  $\alpha = 0.05$  with  $n = 38$ , namely 0.1421, it is known that the Lcount value is smaller than  $L_{table}$ , namely  $0.121992 < 0.1421$ , it can be concluded that the data is normally distributed.

X MIA-5 got 0.135968 as the largest value of  $|F(X) - S(X)|$  (Lcount). When compared with the  $L_{table}$  value at a significant level  $\alpha = 0.05$  with  $n = 38$ , namely 0.1421, it is known that the Lcount value is smaller than  $L_{table}$ , namely  $0.135968 < 0.1421$ , it can be concluded that the data is normally distributed.

#### 2. Posttest

X MIA-2 got 0.141076 as the largest value of  $|F(X) - S(X)|$  (Lcount). When compared with the  $L_{table}$  value at a significant level  $\alpha = 0.05$  with  $n = 38$ , namely 0.1421, it is known that the

Lcount value is smaller than  $L_{table}$ , namely  $0.141076 < 0.1421$ , it can be concluded that the data is normally distributed.

In conducting reliability tests, X MIA-5 got 0.116291 as the largest value of  $|F(X) - S(X)|$  (Lcount). When compared with the  $L_{table}$  value at a significant level  $\alpha = 0.05$  with  $n = 38$ , namely 0.1421, it is known that the Lcount value is smaller than  $L_{table}$ , namely  $0.116291 < 0.1421$ , it can be concluded that the data is normally distributed. the variance of X MIA-2 (experimental class) is 7.5341 and the variance of X MIA-5 (control group) is 7.2736. So the homogeneity value of both classes is 1.0358. Since the Fcount was lower than the  $F_{table}$  ( $1.0358 < 4.1213$ ), it can be said that the experimental class and control class were selected from the homogeneous population. Results that were normal and homogenous were obtained after the normality and homogeneity tests were conducted. The t test can be used to evaluate the hypothesis after the necessary normality and homogeneity tests have been performed.

The results of the hypothesis test can be determined based on the following assumptions:

- If  $t_{count} < t_{table}$ , then the Cake Application is effective towards students' grammar mastery.
- If  $t_{count} > t_{table}$ , then the Cake Application is ineffective towards students' grammar mastery

Based on the results of the t-test calculation,  $t_{count} = -5.306$  with a significance level of  $\alpha = 5\%$ , where  $df = 37$ , and  $t_{table} = 1.687$ . This means that  $H_0$  is accepted and  $H_a$  is rejected, where  $t_{count} < t_{table}$  ( $-5,306 < 1,687$ ). Thus, it can be concluded that the Cake Application is effective towards students' grammar mastery.

The normalized gain test (N-Gain) was carried out to determine the increase in students' grammar mastery after being given treatment. This increase was taken from the posttest scores from the experimental class and the control class obtained by students. Normalized gain or abbreviated as N-Gain is a comparison of the actual gain score with the maximum gain score.

Based on the calculations above, it can be seen that the mean N-Gain score of grammar mastery in the experimental class (by applying the Cake application in learning) obtained a value of 0.5404 or 54% included in the category of having less effective. Meanwhile, the mean N-

Gain score for grammar mastery in the control class (without applying the Cake application in learning) obtained a value of 0.4556 or 46%, which was included in the less effective category.

The research result shows that Cake Application can improve students' grammar mastery effectively. From these results, it can be seen that the posttest results for both classes were higher than the pre-test. In the first step, a pre-test is carried out to determine the students' grammar mastery before being given treatment, namely Cake Application. The results showed that the average value of the experimental class (X MIA-2) was 68.84 and the average value of the control class (X MIA-5) was 71.58. Even though the average value of the control class is higher than the experimental class, the normality and homogeneity tests show that the data are normal and homogeneous. Therefore, it can be concluded that the two groups, namely the experimental group, had the same abilities before being given treatment.

### Conclusion

Based on the research conducted at Methodist 2 Medan in the 2022/2023 Academic Year, the following conclusions can be drawn: Based on statistical analysis, there is a significant effect of cake application on grammar mastery of class X SMA Methodist-2 Medan in the 2022/2023 academic year. The significant effect can be seen from the results of the t-test where  $t_{count} = -5.306$  with a significance level of  $\alpha = 5\%$ , where  $df = 37$ , and  $t_{table} = 1.687$ . It can be seen that the  $t_{count}$  value is smaller than  $t_{table}$ , this means that  $H_0$  is accepted and  $H_a$  is rejected. In conclusion, the Cake Application is effective towards students' grammar mastery.

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