CHAPTER I
INTRODUCTION

1.1 Background of the Study

Language plays an important role in our daily interactions. People use it to communicate with others, to convey and share ideas, feelings, emotions, and information in oral and written forms. In any case, it can also meet the daily communication needs of human beings.

In Indonesia, the first language is Indonesian. In Indonesia, English is the second or foreign language. Since the status of English as a second language or foreign language is still a strange material for learners, this becomes a problem. Therefore, there are still many obstacles to the mastery of the language. Therefore, in English teaching, the learning process should start with the new second language grammar teaching. It easier for learners to learn English as a second or foreign language.

Grammar takes on an important aspect when learning English. Without that, it becomes meaningless to arrange some words. In other words, it is described as how words can be put together to make sense understandable or spoken or written utterances. As Thornbury (2000:1) states as follows:

"Grammar is partly the study of what forms (or structure) are possible in a language. Traditionally, grammar has been concerned almost exclusively with analysis at the level of the sentence. Thus a grammar is a description of the rules that govern how language's sentences are formed. Grammar attempts to explain why the following sentences are acceptable: We are not at home right now ─ not we   at   right   home   now   are."

Students must learn about grammar, based on the reason above, without Grammar, it is difficult for people to realize why they want to speak or write without grammar because grammar makes a series of words or utterances meaningful. In grammar, several rules can not be neglect like articles, parts of speech, sentence pattern, and tenses. If people know the principles and structures of grammar, they can understand their sentences.

Therefore, grammar takes an important aspect. From this fact, it can be concluded that the rules that govern how language phrases are formed need to be mastered by language learners in addition to mastering the four English language skills to understand grammar. As Ur (2006:4) states, "There is no doubt that knowledge implicit or explicit of grammatical rules is essential for the master of language; you cannot use a word unless you know how they put together." It should also be taught to learners of the English language so that they can understand the grammar of English.

However, teaching grammar continues to have issues. Many students consider grammar to be one of the most daunting aspects of studying a foreign language. English as a second or foreign language learner is confused by the number of ways and uses. Each day, they learn new grammar rules, but they have difficulty applying them. These problems make the learning process less active for students, causing boredom because it has been filled with a lot of formulas and rules that must be understood. Furthermore, the topic of the grammar guidelines, another obstacle most often faced by students who are learning English grammar is how to memorize and apply the rules when speaking or writing at all levels of education, from basic, secondary, and higher, particularly in the use of tenses that

have become the primary rules of grammar. In the form of spoken and written communication, the good or poor nature of the use of English represents how well a learner can use tenses.

Tenses have an important role in mastering English. By knowing and understanding the kinds, formulas, and functions of tenses, it can help students to use English well. According to Kreidler (1998:6), "Tense is a system of contrast that locates the general meaning of the proposition in the past, present, or future, from the time perspective of the speaker." Downing and Locke (2006:352) state, "Tense is the grammatical expression of the location of the events in time." In short, it can be concluded that tense is the grammatical expression of the location of the event in time, such as past, present, or future. If students already have ample information of what it tenses, when to use it, and mark the time that needs to understand and require, the issues could never have arisen. There are 16 tenses, as we know, in grammar in English. Students can easily memorize the grammar, particularly tense understanding.

Based Student's Score on Pre-Observation Among The Eleventh Grade of SMK Sw. HKBP Sidikalang, the highest score for students was 80 and the lowest was 30. The average students' score was 54.5. The researcher found that students faced problems in grammar such as a lack of motivation, student interest in learning English, and a lack of understanding of students in using tense formulas to compose sentences. Based on the problems found when learning grammar, the researcher tries to increase students' grammar skills, especially in tenses by using a more effective technique, namely the smart fingers coding technique.

In teaching grammar, several techniques have been introduced nowadays. Applying such techniques to boost the capacity of learners to comprehend and memorize the principles of tenses. The researcher plans, therefore, to apply the smart finger coding as a tool to boost the ability of students to memorize in verbal form, the rules of 16 tenses. Coding implies that a code transmitted to the memory is a change of information (Weiten Wayne, 2000:195). In this context, 16 tenses of teaching by code for the rules of tenses to make it easier for students to memorize 16 tenses and use them in constructing sentences.

The technique proposed in the 11th -grade at SMK Sw. HKBP Sidikalang. Tenses are needed for the next level, 11th-grade when considering the English subject matter. Mastering all 16 tenses along with other rules like time signal needs more time because it needs a lot of practice and automatically needs more meetings.

1.2 The Problem of The Study

To make the study easier to understand, the problems is formulated as follows: "Does Smart fingers coding technique affect students' ability in mastering tenses at the eleventh grade of SMK Sw. HKBP Sidikalang?."

1.3 The Objective of the Study

The objective of the study is aimed to find out whether the application of the smart fingers coding technique significantly affects students' ability to mastering tenses.

1.4 The Scope of the Study

In teaching grammar, several techniques or methods are considered the most effective and are often used when teaching, namely: Grammar Translation Method (GTM), Audio Lingual Method, Silent Way, and Smart Finger. The Grammar Translation Method is of teaching foreign languages derived from the classical method of teaching Greek and Latin. In grammar-translation classes, students learn grammatical rules and then apply those rules by translating sentences between the target language and the native language. Audio Lingual Method is based on the idea of Coleman Report that it was impractical to teach oral skills and that reading should become the focus. A silent way is a language-teaching approach created by Caleb Gattegno that makes extensive use of silence as a teaching method.

This research focuses on the application of the smart fingers coding technique, which is the technique of using fingers in teaching grammar to enhance the ability of students to mastering tenses, particularly verbal form at the eleventh grade of SMK Sw. HKBP Sidikalang and the impact of the process.

1.5 The Significance of the Study

The finding of the study will be expected to give contribution for:

1. Theoretical Significance

   This research is expected to be valuable information and contribution to the teaching and learning process. Smart fingers coding is one good technique in the teaching and learning process. It is expected to be worthwhile information to improve teaching grammar, especially in Tenses.

2. Practical Significances

1. Students; to increase their ability to mastering tenses that were considered difficult to learn in the subject of English. Thus, without problems, students will be able to memorize certain tenses.

2. English teachers; this study provides them with feedback or new knowledge about alternative strategies, especially in mastering tenses, in teaching grammatical rules.

3. For other researchers, it is expected that this finding can be a reference for them to conduct a similar research study about teaching grammar, especially in Tenses.

1.6 Hypothesis

The hypothesis of this study is:

Ha: There is a significant effect on students' scores in mastering tenses after applying the smart fingers coding technique in teaching grammar.

Ho: There is no significant influence on students' scores in mastering tenses after applying the smart fingers coding technique in teaching grammar.

CHAPTER II
REVIEW OF RELATED LITERATURE

The theoretical context provides a clearer definition for some of this research is applied to the use of smart finger coding instruction in teaching English grammar. Some hypotheses and some details will be provided in support of the ideas of this research to help the writer design the research. The theoretical build as follows:

2.1 Language

Language is both a rule and a function that describes the universality of people's thinking. If a person finds the form of language and understands its function, then that understanding guides him in expressing language and understanding language, meaning that is a picture of his way of thinking. Clark (1997) said that understanding the form and rules of words or language structure guides a person's way of thinking, and then guides the person on how to express and understand language.

To express or understand language, people will form a system that connects the language they hear with the meaning. Traditionally it is referred to as language grammar. To formulate a grammatical concept we have to put it appropriately both in the structure of the language and in usage communication.

2.2 Grammar

The mastery of English will not escape the rules of grammar. According to Harmer (2001:12), the grammar of the language is the description of how words

can change their forms and can be combined into sentences in the language. When a sentence is compiled according to grammatical rules, it has a good meaning. Harmer (2002:257) states that there are several definitions of grammar, first, grammar is partly the study of what forms (or structures) are possible in a language. Second, grammar is a description of the rules that govern how a language's sentences are formed. And the last, grammar is conventionally seen as the study of the syntax and morphology of the sentences. Meanwhile, the syntax is the system of rules that cover the order of the words in a sentence, and morphology is the system of rules that cover the formation of the words.

Furthermore, Ur (1996:75) argues, "Grammar is sometimes defined as the way words are put together to make correct sentences." Moreover, Purpura (2004) states that grammar is defined in terms of grammatical form and meaning, which are available to be accessed in language use. In addition, Douglas (2007: 420) says, "Grammar is the system of rules governing the conventional arrangement and relationship of words in a sentence." The rules for creating sentences are called tenses. "A set of grammatical markings which are used to relate the time of events described in a sentence to the time of the utterance itself." Richard in Tarigan (2001:21). It can be defined as the relationship between verb form and time signal. This means the tense changes the type of verb according to time in the event. Based on the time signal, the tense is divided into the present, the past, the future, and the past-future.

Since tenses are based on sentence patterns, tenses are divided into the simple tense, continuous, perfect, and perfect continuous. After that, the classification was developed into the well-known 16 tenses. As far as we know

generally, English tenses can be divided into three main tenses; past, now, and future. For example, the verb "learning" in "I am learning English in the classroom" refers to the present time, the verb "learning" in "I am learning English in the classroom" refers to the past tense, and "I will learn" in the classroom "English subjects" refers to the future. The tenses of these three sentences can be said to be different.

2.3 Teaching in English

All education has the right purpose in growth and development. Growth occurs through the learner's experience. Teaching is the ability to help students organize, direct, and maximize flow develop life experiences. As Dewey (1997: 89) said, teaching depends on the significance of education of the social order [as] how to educate the young one.

In the process of teaching and learning English, grammar is important in learning English. It will make it easier for students to learn English as a foreign language. Several things will be discussed in teaching in English as approach, strategies, method, and technique.

2.3.1 Approach

The approach is a theory of how the language is taught. The teaching approach is like the form or the way we teach or how we do it. According to Richards and Rodgers (1986) that an approach refers to the general assumptions about what language is and about how learning a language occurs. It represents

the sum of our philosophy about both the theory of language and the theory of learning. In other words, an approach to language teaching describes:

1. The nature of language

2. How knowledge of a language is acquired

3. And the conditions that promote language acquisition.

2.3.2 Strategies

According to Encyclopedia Strategy is the science or art of planning and directing large military movements and operations. According to E. Stones and S. Morris teaching strategy is a generalized plan for a lesson that includes structure, desired learner behavior in terms of goals of instruction, and an outline of planned tactics necessary to implement the strategy. For Example 1. A blackboard is a strategy to provide visual structure during a lecture or discussion. 2. Debate is a teaching strategy in which students organize planned presentations for various viewpoints.

2.3.3   Method

A method is a way of doing something and practical implementation of an approach. According to Anthony's model (1963) that an overall plan for the orderly presentation of language material, no part of which contradicts, and all of which is based upon, the selected approach. A theory is put into practice at the level of a method. It includes decisions that: The particular skills to be taught, the roles of the teacher and the learner in language teaching and learning, the appropriate procedures and techniques, the content to be taught, and the order in which   the   content   will   be   presented.

2.3.4 Technique

According to Anthony's model (1963) that the actual implementation in the language classroom. In teaching, teachers must have many techniques known in teaching to improve the ability of students. They could take the form of an exercise or just any activity that you have to do to complete a task. For instance, when using videos, teachers often use a technique called "silent viewing" which consists of playing the video without sound and asking students to figure out what the characters were saying. Meanwhile, technique refers to the basic practices that took place in the classroom which were compatible with a method and therefore with an approach. Teachers often use the finger technique when instructing students in English.

2.4 Teaching Grammar

The way of grammar teaching varies according to usage and needs the level of each student. Ur (2006:7) proposed four stages of grammar teaching: a) Presentation; b) Isolation and explanation; c) Practice; d) Test

a. Presentation

Usually, in grammar teaching, the first stage is the introduction class with text that appears grammar. The purpose is the stage is "to let the learner perceive the structure-its form and meaning-including oral and written content, and incorporate it into short-term content memory". Take a few texts and short conversations as examples, the learner can acquire the meaning and purpose of the structure within the text. It can involve their understanding and allow learners the opportunity   to   personalize   the   rules.

b. Isolation and explanation

This stage mainly focuses on grammatical items: meaning, meaning Function, and what rules govern it. The purpose of this stage is to let learners understand the various rules of these structures. In this case, provided by Michael Swan, author of teacher and student grammar of the following describes the rules. they are:

1. Truth: The rules should be true;

2. Limitation and clarity: Interpretation rules should be clear Restrict the use of a given form;

3. Simplicity: the expression of rules should be simple so that learners easy to understand;

4. Familiarity: Try to use the following concepts when explaining: The learner is familiar. Most learners Tense (present, past, future);

5. Relevance: The rules should only answer the following questions: Students need to answer (Swan in Thornbury, 2000:32).

When applying these guidelines, sometimes learners use their Mother tongue to explain, translate, summarize and understand the material of the structure. Nevertheless, the mother tongue still has a bad effect because they have few chances practice the target language, which is English.

Nowadays, there are many ways to teach grammar interpretation stage. However, learning grammar is still the biggest possible. It can be seen from the facts that many junior high school students are still confused in the learning process. They are confused by many grammatical patterns just like the tense that every aspect of skill requires.

c. Practice

At this stage, in the classroom and do homework, the purpose is to let learners masterfully organize and transfer what they have gained in the learning process from short-term to long-term memory (Ur, 2006:4). The type of exercise must be considered based on the material taught.
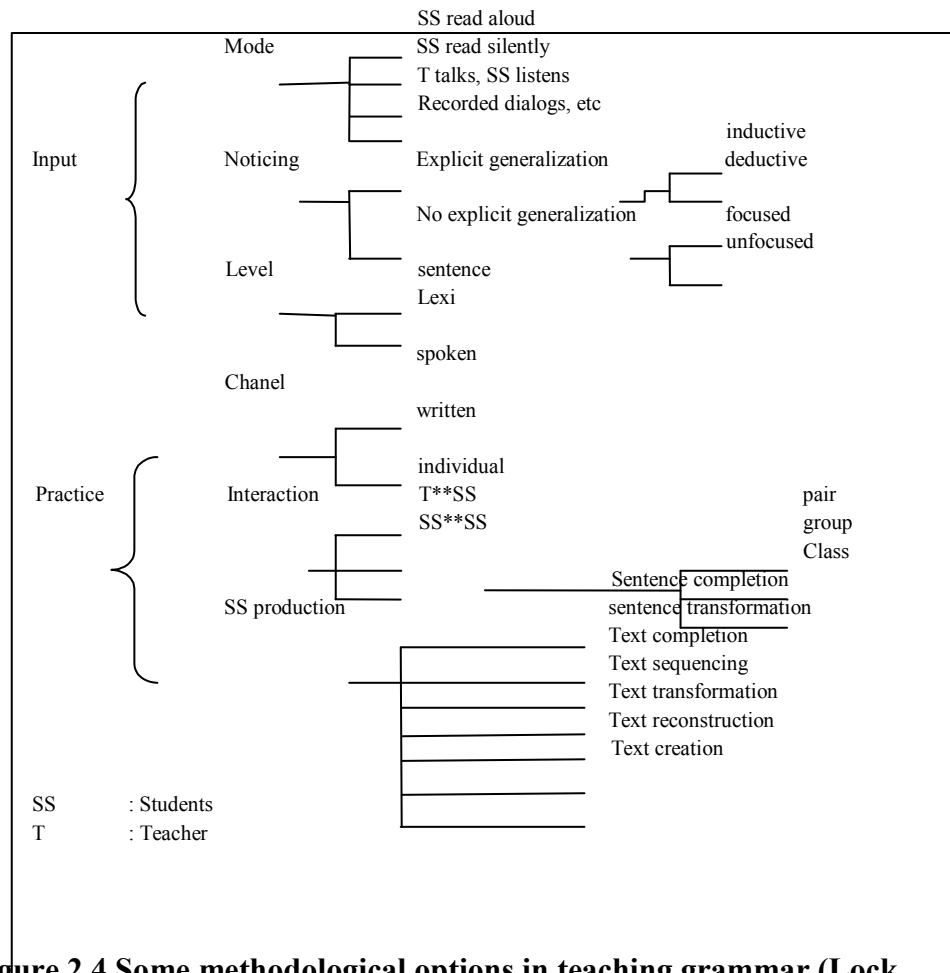
d. Test

The teacher tests the students to demonstrate and evaluate how they have a good grasp of the materials they have learned. Only at learners, this stage also aims to provide feedback and understand materials that both teachers and learners have learned and not learned. Test learners to measure their understanding of learning grammar. According to Hughes (2003:174-178), a grammar test can fill in the blanks, write, retell, complete, multiple-choice, etc. It depends on the needs of the students and their skill level.

At the same time, Lock Graham (1996:270) also understands the choice of methods in grammar teaching. He said that the grammar teaching method includes two stages, namely input, and practice. Input can be interpreted as the time for students to absorb all the knowledge and materials under the guidance of the teacher. It includes several steps are mode, attention, and level. Mode steps are used in start teaching activities.

After warming up, the learner pays attention to the steps they take to enter the mode: read aloud, silently, and listen to the teacher's lecture or recorded conversation. At these stages, the teacher will provide materials such as texts, short dialogues, and sentences. In addition, the teacher also provides grammar explanation rules in these steps. After completing these steps, the last step is level.

In this step, learners practice their knowledge by creating sentences or texts. The above steps are described in the table below.

```
                                         SS read aloud
                        Mode             SS read silently
Input                                    T talks, SS listens
                                         Recorded dialogs, etc
                                                                        inductive
                        Noticing         Explicit generalization        deductive

                                         No explicit generalization     focused
                                                                        unfocused
                        Level            sentence
                                         Lexi

                                         spoken
                        Chanel
                                         written
                                         individual
Practice                Interaction      T**SS                          pair
                                         SS**SS                         group
                                                                        Class
                                                         Sentence completion
                        SS production                    sentence transformation
                                                         Text completion
                                                         Text sequencing
                                                         Text transformation
                                                         Text reconstruction
                                                         Text creation

SS      : Students
T       : Teacher
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Figure 2.4 Some methodological options in teaching grammar (Lock Graham, 1996)

Whereas practice usually involves a lot of repetition syntactic features are combined with performance feedback. in the practice stage, there are some steps called channels, interactions, and student's produce. Under the guidance of the teacher, students practice measuring their ability to understand grammar materials in a group or individual form, orally or in writing. In the students' production

steps, students also practice in the form of tests. This test has some similarities with Penny Ur during the testing phase.

2.5 Tenses

Tense is an important element in grammar learning and is used to show temporal relationships that affect the form of verbs in English sentences. Hornby (1995:1231) describes tense as a form of a verb or a series of verb forms used to indicate the time of an action or state. Angela and Philip (2002:352) still consider it a grammatical expression of the time position of an event, and this form of expression is manifested as a form in English verbs.

In free verse, 16 tenses are inseparable when talking about English grammatical rules. Here, the tenses are just for verbal sentence, which is a word that includes subject and verb. These tenses are organized as follows:

	Present	Past	Future	Past Future
Simple	Simple Present	Simple Past	Simple Future	Simple Past Future
Continuous	Present Continuous	Past Continuous	Future Continuous	Past Future Continuous
Perfect	Present Perfect	Past Perfect	Future Perfect	Past Future Perfect
Perfect Continuous	Present Perfect Continuous	Past Perfect Continuous	Future Perfect Continuous	Past Future Perfect Continuous

Table 2.5 Names of 16 Tenses

2.6 Smart Finger Coding Technique

Smart Fingers technique is a technique that is used in teaching English tenses by using fingers. It is a new technique that will help teachers in teaching tenses, so the students can understand and master English tenses fast. The implementation of this technique is very simple because it just uses fingers. In addition, the functions

of this technique are helping the students to memorize, understand, and using 16 English tenses fast and easily. In this technique, two terms are used to point to the right and left hands.

2.6.1 Definition of Smart Fingers Coding

The Smart Fingers Coding Technique, according to Sudirman (2012) is a technique used to master the English tenses that amount to 16 tenses by using the fingers of our hands. This technique uses fingers only. This technique is a new English tense teaching technique that will help teachers or students learn and master 16 English tenses easily due to its ease of use. Meanwhile, tense is a part of grammar that some English learners avoid because it is a difficult topic. In daily, English sentences are used.

2.6.2 Focus of Smart Fingers Coding Technique

This study focuses on smart finger coding techniques to mastering Tenses with memorizing Ability. Memory plays an important role in human life because it is the key to the cognitive process of the brain based on all aspects of the intelligence it operates. According to Wang Yingxu's (2009:82) research, he said:

"memorization is a cognitive process of the brain at the meta-cognitive layer that establishes (encodes and retains) and reconstructs (retrieves and decodes) information in long-term memory."

He also said that the memory process includes coding as a knowledge representation step, retention as an information storage process in long-term memory (LTM), retrieval as a recall step in LTM, and decoding as a knowledge reconstruction step. According to the above statement, memory ability can be

defined as the ability of humans to remember what they see, hear, and learn in reality.

In terms of memory ability itself, more brain training has been made, and memory ability is also very strong. As Wang. Y (2009:82) said in his research, memory may require repetition, and the longer it takes to memorize and learn, the better the effect of memory. When applying coding techniques to teach 16 tenses, takes more time and a learning process. Make students' memory better.

The researcher used this technique to reduce student difficulties in mastering tenses. Therefore, students will learn more in a relaxed manner. This technique is the easiest way to learn tenses. Therefore, it is not as complicated as the techniques used in the learning process. In this case, students are less interested in learning tense and grammar because they are considered difficult to master it.

Hence, new techniques have been created. Many people are curious about this new way, which may be rarely found in Indonesia. In addition, this technique introduces the 16 tenses well. In education, foreign language teaching requires multiple memory methods.

Memorization is the process of doing activities to remember or learn something by memorizing. This understanding and knowledge is obtained through rote memorization. Memorization refers to a set of operations that learners use to code the target language and store it in their long-term memory for future retrieval. Wayne Weiten (2000:195) states coding is explained by a concept of three key processes: coding, storage, and retrieval. It has an analogy between these the process and elements of computer information processing.

Process Definition	Encoding Involves forming a memory code	Storage Involves maintaining encoded information in memory over time	Retrieval Involves recovering information from memory stores
An analogy to Information processing by a computer	Entering data through Keyboard	Saving data In the file on a hard disk	Calling up the file and displaying data on a monitor

Table 2.6.2 Three key processes in memory (Wayne Weiten, 2000)

The chart above, it details the coding, which is the change of information, that is, the code is transferred to the memory. For example, when people form a memory code for a word, they may sign the appearance, pronunciation, or meaning of the word. To change information into code usually requires people's attention. They don't think of things they didn't notice.

In this case, coding techniques are used to increase students' ability to memorize 16 tenses. According to Sudirman (2012), " You have mastered the knowledge, real-time. The reason is 16 English tense is a basic subject. Master the 16 tenses, you will have confidence in communicating in English. "It is correct in this case because it is very important to have a basic knowledge of tense. Use our basic understanding of the tense, it will be easier for us to compose a sentence appropriately. Therefore, we can also communicate well in English. These techniques prioritize the active role of students in listening, attention, imitation, and pronunciation, and use hands and fingers as a medium for memorizing 16 tenses. As mentioned in the memory process, to be able to remember information easily, the transmission of information should be carried out in an interesting way (Wayne   Weiten,   2000:195).

Moreover, smart finger coding techniques are not just a matter of learning tenses but more fun than usual techniques. This means that students enjoy more if use this technique to learn tenses.

2.6.3 Kinds and the Steps of Smart Fingers Coding Technique

1. Smart Finger, "Memorizing and Naming Tenses"

The first type of Smart Fingers technique is related to its name, which functions to memorize the names of 16 tenses. As explained in the previous section, there are terms used to designate the right and left hands, and each finger has its name, as follows:
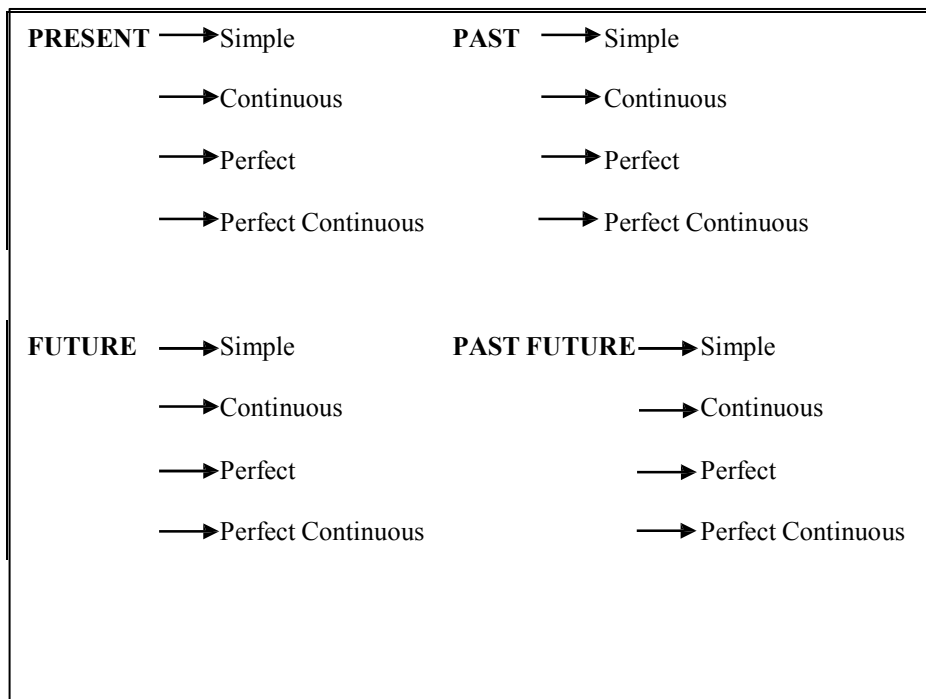
a. The right hand which is called "Center" has four parts which are used by four fingers, namely the index finger for the present, the middle finger for the past, the ring finger for the future, and the little finger for the future.

b. Each finger which is called a "finger Knuckles" has four parts which are also used by four fingers, namely the first knuckle for Simple, the second knuckle for Continuous, the third knuckle for Perfect, and the last knuckle for Perfect Continuous.

Figure 2.6.3.1 Smart Finger Coding Technique (Sudirman Ade, 2012)

Sudirman (2012) explained in his book that the picture above shows how to memorize tenses using your fingers or with smart fingers coding techniques.

The index finger for the present, the middle finger for the past, the ring finger for the present future, and the little finger for the past future. In the picture, there are knuckles, namely *S* for simple, *C* for continuous, *PF* for perfect, and *PFC* for perfect continuous. Each finger will be combined with each knuckle to get the names of the 16 tenses as in the index finger for present and will be nominated on the first finger knuckles is *C*, which is continuous. Therefore, the result of combining fingers and knuckle becomes present continuously. This applies to each finger and knuckles to get the names of the tenses. As shown in the figure, in this step, only four left and right fingers are needed hand. This technique maximizes the finger to facilitate the arrangement of 16 tense names. By combining the original tense and each knuckle, the tense name can be mentioned as follows:

PRESENT → Simple   **PAST** → Simple

→ Continuous   → Continuous

→ Perfect   → Perfect

→ Perfect Continuous   → Perfect Continuous

FUTURE → Simple   **PAST FUTURE** → Simple

→ Continuous   → Continuous

→ Perfect   → Perfect

→ Perfect Continuous   → Perfect Continuous

Figure 2.6.3.2 Combining original tenses and every knuckle (Sudirman Ade, 2012)

2. Smart Fingers "Auxiliary Verbs"

This is the second type of Smart Fingers technique. Its function is to help students or people who want to make sentences in a negative and interrogative form. Center (C) has the same terms as the second type of Smart Fingers which uses *P3CF* for the radius terms. However, the Knuckles of a finger (B) is different, in this type B has five terms for five fingers, namely the thumb for *Do / does* and *To Be 1*, the index finger for *Did To Be 2*, the middle finger for *Have / has* and *Been*, the ring finger. For *To Be* and *Being* and the last little finger for *Will / Shall* and *Be*.
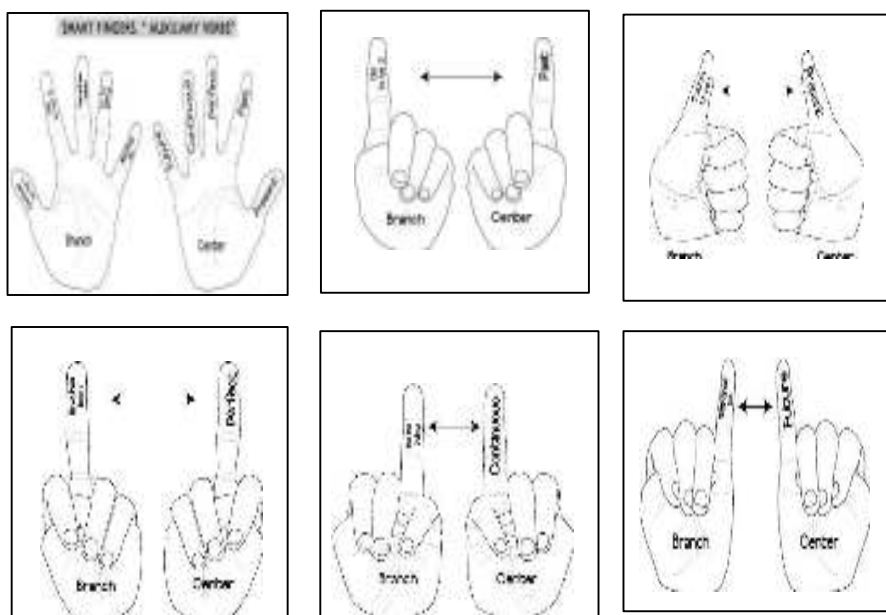

Figure 2.6.3.3 The Steps of Smart Fingers "Auxiliary" (Sudirman Ade, 2012)

PRESENT **PAST**	**Continuous**	Is/am/are Was/were	**Perfect + Continuous** Been
	Perfect	Have/has Had	**Future + Continuous** Be
	Future	Will/shall Would/should	**Future + Perfect** Have

Figure 2.6.3.4 Auxiliary (Sudirman Ade, 2012)

After explaining the coding, as shown in the table above, instruct students to arrange the 16 tense names and patterns in their way.

	PRESENT	PAST	FUTURE	PAST FUTURE
SIMPLE	Simple Present S + V1 (s/es)	Simple Past S + V2(s/es)	Future Tense S+ Will/shall +V1	Past Future S + Would/should + V1
CONTINUOUS	Present Continuous S + is/am/are + Ving	Past Continuous S + Was/were + Ving	Future Continuous S + Will/shall+ be + Ving	Past Future Continuous S + Would/should+ be + Ving
PERFECT	Present Perfect S + Have/has + V3	Past perfect S + Had + V3	Future Perfect S + will/shall + Have + V3	Past Future Perfect S + would/should + Have + V3
PERFECT CONTINUOUS	Present Perfect Continuous S+ Have/has + been + Ving	Past Perfect Continuous S + Had + been + Ving	Future Perfect Continuous S + Will/shall + Have + been + Ving	Past Future Perfect Continuous S + Would/should +Have+ been + Ving

Table 2.6.3.1 Pattern of 16 Tenses

3. Smart Fingers "Verbs vs To be"

It is used to make verbal and nominal sentences. Verbal sentences are sentences that contain a verb as a predicate. Except for the continuous, there is no "To Be" auxiliary verb in this sentence. Meanwhile, nominal sentences are sentences that contain the predicate "To Be". This type will help students know and understand the names of tenses and their formulas. The explanation is as follows:

a) The right hand which is called "Center" has five parts which are used by five fingers, namely the thumb for Verb-1, the index finger for Verb-2, the middle finger for V-3, the ring finger for V-ing, and the pinkie for V- Modal. Its central function is as a verbal sentence.

b) The left hand which is called "Branch" has five parts which are also used by five fingers, namely the thumb for *To Be 1*, the index finger for *To Be 2*, the middle finger for *Been*, the ring finger for Being, and the last little finger. finger for *Be*. The branch function is as a Nominal sentence.
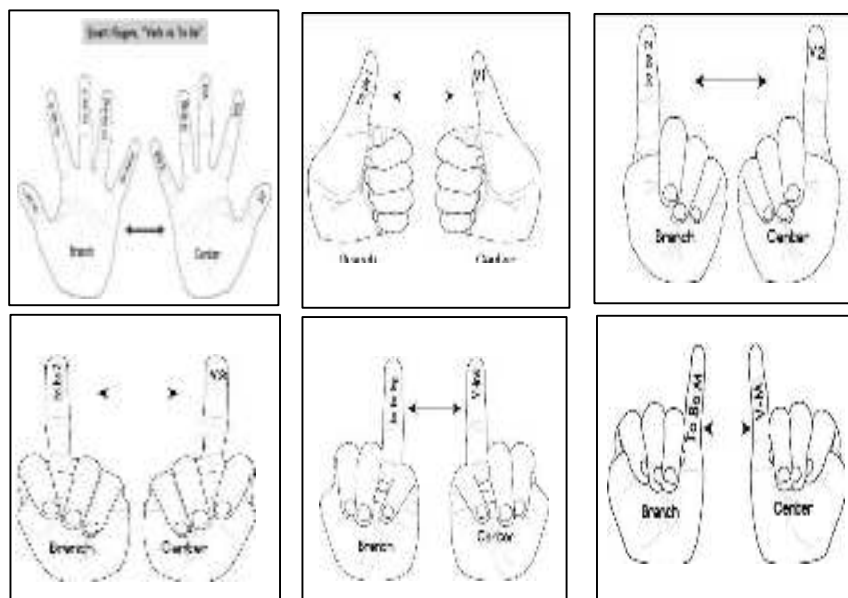

Figure 2.6.3.5 "Verb vs To Be" (Sudirman Ade, 2012)

2.6.4 The Benefit of Smart Fingers Coding Technique

Here, coding is used as a way of representing knowledge. This is the first of converting information related to human background knowledge into human memory processes in the brain. The transmission of information is explained in interesting ways, which are easy to remember and can also be connected with their background knowledge and surrounding things. Their background knowledge makes it easier for them to transform, and remember the information.

Therefore, this study uses fingers to teach 16 tenses, which is called the coding technique. This technique is used to help students easily absorb information about 16 tenses. Each finger has its function to arrange tense name and tense mode. By using fingers in the coding phase, the learner's memory ability will be increase to remember 16 tenses, because it uses what they have.

2.7 Review of the Previous Study

This section reviews several previous studies conducted by other researchers that have a similar focus to this study. The first previous study in the research journal by Hayat Eka (2011: 43), entitled "Teaching The Present Perfect Tense by using the game (find someone who)." The results of the study show that students' understanding of the current perfect tense after implementing the game teaching grammar. It can be seen from the average score got by the students on post-test 1 was 64.3, and on post-test 2 was 71.8, whereas most of the students got the average score on pre-test was 32. 4. Students" achievements of the post-test 1 and post-test 2 were highly improved. The result of this research will be used as a reference to discuss the effect of the smart fingers coding technique into students' ability in mastering tenses at the eleventh grade of SMK Sw. HKBP Sidikalang.

The second author of the previous study is Sudirman (2015: 133-141), entitled "The Implementation of Smart Fingers Technique in Improving Students' Tenses Mastery at 1st Semester Students of English Department of Mathla'ul Anwar University Banten". Sudirman uses a finger called the "smart finger technique" to complete the study of tense-specific grammar teaching. The findings of this study indicate that the application of this technique is beneficial and easy to apply. Students were able to memorize 16 tenses names without a pen in ten

minutes (86%, 96%, and 100%). Also, they could determine the names of tenses used in a sentence by one sight (75%, 84%, and 88%). Moreover, they were able to understand the functions of auxiliary verbs and the use of modality inappropriate sentence (75%, 80%, and 92%). Besides, they could differentiate between Verbal and Nominal sentences and form English tenses formulas without using an English dictionary (72%, 82%, and 90%). Similarly, coding techniques also use fingers to compose 16 tense names. The result of this research will be used as a reference to discuss the effect of the smart fingers coding technique into students' ability in mastering tenses at the eleventh grade of SMK Sw. HKBP Sidikalang.
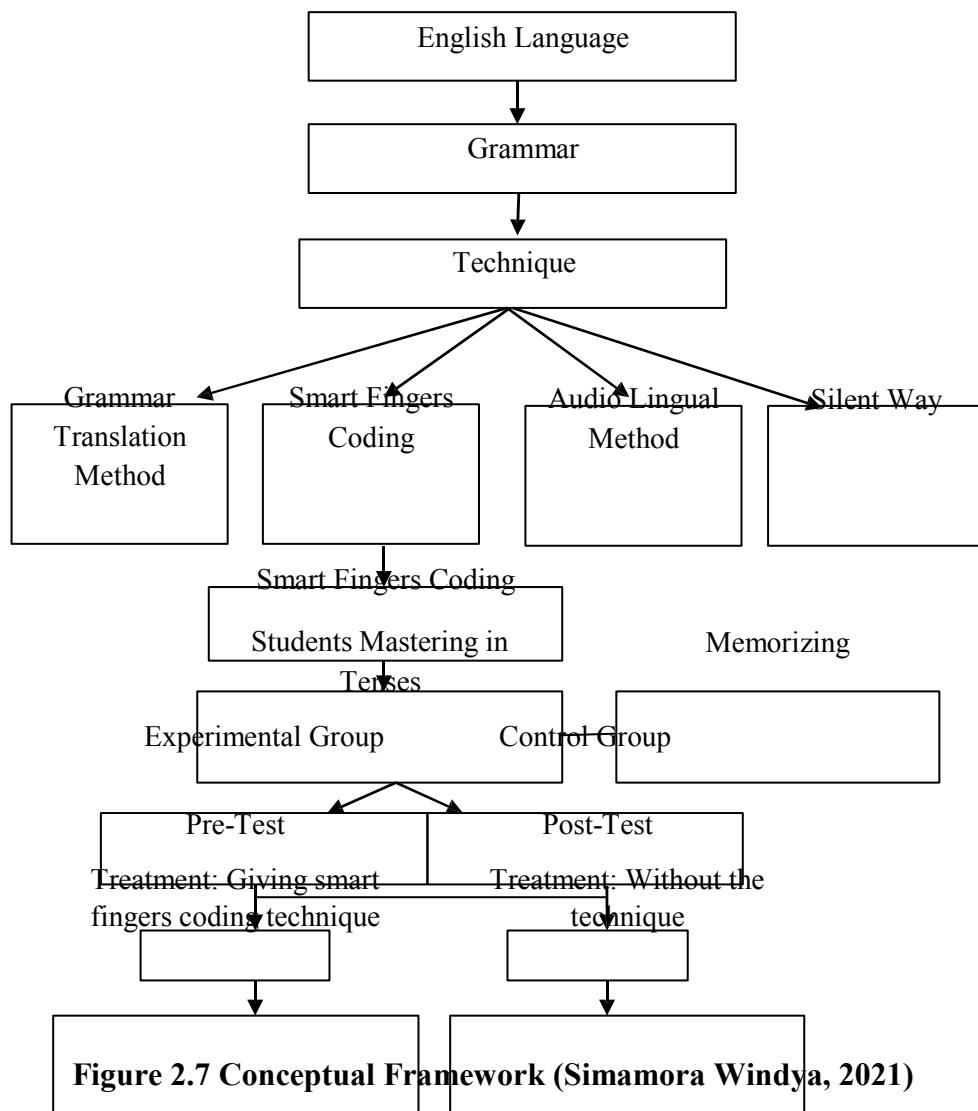
The next previous study in the research journal entitled "Numerical/Visual Elaboration of Temporal Distance in Teaching English Tense" by Zengin Bugra (2013:8). The researcher explained that the model uses both visual effects and memory aids in a novel way. On average, the control group took 41.25 points. Not even half of the questions were answered correctly even though the test was informed. The experimental group outperformed the control group statistically significantly with a mean of 66.13. Many of the students responded to more than half of the questions correctly. Use numbers as a visual model to represent the timeline, where the present and past tenses are coded with numbers, and then the grammatical forms used in the tense are coded. The result of this research will be used as a reference to discuss the effect of the smart fingers coding technique into students' ability in mastering tenses at the eleventh grade of SMK Sw. HKBP Sidikalang.

Finally, the researchers concluded that all previous studies have obvious similarities and differences with this research. However, these documents are based on this research. Based on the results of previous research, the authors will use these various studies as references to assist research that will be carried out by researchers using smart fingers coding techniques. The focus of this research uses smart finger coding in teaching grammar to increase students' ability to memorize 16 tenses (especially oral forms). Because of distinguishing this study from previous studies, the researchers pointed out that the different focus of this study is on this topic, which is the 11th grade of SMK Sw. HKBP Sidikalang, and analyze the effects of this technique.

2.8 Conceptual Framework

In this chapter, the author explains grammar where grammar is inseparable from the use of tenses. To make it easier to learn grammar and tenses, the author used the smart fingers coding technique to help students increase their ability to master the 16 tenses.

In this research, the writer used an experimental research design. Where there were 2 classes called the experimental class and the control class. Each class will be given a pre-test and post-test. The experimental class will not be given treatment, namely the smart fingers coding technique, and the control class will not be given treatment. Below is the framework of the research that will be carried out by the researcher.

```
                    ┌─────────────────────────────┐
                    │      English Language       │
                    └─────────────────────────────┘
                                  │
                                  ▼
                    ┌─────────────────────────────┐
                    │           Grammar           │
                    └─────────────────────────────┘
                                  │
                                  ▼
                    ┌─────────────────────────────┐
                    │          Technique          │
                    └─────────────────────────────┘
```

Grammar   Smart Fingers   Audio Lingual   Silent Way

Translation   Coding   Method

Method

Smart Fingers Coding

Students Mastering in   Memorizing

Tenses

Experimental Group   Control Group

Pre-Test   Post-Test

Treatment: Giving smart   Treatment: Without the

fingers coding technique   technique

Figure 2.7 Conceptual Framework (Simamora Windya, 2021)

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

The basis of a study was conducted by using an experimental design. Therefore, researchers need to determine the appropriate strategy to achieve the research goals. The most popular methods are qualitative and quantitative methods. According to Brown and Rodgers (2003: 15), It is pointed out that qualitative research methods are usually the label of non-numerical research, while quantitative research methods are numerical research or there is conversion data in research. On the other hand, according to Grotjahn's (1987: 54-81) analysis, experimental or non-experimental is the method of data collection, qualitative or quantitative is the type of data generated, and statistical or explanatory is the type of data analysis. This research analyzes how the scalability of the coding technique can memorize students' ability to mastering tenses in the form of scores, so the researchers used quantitative methods related to experimental methods. Ary Donald (2010:316) stated that "experimental research involved a study of the effect of systematic manipulation of one variable(s) on another variable".

The research design used in this study was experimental. Because the research using experimental design, when it is possible to randomly divide an individual or group into a treatment group and a control group. This study will be collected data on the ability of students to mastering tenses in the form of scores, the data tested are numbers. At the end of the treatment, both the experimental group and the control group received post-tests, and the results of the two tests

were compared to find significant differences between the experimental group and the control group. The following is the design of the real experimental study.

Group	Pre-Test	Independent Variable	Post-Test
A Class	X_1	C	X_2
B Class	X_1	-	X_2

Table 3.1 Research Design

Note:
A class : experimental group

B class : control group

X_1 : pre-test

X_2 : post-test

C : smart fingers coding technique Applying

See that the title of this study is "The Effect of Smart Fingers Coding Technique in Teaching Grammar to Increase Student's Ability in Mastering Tenses at Eleventh Grade of SMK Sw. HKBP Sidikalang." Regarding the research purpose, questions, and hypotheses, the variables are:

a. Variable X (Independent variable) is the use of smart fingers coding as a technique in teaching grammar.

b. Variable Y (Dependent variable) is a student's ability in mastering tenses.

3.2 Data and Source of Data

The data of this research was in the form of a form that contains scores of students' mastery of tenses after doing a grammar test in pre-test and post-test, both the use of smart finger coding techniques for learning grammar in class XI

students of SMK Sw. HKBP Sidikalang. Sources of data came from teachers, students, and researchers of the existence of SMK Sw. HKBP Sidikalang.

3.3 Population and Sample

3.3.1 Population

Best (2002:13) states that a population is a group of individuals, namely: person, object, or item from which samples will take for the measurement. The population of this research was the second-grade students of SMK Sw. HKBP Sidikalang in the academic year 2020/2021 that consist of 120 students into four classes.

3.3.2 Sample

A sample is a limited number of cases (Corbetta, 2003:211). The researcher will research in 2 classes which are XI -A as the experimental class and XI -B as the control class. As usually, each class consists of 25 students, but now in a pandemic situation, each class consists of 10 students. The researcher applied the smart fingers coding technique in the experimental class, while the control group only applied the method as usual in the learning process.

3.4 The Instrument of Data Collection

In this research, the researcher uses a grammar test as an instrument to obtain the data. The test is divided into pre-test and post-test. This will be done by conducting a pre-test to determine the student's ability to learn the 16 tense grammar before getting treatment. The type of test that will be used in the pre-test was an objective test. The post-test form was also a grammar transformation task. There were 20 questions given.

3.5 Technique of Collecting Data

The data collected in two classes. This has done by conducted a pre-test to determine the student's ability to learn the 16 tense grammar before getting treatment.

1. Pre-Test

After getting two classes, it was divided into two groups. One was an experimental class, to increase students' ability to memorize 16 tenses by applied smart fingers coding techniques in grammar teaching; the other is a control group, which didn't receive any processing in the memory grammar to remember the 16 tenses. The purpose of the test was to understand the students' ability to remember 16 tenses before treatment, and to made the starting conditions of the control group and the experimental group the same.

2. Applying Treatment

After pre-test in the control group and the experimental group, the treatment was maintained by using 16 tenses of the smart finger coding technique. This technique was only applicable to the experimental group, and the control group did not receive treatment at all.

3. Experimental Group

The experimental group used the smart finger coding technique for treatment in learning grammar, especially when memorizing 16 spoken sentences with similar tenses. The technical steps were described as follows: 1) The researcher was explained how to code the 16 tenses; 2) Ask students to answer some questions related to tenses; 3) Ask students to organized tenses and sentence patterns as examples of each pattern.

4. Control Group

The control group did not receive a smart finger coding technique as a treatment. Researchers explained the 16 tenses by writing the pattern of each tense on the whiteboard, so students only copy these tenses into their notes. After copying these styles, they received and took the sentence in each pattern as an example of instructions.

5. Post-Test

After gave the treatment to the experimental group and the control group, the last step was the post-test. It was delivered to each class with the same material. Applied the post-test is the same as the pre-test.

Brown (2003) stated that a test refers to a method to measure one's ability, knowledge, intelligence, or performance in a supplied area. The type of test that will be used in the pre-test is an objective test. Objective tests will be used because they are more objective, representative, and have many advantages. For example, it is more likely to significantly reduce the assessment time and analyze a single problem.

One of the objective tests here was a grammar conversion assignment. The right test might change the tense in a sentence. The test includes 50 questions with verbs, and tense names were available. Ask students to use the words provided by the tense name to complete the sentence. There was only a correct answer to a question.

Then, the researcher will provide treatment in the experimental class in teaching grammar to memorize the 16 tenses and there was no treatment in the control group. The final step to collecting the data was to conduct a post-test and

collected the scores. The post-test form was also a grammar transformation task. There were 50 questions given. The scores of the pre-test and post-test compared to determine whether the smart finger coding technique that has been applied can increase students' ability to mastering tenses.

The type of tense that must be remembered here was only verbal expression. Although the coding technique covers 16 tenses in practice, in practice it only emphasizes a few tenses, such as the simple present, simple past, simple future, present continuous, past continuous, and present perfect. Because the beginner's grammar material SMA is based on an outline.

When applied the smart finger coding technique, researchers explained the rules of the 16 tenses in different interpretation forms and how to use them in written form. The application tools of this technique have been explained in Chapter 2. As we can see, the 16 rules of tense were divided into two columns. The left column consists of simple, continuous, perfect, and perfect continuous. Whereas the right column contains about how to apply and use verbs. To memorize the names of these tenses, we can use the principle of the hand and the fingers. The researcher as a model shows how tenses work with the fingers.

3.6 Technique of Analyzing Data

The data of this study obtained from the scores of the study subjects to show whether the students' ability to mastering tenses before and after the application of the smart finger coding technique increased. From these data, the researcher divided into two categories, which were divided into a control group and an experimental group. The eleventh stage calculated the prediction and post-test scores of the control group and the experimental group.

To analyzed the data, the researchers compared the scores of the experimental group and the control group. This helped to prove statistically whether there was a difference between the scores of the students in the experimental group and the control group. When calculating the pre-test or post-test score results, the starting step was to tabulate the scores (two control experimental classes) and calculate each average score (average value) for each class.

3.6.1 Testing The Hypothesis

The researcher states a hypothesis to be tested, formulated an analysis plan, analyzed sample data according to the plan, and accepted or rejected the null hypothesis, based on the results of the analysis. To know the difference between the two groups, the writer used a t-test using the formula:

$$t = \frac{M_x - M_y}{\sqrt{[1\frac{Dx^2 + D_y^2}{N_x + N_y - 2}][\frac{1}{N_x} + \frac{1}{N_y}]}}$$

Where:

t = the effect

Mx = mean of the experimental group

My = mean of the control group

$\sum x^2$ = the deviation square of the experimental group

$\sum y^2$ = the deviation square of the control group

Nx = the sample of the experimental group

Ny = the sample of the control group

By tabulating the pre-test and post-test data of the control group and the experimental group, the effect can be seen from the difference between the average scores.

3.7 Validity and Reliability of Instrument

3.7.1 The Validity of the test

Validity is the most important consideration in developing and evaluating measuring instruments. Historically, validity is defined as the extent to which an instrument measured what was claimed to measure. Arikunto (2006:168) states the validity is a measurement that shows the levels of the instrument's validity. An instrument can be said valid if it can measure what is supposed to be measured. There are three types of validity: (1) content validity, (2) criterion-related validity, (3) construct validity. In this case, the researcher will use content validity. It refers to the degree to which the test measures. Thus, by applying content validity, the writer will know whether the test items are valid or not to behavioral objectives.

The researcher used analytical scoring to assess students' ability in mastering tenses in teaching grammar. In analytical scoring, scripts are rated on several aspects of tenses, such features as types of smart fingers, the *to-be* function, auxiliary, verb usage, and arranging the 16 tenses. To test the students' ability to mastering tenses, the researchers used the tense form of memory:

Table 3.7.1 Criteria of Mastering Tenses (Sudirman, 2012)

No.	Criteria of Mastering in memorizing	Indicator	1	2	3
1.	The types of smart fingers	1. Capable of combining right and left-hand			

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		technique			
		2. Mention tenses name which is made by combining the technique			
2.	The *to be* function	1. Memorize kind of to be 2. Differentiate the to be that will be used in present and past continuous			
3.	The auxiliary words function	1. Memorize kind of auxiliary words in the table 2. Differentiate auxiliaries words based on usage in the tenses pattern			
4.	The verb usage	1. Capable of using appropriate verb with the key word of tenses name 2. Capable of using verb in for of present or past participle			
5.	Arranging the 16 tenses	1. Afford to write examples of 16 tenses based on the pattern			

Note:

1 = Less

2 = Enough

3 = Very good