

**THE EFFECTIVENESS OF KABITARU APPLICATION
ON STUDENTS' VOCABULARY MASTERY
AT ELEVEN GRADE OF SLB B YAKUT PURWOKERTO**



AN UNDERGRADUATE THESIS

**Submitted to Faculty of Tarbiya and Teacher Training of
State Islamic University Prof.K.H Saifuddin Zuhri Purwokerto
as a Partial of Requirement for *Sarjana Pendidikan* (S.Pd.) Degree**

BY

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STATEMENT OF ORIGINALITY

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declare that the thesis I wrote with the title, "**The effectiveness kabitaru application on student's vocabulary mastery at eleven grade of SLB B Yakkut Purwokerto**" is truly my own work and is not a plagiarism of someone else's thesis. I am fully aware that I have quoted some statements and ideas from several resources. All the materials from other sources and references from work done by other people or institutions have been properly cited.

If later on my statement is not true, then I am willing to accept the applicable academic sanctions (revocation of graduation predicate and bachelor degree).

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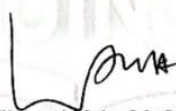
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MOTTO

"Never surrender, for God guides every step of my endeavor."



DEDICATION

I dedicate this thesis to :

My beloved parents, Alm Mr. Nurrohim and Almh Mrs. Yuli Rida Hastuti

My beloved brother and sister

All my best friends, who I can't mention one by one

My precious self, Mohammad Iqbal Riyansyah



PREFACE

Assalamu'alaikum Wr.Wb

In the name of the Most Merciful and Gracious Allah. All glory and thanks are attributed to Allah, who has given me His boundless mercy, wisdom, and fortitude, which have allowed me to finish this thesis, which is named " The effectiveness using kabitaru application on student's vocabulary mastery at eleven grade of SLB B Yakkut Purwokerto " This work would not have been feasible without His divine blessings. My heartfelt prayers, sholawat, and salutations are given to our beloved Prophet Muhammad SAW, the final messenger of Allah, who has led humanity from darkness to the light of faith and justice. His lessons have given us the way to honesty, truth, and insight. Until the end of time, may he, his family, his friends, and everyone who follows his direction always be blessed and at peace.

This thesis is presented as partial fulfillment of the requirement for obtaining the undergraduate degree of the Faculty of Tarbiya and Teacher Training of State Islamic University Professor Kiai Haji Saifuddin Zuhri Purwokerto. This study would like to express deep gratitude and appreciation for:

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13. My beloved brothers Raikhan Syafiq Abdillah and sister Layli Khatimatul Intikhanah.
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15. Lastly, I would like to express my gratitude to myself for all of my hard work, for never taking a day off, for never giving up, and for always being myself.

Purwokerto, 12 Maret 2025
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Abstract: This study examines the effectiveness of Kabitaru app in improving vocabulary acquisition among eleventh grade students at SLB B Yakut Purwokerto. Students with hearing loss often face challenges in acquiring English vocabulary due to limited exposure and lack of interactive learning tools. This study utilized a quantitative approach with a pre-experimental design, using a one-group pretest-posttest method. The participants consisted of seven students who were assessed before and after using the Kabitaru app. Data analysis was conducted using paired sample test and N-Gain score calculation. The results showed a significant increase in students' vocabulary mastery, with an N-Gain value of 0.6263, classified as a moderate to high level of improvement. The paired sample test results (Asymp. Sig. = 0.042) confirmed the statistically significant difference between the pretest and posttest scores. These findings suggest that Kabitaru is an effective tool for improving vocabulary acquisition among students with hearing loss. This study suggests integrating technology-based learning applications in special education to foster a more engaging and accessible learning environment.

Keyword: Special Education, Technology based-learning Vocabulary Mastery.

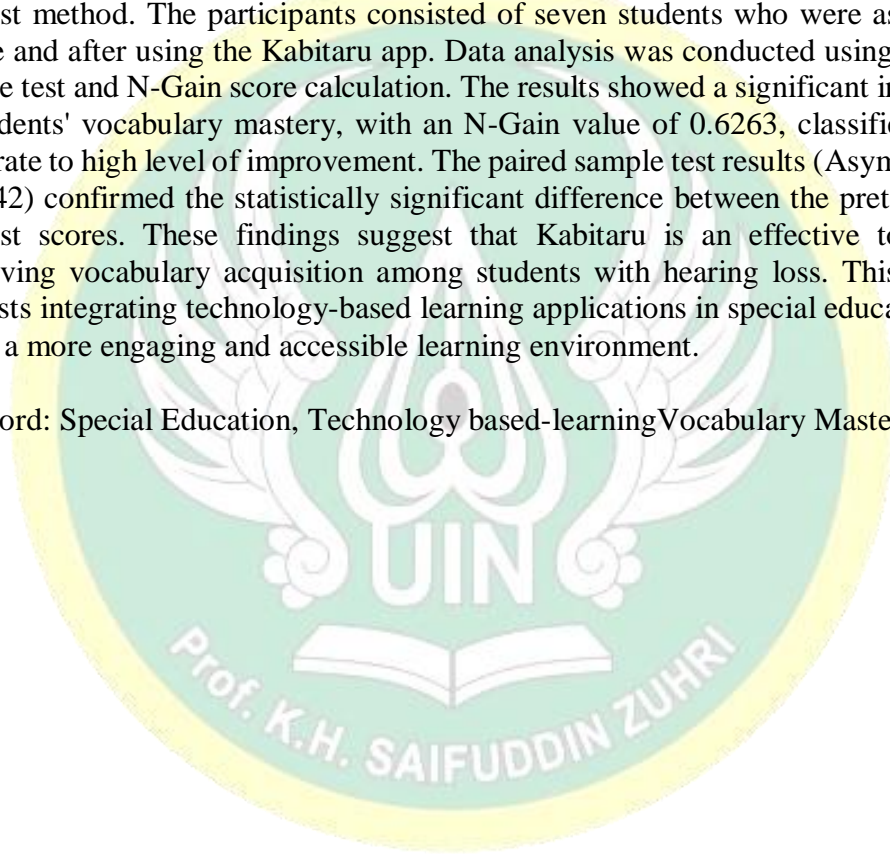


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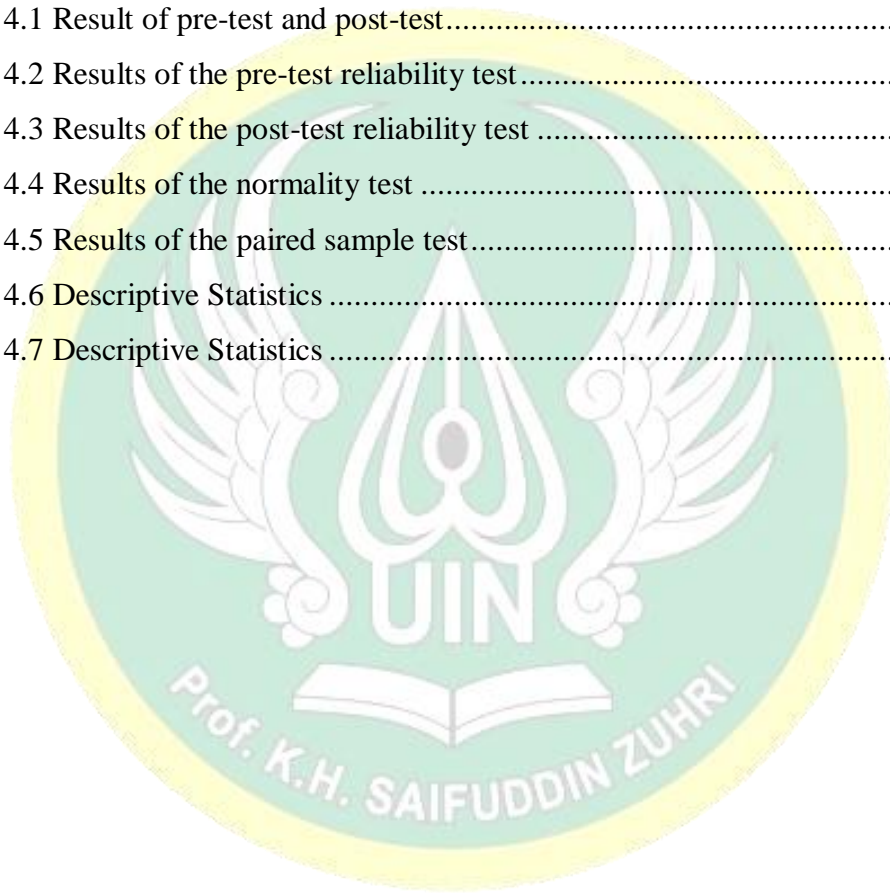
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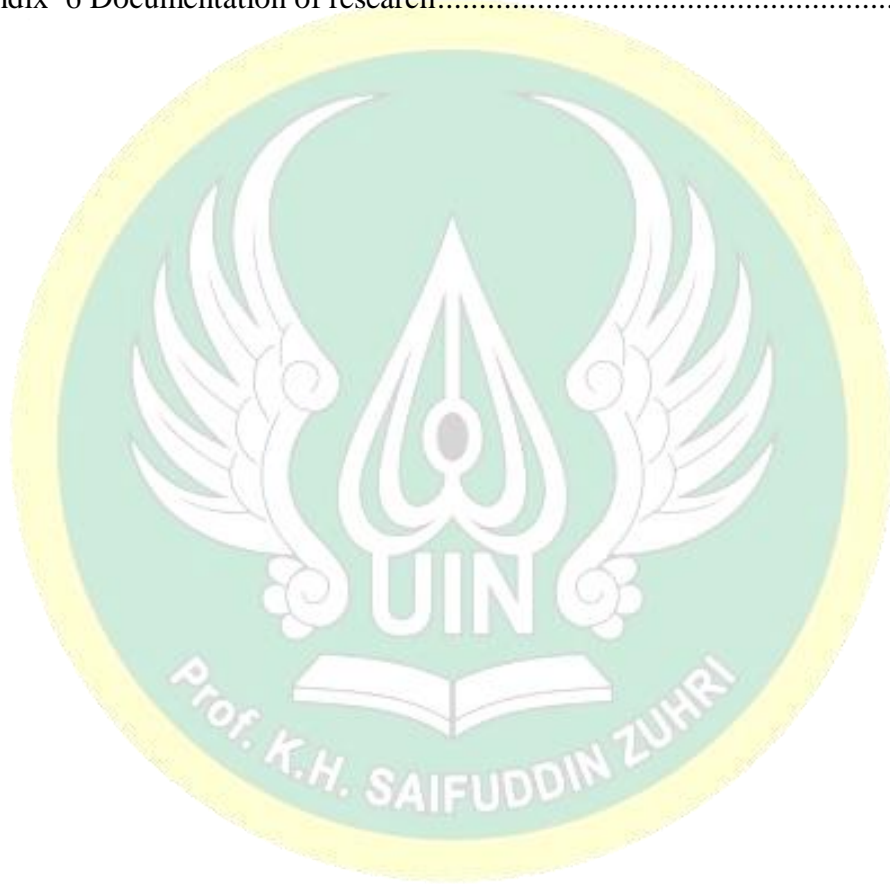
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CHAPTER I INTRODUCTION

A. Background of Study

Deafness is the inability to hear sounds clearly or not at all due to interference or malfunction of the ear's hearing system. This can involve many different aspects, from blockage of the ear canal to damage to the eardrum and the auditory nerve. They have developmental hearing disorders, affecting communication skills, learning, and social interactions (Arumsari, 2022). Deaf people use sign language to communicate with other people. Sign language is a communication system that uses hand gestures, facial expressions, and other body movements to convey meaning and communicate without spoken words. Sign language is used by people who are hearing impaired or deaf to communicate and interact with other people (Falan, 2022).

English language education Children with special needs also have the right to receive the same education as other normal children. According to the 1945 Constitution Article 31 paragraph 1, we can read "Every citizen has the right to receive instructions this is also supported by UUD No. 20 of 2003 concerning the national education system, Article 5 paragraph 2 clearly states that citizens with physical, emotional, mental, intellectual and social disabilities have the right to special education. Motivation for community development requires developing more effective learning models, which can provide the necessary knowledge and skills for deaf children, and can also form good behavior (Dhany, 2018).

Deaf children in English class still having many problems. Their English vocabulary is still very minimal. Treasury There are still few Indonesian words, let alone intermediate-level English vocabulary The way it is written and the way it is read are different. The reason why deaf children lack English vocabulary is that they have problems with partial or complete hearing aids, which cause hearing impairment or loss and affect language development; (2) among deaf scholars, the focus is only on developing spoken language for daily communication, leaving aside foreign languages;

and (3) there are very few educational facilities that focus on foreign languages, especially English so deaf people cannot develop foreign language vocabulary, especially English (Rizki, 2016).

The use of applications in learning has become popular and is no longer foreign to students. Especially in this day and age where technology plays a central role in almost every aspect of life. In the world of education, educational applications have become an invaluable tool to help students in their learning process. The use of applications such as Kabitaru in learning reflects the transformation of education to keep up with the times. This is a positive step towards more interactive and technology-based learning that can prepare students to meet the demands of an increasingly digital world.

Previous research related to the development of English language teaching facilities for deaf children includes three important studies. The first research by Ulfa, Ema Mawaddah, Vernanda Genesa, Nopprima, and Arie Laili entitled “penerapan model make a match untuk meningkatkan kosakata bahasa inggris bagi siswa tunarungu”. The main results of this study show that deaf students successfully improved their English vocabulary by using the “Make a Match” cooperative learning model. After two learning cycles, students' affective, psychomotor, and cognitive learning outcomes improved significantly (Ulfa et al., 2021).

Second research by Sari Mahyani entitled “Penggunaan Media Flash Card Untuk Meningkatkan Kemampuan Penguasaan Kosa-kata Bahasa Inggris Pada Siswa Kelas VIII/B1 Tunarungu SLB Negeri 1 Lombok Barat”. The main result of this study shows that the use of flash card media can improve the vocabulary mastery of deaf students in class VII. The student's previous vocabulary mastery level was 55%, but it rose to 68.35% in cycle I and 78.8% in cycle II, showing a significant increase in students' vocabulary mastery (Sari, 2020).

Thirdly, research from Agus Wilson and Sutrisno entitled " Efektifitas Aplikasi Cake Terhadap Kemampuan Penguasaan Kosakata Bahasa Inggris Siswa". This research aims to test the effectiveness of the cake application in improving English vocabulary learning. This research used an experimental method at SMK PGRI Tambun Bekasi by taking 30 students as research samples. This research compared groups that used cake applications and print media in their learning. The results of this research show that learning media and students' learning interests significantly affect student learning outcomes, with the same results and significant interactions between the two (Wilson & Sutrisno, 2022)

The effectiveness of using the kabitaru application in teaching vocabulary mastery at SLB B Yakut Purwokerto fills an important gap in existing research. Although previous research has explored various methods to improve the language skills of students with special needs, specific research regarding the impact of implementing kabitaru in the context of teaching vocabulary mastery to these students is still lacking. This research aims to fill this gap by providing empirical evidence regarding the effectiveness of several applications as educational tools in teaching vocabulary mastery at eleven grades of SLB B students in Yakut Purwokerto. These empirical findings are important for providing information to educators, institutions, and policymakers about the usefulness and feasibility of integrating the KABITARU application into programs for students with disabilities with special needs, thereby contributing to more comprehensive and effective education.

Kabitaru is an Android-based application designed to make it easier for deaf students to understand English spelling and pronunciation. This application was created by a team of Malang State University students consisting of Risa Safira Ramadhani, Nindya Ayu Rizqianti, and Nur Nilam Ayu Saputri under the guidance and supervision of Drs. Abdul Huda M.Pd (Saputri, 2019). This application was created because of the problems and challenges in teaching English to deaf children, the limitations of learning

media, and the demands of a learning revolution. The kabitaru application combines English and Indonesian dictionaries with sign language videos to help deaf children understand vocabulary with appropriate hand movements. This application is also equipped with an interactive quiz to test the extent to which students understand and memorize each vocabulary that has been studied. The friendly appearance and features presented make it easy for students to learn and not to get bored.

This research focuses on students' vocabulary mastery using the mobile-based kabitaru application. Most students can use cell phones during the learning process. Researcher combine the use of the kabitaru application to improve students' mastery and vocabulary, this application can also be used outside of learning hours, to improve vocabulary mastery. Researchers used quantitative methods to test the effectiveness of the kabitaru application for eleven-grade students at SLB B Yakut Purwokerto. Based on the description above, researchers are very interested in analyzing.

”THE EFFECTIVENESS OF KABITARU APPLICATION ON STUDENTS’ VOCABULARY MASTERY AT ELEVEN GRADE OF SLB B YAKUT PURWOKERTO”

B. Conceptual Definition

The following definitions are provided to ensure mutual understanding between researchers and readers by avoiding potential ambiguity or misunderstanding. This term is important for:

1. Vocabulary Mastery

Vocabulary is a component of learning a language, including English. Students need to master vocabulary. The more proficient students are in mastering vocabulary, the faster the learning process will be. (Hiebert & Kamil, 2005) Vocabulary is part of English and consists of terms that mean knowledge. As a result, studying vocabulary is crucial to picking up a new language. In the context of vocabulary mastery, “mastery” is defined as a level of deep and comprehensive mastery of the vocabulary of a language. It includes several important elements that indicate how well a

person can recognize, understand, and use words correctly in a given situation.

Therefore, the definition of vocabulary mastery is one of the most important aspects of learning English as a foreign language for various levels, including beginner, intermediate, and advanced levels. The ability to master vocabulary is one of the most important and basic abilities that students must have so that students have the ability to understand letters, words, and their meanings well.

2. Kabitaru Application

The Kabitaru application is a mobile application designed and developed by three University of Malang (UM) students, namely Risa Safira Ramadhani (Special Education Department), Nindya Ayu Rizqianti (Special Education Department), and Nur Nilam Ayu Saputri (Special Education Department), under the guidance of Dr. Abdul Huda, M.Pd. This application was created to improve English language teaching, one of which is teaching vocabulary mastery for deaf children. One of the main advantages of this app is the video feature that shows native sign language along with some English comprehension, as well as videos that show how to pronounce English words easily. Apart from that, the Kabitaru application also provides a quiz menu designed to help deaf students better understand what they have learned. This application aims to provide a more enjoyable and interactive learning experience for deaf students so they can understand English vocabulary more effectively (Saputri, 2019).

C. Research Questions

Based on the background of the study that has been mentioned before, this research was conducted to answer the question “Is the use of the Kabitaru Application effective in improving the vocabulary mastery of eleventh-grade students at SLB B YAKUT PURWOKERTO?”

D. Objectives And Significances Of The Research

1. Objectives of the Research

Based on the statement of the problem mentioned above, the objectives of the research mentioned below :

To find the kabitaru application's potential to improve students' vocabulary mastery.

2. Significance of the Research

a) Theoretical significance

It is anticipated that the study's findings will improve understanding, expertise, and perceptions of technology-based learning as it relates to vocabulary mastering, particularly inclusive teaching and learning.

b) Practical significance

1) For teacher

To be provided as empirical evidence on the impact of technology use in teaching vocabulary mastery among students with special needs.

2) For reseacher.

Through this research, it is hoped that the researchers can broaden their horizons about teaching English in general, especially in technology-based teaching for students with special needs.

E. Structure of the research

Carrying out research within a structured framework requires systematically organizing the main elements of the research.

The structural flow consists of:

Chapter I is the background study.

This section provides background to the research, explains operational definitions, identifies the fundamental research questions, and explains the aims and implications of this research. In addition, a detailed review of previous studies related to this topic is included, providing an overview of the overall structure of the study.

Chapter II is a special section that focuses on the literature review.

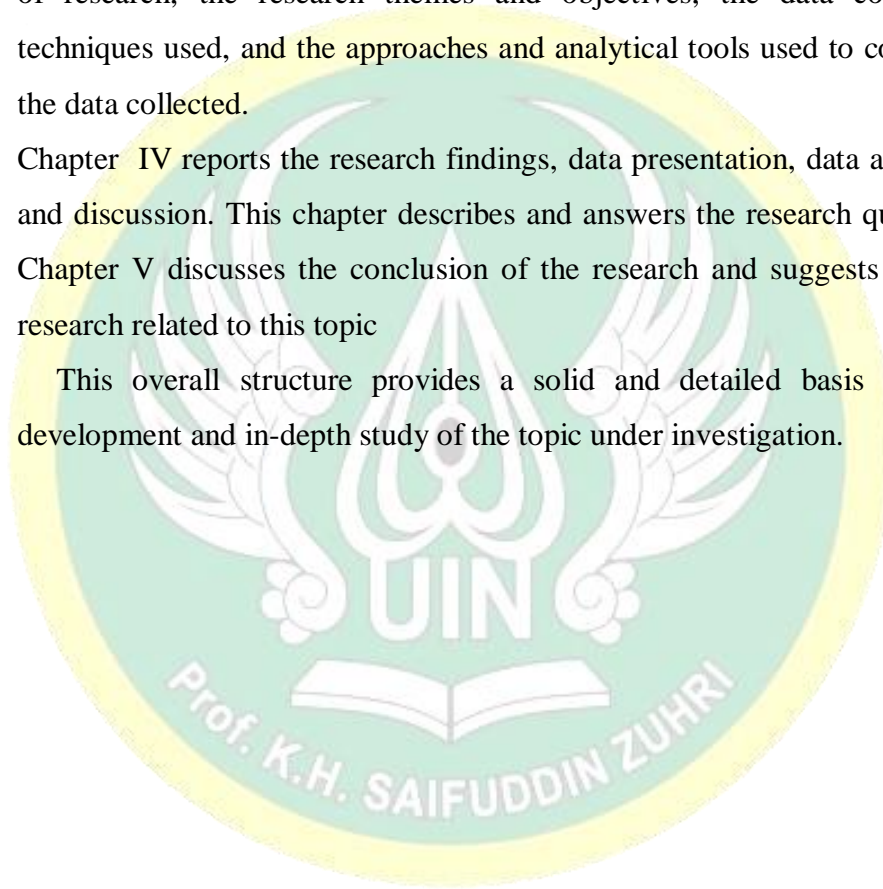
This chapter details various theories and views from related experts to support a pedagogical understanding of the kabitaru application vocabulary mastery on students

Chapter III focuses on presenting the research methodology.

This chapter explains the type of research used, the location and scope of research, the research themes and objectives, the data collection techniques used, and the approaches and analytical tools used to conclude the data collected.

Chapter IV reports the research findings, data presentation, data analysis, and discussion. This chapter describes and answers the research question. Chapter V discusses the conclusion of the research and suggests further research related to this topic

This overall structure provides a solid and detailed basis for the development and in-depth study of the topic under investigation.



CHAPTER II

LITERATURE REVIEW

This section contains a theoretical definition, a review of related literature, the framework of research, and theory development including research hypotheses.

A. Theoretical Definition

This section describes vocabulary mastery, teaching vocabulary for deaf students, and kabitaru application.

a) Vocabulary Mastery

1) Definition of vocabulary mastery

Vocabulary in learning English as a second language or foreign language learning refers to a collection of words or expressions that are needed to understand and communicate in English. This includes words and expressions that are needed to understand a particular meaning or situation used when communicating English, both in general and academic contexts (Lessard-Clouston, 2013). According to As Sabiq & Sukirno (2020) Vocabulary is an important component an English learner possesses and must be acquired. Therefore, without vocabulary, a language would have no sound. For everyone who wants to learn English, vocabulary must first be a main component. In vocabulary learning, mastery refers to the level of understanding and ability of students to recognize words correctly and according to their context or meaning. The term "mastery" is not only based on a basic understanding of words but also includes a deeper understanding of words in their various uses (Bromley, 2007). This shows that mastery involves a higher understanding where a student can know the literal meaning of a word but also apply and use the word according to its use. This in-depth understanding is very important in vocabulary learning because it allows students to use words effectively and appropriately, especially in complex communication.

2) The importance of vocabulary mastery

Vocabulary mastery is the most important part of learning English which has an influence and impact on students' abilities. When learning to master vocabulary, you can learn many things about vocabulary such as spelling, terms, and so on (Richards & Renandya, 2022). Adequate vocabulary is the key to effective communication because limited vocabulary can hinder students' ability to express ideas and understand the meaning conveyed. Without good vocabulary mastery, communication will be disrupted, so in this case, knowledge of lexical vocabulary is the most important thing (Alqahtani, 2015).

In conclusion, vocabulary functions as a basis for language that must be learned to understand meaning and this is also very important for certain language contexts. So, mastering vocabulary is the main and most important requirement for improving English language skills.

3) Aspect in Learning Vocabulary

According to Harmer (1991), there are four things students must know when studying vocabulary:

a. Word Meaning

The meaning of words can vary depending on the context. Understanding meaning in a particular context is a problem in language learning. Learning to master vocabulary is a challenge in itself because vocabulary in learning English has many meanings. Students must understand the meaning and context of the text or conversation so that they can understand vocabulary mastery well and correctly.

b) Use of Words

Every word has multiple meanings. They can also be used in a variety of situations. In cases where the word is used to indicate what the speaker means, such as "he threw a party for his friend", the word "throw" does not explicitly indicate a physical activity, such as throwing, but instead has the meaning of organizing.

c) Word Formation

One item alone or several items or sentences can be combined into one word. A collocation name is a group of words consisting of several words. Pay attention, fast food, etc. are some examples of collocations.

d) Grammatical Words:

The last aspect to pay attention to is grammatical words. This aspect is very important because it can differentiate word use based on pragmatic patterns. Mr John is a doctor, for example. He takes care of people.

b) Teaching Vocabulary for Deaf Students

1) Definition of Deaf Student

Deaf children are children who have hearing loss that affects hearing in everyday life. According to Rahmah (2018), the deaf have 2 categories of hearing loss, namely hard hearing and deafness. This condition affects a person's ability to receive verbal information through their hearing, whether wearing a hearing aid or not. As a result, deaf children often experience delays in language development, communication, and other social-emotional areas.

2) Improving the Vocabulary of Deaf Students

According to Aprizia Perennial Asla Wahyudi et al (2024), some of the approaches used in such studies to improve vocabulary include:

1. Use of kinesthetic visual media

By using visual kinesthetic media, you can improve the attention and concentration of deaf children. This includes the use of pictures and games meant to help people learn vocabulary.

2. Educational games Activities

Such as snakes and ladders games and online games aimed at expanding vocabulary have been proven effective. Children enjoy learning while interacting directly.

3. Tactile Auditorial Kinesthetic

Approach The use of tactile, auditorial, and kinesthetic elements helps deaf children better understand and remember vocabulary. This method gives them the opportunity to learn through hands-on experience.

According to Ma'rufah, (2021) the teacher's role in creating an interactive learning environment is very important for deaf students. Teaching strategies that encourage active interaction, such as allowing specific time for questions and creating a receptive classroom atmosphere, can help students engage more in lessons. Therefore, the use of Kabitaru app can be combined with teaching strategies that encourage active interaction. Umi Handayani & Husein As-Sabiq (2023) study emphasizes that students' attitudes, motivation, and beliefs have an influence on their willingness to communicate in English classes. Students with positive attitudes tend to be more confident in communicating, while unmotivated students may inhibit their participation. Learning strategies that facilitate interaction can help deaf students become more motivated and more engaged in the learning process.

c) Kabitaru Application

1) Definition of Kabitaru Application

The kabitaru application, which is new in the world of education, is designed to help deaf children learn English. Three talented students from Malang State University, Risa Safira Ramadhani, Nindya Ayu Rizqianti, and Nur Nilam Ayu Saputri, made it. For teaching deaf children English, this app is very helpful. This application is very innovative and was created in the world of education which combines a combination of technological advances in the learning system. This will make it easier to deliver English material to deaf children who have limitations and special conditions (Saputri, 2019).

2) Features in the kabitaru application

Various features that support high-quality learning are offered by the kabitaru application, including:

- a) **Multimodal Dictionary:** This application provides a special English-Indonesian dictionary with video footnotes for each word.
- b) **Easy Pronunciation:** This app also provides easy-to-understand pronunciation videos of English words, making it easier for deaf children to understand and improve pronunciation.
- c) **Educational Questions Menu:** Question options help the student understand vocabulary better.

3) Advantages of the Kabitaru Application

The kabitaru application has several advantages or benefits when applied in the learning process, these benefits include:

- a) **Inclusive learning**

The kabitaru application integrates iconic languages into language learning which makes it easier for deaf students.

b) Interactive learning

The kabitaru application has a quiz feature that triggers interactive learning and tests the extent of students' understanding of English language learning.

c) Motivate

In the Kabirau application, sign language videos motivate deaf students to learn English.

d) Flexibility

The Kabitaru application can be accessed on every student's cellphone and can easily study anywhere.

e) Improved communication skills

Practical application By integrating sign language and practical language use, Kabitaru helps users develop effective communication skills that can be applied in real situations.

4) Disadvantages of the kabitaru application

The limitations of using the Cavital application can be explained as follows.

a) New application development.

This program is a new product that is being developed. Therefore, further testing and optimization are required to improve overall stability, reliability, and functionality. You may need to improve the user experience through continuous development iterations.

b) Features are still under development.

Although this program has a lot of potential, some of the program's features are still under development. This limits the capabilities and reliability of these features, impacting the overall user experience.

c) Implementation of user actions and needs.

This application may not fully meet user needs or expectations, as some features are incomplete or still under

development. This can limit the user's ability to use the application according to student needs.

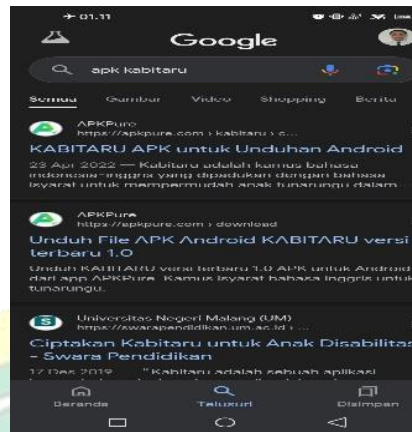
5) Procedure of applying Kabitaru Application in the Classroom

The procedure for implementing the kabitaru application in classroom learning activities must pay attention to several things so that the application can provide benefits. These things include:

- a) Introduction
 - 1) Introducing the kabitaru application to teachers and students.
 - 2) Introducing the functions and how to install the kabitaru application.
- b) Feature introduction
 - 1) Introducing the features available in the kabitaru application and the functions of each feature
 - 2) Monitor the extent of involvement in using the Kabitaru application in learning.
- c) Learning sessions
 - 1) Provide instructions to students to explore the features of the application according to the students' steps and level of understanding.
 - 2) Motivate students to follow the sign language in the Kabitaru application video.
- d) Group activities
 - 1) Arrange students into several groups who then work together to master and improve foreign languages using the kabitaru application.
 - 2) Including inclusive learning in the form of sign language during group learning.
- e) Assess progress in learning.
 - 1) Use the application's assessment features to assess student learning progress

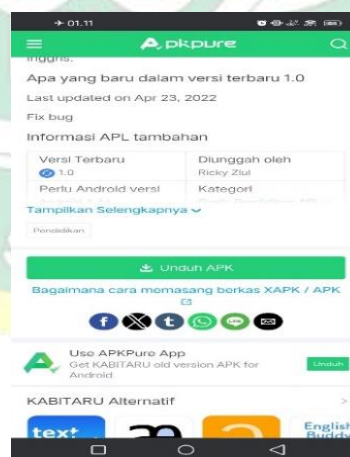
6) How to use

a. Download application



Pictures 2.1 Keyword search on google

To download the Kabitaru application, users can use Google Search. The method is quite easy, namely, you simply write the keyword "Apk Kabitaru" in the search column on Google. After that, many links will appear that are searched for from the previous keyword.

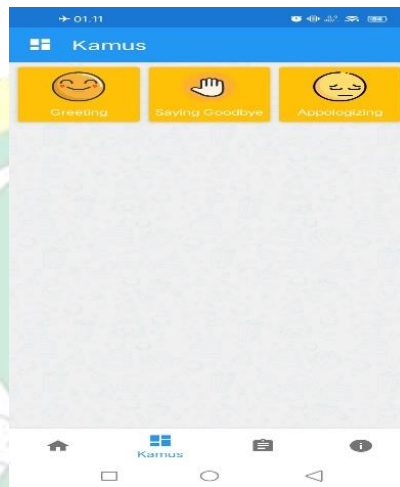


Pictures 2.2 Application download button

After finding the right search result, the next step is to click on the most searched link on the Google search page. This link will usually take users directly to the Kabitaru application download page. Once the page opens, find and click on the "Download" button

or option. At this stage, you will start the process of downloading the Kabitaru application to your mobile device. If your internet connection is stable, the download will run smoothly. Once completed, you can continue the process of installing the application on your mobile phone.

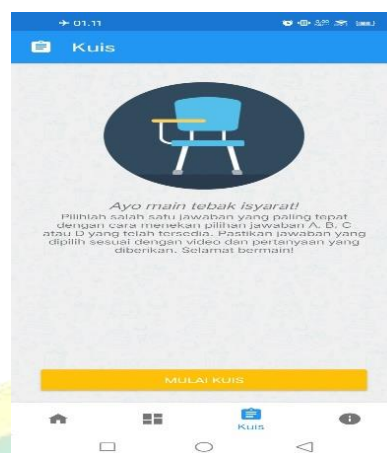
b. Select the material



Pictures 2.3 Material in the application

Once the download process is complete, you can open the Kabitaru application and start using it. On the initial screen of the application, you will be given a variety of choices of materials that you can study. Choose the material that suits your needs or interests, whether it is basic vocabulary, spelling, or pronunciation of words in English. Each material is made to help deaf children learn and has videos that function as sign language.

c. Vocabulary test



Pictures 2.4 Quiz feature in the app

By selecting the app's quiz feature, you can find out how far you understand the topics you have learned. This feature is intended to help you evaluate how far your knowledge has grown after learning new vocabulary or ideas. By taking quizzes, you can find out which topics you have understood well and which ones need more practice. In addition, these quizzes provide useful feedback to improve your understanding and make the learning process more interactive and effective.

B. Previous Study

Based on several sources related to this research, there is previous research that is relevant to this research topic. Previous research shows several findings in increasing teaching vocabulary mastery. Previous research is stated as follows :

The first research by Ulfa, Ema Mawaddah, Vernanda Genesa, Nopprima, and Arie Laili entitled "penerapan model make a match untuk meningkatkan kosakata bahasa inggris bagi siswa tunarungu". By using the Make a Match cooperative learning model, this research aims to increase the understanding of deaf students in class VII SMPLB at SLB Metro Kota regarding the material objects at school. This research has several

similarities and differences with the author. The difference is that this research uses participatory and collaborative classroom action research, and the design is based on the Kemmis and McTaggart model. Cycle I and Cycle II include data collection through observation, testing, and documentation. The second cycle uses quantitative and qualitative data analysis. The results of research on deaf students in class V at SDLB Metro Negeri show that the drawing and drawing learning model has succeeded in improving student learning outcomes. The subjects of this research were students in class VII SMPLB. For the equation, we use data analysis techniques using quantitative methods which cover several important aspects. The results of this study showed that students acquired better vocabulary after using the Make a Match cooperative learning model. Learning outcomes increased, with the average completeness of cognitive learning outcomes increasing from 33.33% in cycle I to 66.67% in cycle II, with an increase of 33.34%. This research has similarities, namely expanding the vocabulary of deaf children and using quantitative methods, while the difference lies in the media used and places of research.

Second research by Sari Mahyani entitled “Penggunaan Media Flash Card Untuk Meningkatkan Kemampuan Penguasaan Kosa-kata Bahasa Inggris Pada Siswa Kelas VIII/B1 Tunarungu SLB Negeri 1 Lombok Barat”. This research aims to improve the ability of deaf students in class VIII/B at SLB Negeri 1 West Lombok to master English language skills by using flash cards during the learning process. This research has several similarities and differences with the author. For differences, this research uses observation, tests, and classroom observation methods. 8 deaf students in Class VIII/B SLB Negeri 1 West Lombok for the 2021/2022 academic year were the subjects of this research. The results of the research showed that deaf students in class VIII/B at SLB Negeri 1 West Lombok who used flash card media succeeded in mastering English. After two learning cycles, students' ability levels increased significantly, from a low level (51.25%) in the pre-cycle to a high level (81.3%). This shows that flashcards help

students learn more and master English skills. This research has similarities, namely increasing the vocabulary of deaf children and using quantitative methods, while the difference lies in the media used and places of research.

Thirdly, research from Agus Wilson and Sutrisno entitled "Efektifitas Aplikasi Cake Terhadap Kemampuan Penguasaan Kosakata Bahasa Inggris Siswa". This research aims to assess the effectiveness of the cake application in teaching vocabulary mastery when learning English. This research took place at SMK PGRI Tambun Bekasi, the students who were the objects of this research were 30 people who were divided into several groups. The first group used cake applications in the learning process, the other group used print media during the learning process. The research results show that learning media has a significant influence on student learning outcomes with a value of 0.006. Apart from learning outcomes, learning media also influences students' interest in learning with a significant value of 0.026. Another influence of learning media also increases student interaction in the learning process with a significant value of 0.018. The average learning results of students who used print media and cake applications showed the same average results, namely 77.50. Thus, this research succeeded in showing that the use of cake applications during the learning process acts as a medium and can improve students' vocabulary mastery. It is hoped that the findings of this research will contribute to the development of more effective English learning methods in the future. This study has similarities, namely using quantitative methods, while the differences are the media used and the different places of research.

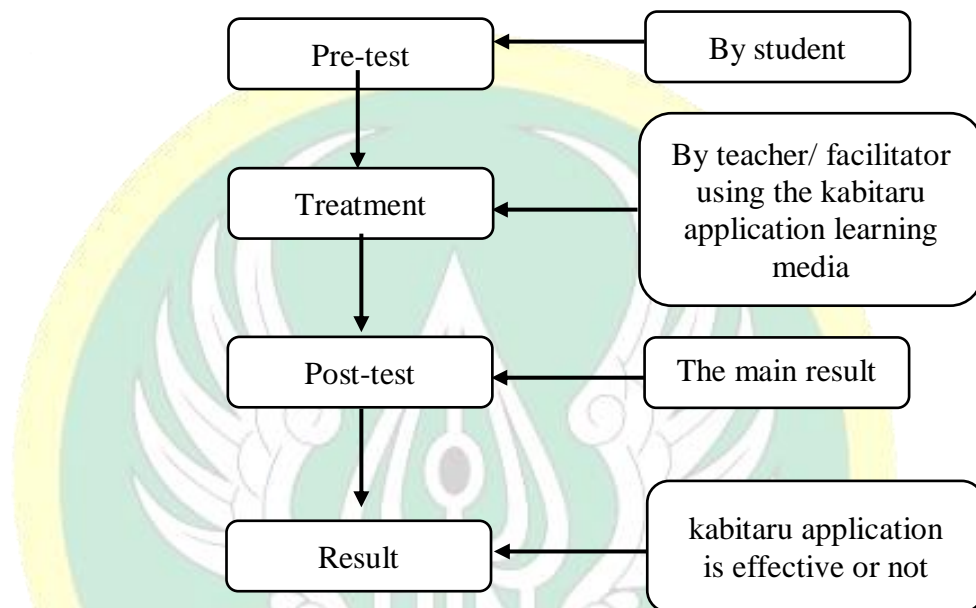
C. Framework of Research

The framework of research or conceptual framework provides a theoretical explanation of the relationship between the variables studied. Therefore, it is necessary to explain theoretically the relationship between the independent variable and the dependent variable. A research paradigm is a formulation of the relationship between these variables. Therefore, every research paradigm must be based on a framework of thought. If the

research concerns more than one variable, the terms of reference for the research must be included. If the research only discusses one or more variables separately, the researcher provides a theoretical explanation of each variable and discusses variations in the magnitude of the variables studied (Soegiyono, 2011).

The framework in this research is as follows:

Table 2.1 Framework of Research



D. Hypothesis

A hypothesis is a temporary answer to a research problem that needs to be verified through the analysis of experimental data. In essence, a hypothesis reflects a prediction that is considered to have a high probability of being the correct answer. There are two types of hypotheses used in a research context, namely the working hypothesis (H_a) which states that there is a relationship between variables. The importance of a hypothesis lies in its ability to be tested experimentally, the clarity of its specification, and its independence from subjective values. Therefore, hypotheses are the main basis for determining the direction and design of research (Jusuf, 2012).

Based on the statements presented by the researcher, the research hypothesis is stated as follows:

1. (H_0): There is no significant effect of using kabitaru application on student vocabulary mastery.
2. (H_a): There is a significant effect of using kabitaru application on student vocabulary mastery.



CHAPTER III

RESEARCH METODOLOGY

This chapter discusses the steps taken in the research to find solutions to the research questions that were introduced previously in the first chapter. This chapter will review the type of research used, describe the research setting, discuss the population and samples that are the research subjects, and explain data collection techniques and analysis methods. This chapter will provide a comprehensive overview of the research that was carried out.

A. Type of Research

This research is research that was carried out in eleventh grade at SLB B Yakut Purwokerto. Researchers used quantitative methods to analyze the vocabulary mastery abilities of deaf students, especially the use of sign language, using application-based learning media called Kabitaru. In this context, this research measured the impact of using the Kabitaru application on the development of vocabulary mastery skills in deaf children. Quantitative experimental research is a research method that uses scientific methods to test hypotheses and collect quantitative data. This study used a one-group pretest-posttest design model and a pre-experimental methodology. This research method was chosen because it includes preliminary measurements before providing treatment to the respondent group. The existence of a pre-test phase allows researchers to observe changes in behavior or results that occur by comparing the results of the pre-test and post-test. By carrying out this initial test, researchers can better understand the effects of the treatment given and interpret the research results more accurately. In other words, pretesting helps researchers measure the effects of treatment and present research results in a more logical way (Prasetyo et al., 2020).

B. Time and Place of Research

SLB B Yakut Purwokerto School also experiences the same problem. Problems arise from the shortcomings and privileges of deaf and speech-impaired children. Based on the results of preliminary research at SLB B Yakut Purwokerto and conducting interviews with the teacher, several problems were found which were broadly the same as the problems mentioned. Students tend to easily forget the material they have been taught and use sign language to communicate. Some of these things become difficulties in learning English in class. Therefore, learning English focuses on simple things so that they are easy to remember, such as learning knowledge that is repeated over and over again.

This research conducted in class XI at SLB B YAKUT Purwokerto in January and February of the 2025/2026 school year. The location of SLB B YAKUT Purwokerto is on Jl. Colonel Sugiri No. 10, Brubahan, Kranji, East Purwokerto District, Banyumas Regency, Central Java. Site selection was driven by the school's educational expertise and special attention to deaf children. By focusing on deaf education, this research can be carried out in a conducive environment and with supporting resources to understand and improve vocabulary mastery skills in deaf children.

Table 3.1 Time of the research

No	Meeting	Time
1.	Pre-test	Wednesday, January 15 2025
2.	Treatment 1	Wednesday, January 15 2025
3.	Treatment 2	Wednesday, January 22 2025
4.	Post-test	Wednesday, February 5 2025

C. Population and Research Sample

a) Population

A research population can be defined as a group of individuals, subjects, or units that have certain characteristics or attributes that are the subject of research. This population is the group that we want to generalize or draw conclusions from the results of the research conducted. In quantitative research, populations can be individuals, groups, organizations, or specific regions that share similar characteristics. Meanwhile, in qualitative research, the subject can be a provider of information, sources, or cases related to the research topic (Subakti et al., 2022). The research population consisted of eleventh-grade students from SMALB (Special High School) SLB YAKUT Purwokerto. The reason for choosing this subject is because the learning environment at school has proven to be beneficial for deaf students in understanding and absorbing subject matter, depending on the specific conditions.

b) Sample

A sample is a group of individuals or subjects selected from a larger population to represent the population under study. Careful sampling techniques are applied to ensure accurate representation. The researcher used a one group pretest-treatment-posttest design. In this study, researchers used purposive sampling, which is the selection of samples based on certain criteria, in this case all grade XI students in SLB B YAKUT Purwokerto. This population will be drawn from special schools Respondents in this study were pre-tested to measure the initial condition before being given treatment. After the pre-test stage, the research subjects will be given treatment and then tested again using a post-test to observe and understand the changes that occur after treatment. The use of a pretest allows the researcher to compare the results of the posttest with the initial conditions before treatment, thus providing more accurate information regarding the impact of the

treatment on the group. This method helps evaluate the impact of the treatment more objectively and scientifically.

D. Variable and Indicator of Research

A variable can be defined as a concept, characteristic, or feature that can change or change during the course of the research. Variables are used to measure or observe the phenomenon you want to study and can have different values. These variables can be independent variables that influence the dependent variable or dependent variables that are influenced by the independent variable (Subakti et al., 2022). The independent variable and the dependent variable are the two variables in this study :

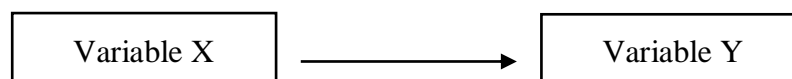
1) Independent Variable (X)

Variable X is the premise variable in the research. This variable is the object of hypothesis testing and assessment of the causal relationship with variable Y (consequence). Variable X can be a factor or condition that influences or is related to variable Y. (Fitri & Haryanti, 2020) The kabitaru application is the independent variable in this research.

2) Dependent Variable (Y)

The dependent variable is a variable whose value is influenced or depends on other variables called independent variables. The dependent variable is the variable whose impact the research wants to study or measure (Subakti et al., 2022). The dependent variable in this research is the students' speaking skills of SLB B YAKUT Purwokerto.

Table 3.2 Variable of Research



With the following information :

Variable X : Kabitaru application

Variable Y : Students' vocabulary mastery of eleven grade in SLB B
YAKUT Purwokerto

E. Design of The Research

The design research for this study was the Pretest and Posttest, as shown in the table below :

Table 3.3 Table of Research

Subject groping	Group	Pretest	Treatment	Posttest
R	Experiment	0 ₁	X	0 ₂

With the following information:

0₁ : Pretest

X : Learning with kabitaru application

0₂ : Posttest

F. Techniques of Data Collection

a) Pre-test

A pretest is a preliminary test carried out on the experimental group before the group receives treatment or intervention. The benefit of the pretest is that it measures the initial condition of the experimental group before receiving a certain treatment. With the pretest, researchers can convey changes in the experimental group that occurred after giving the treatment (Prawira, 2013). In this study, eleventh-grade students at SLB B Yakut in Purwokerto were pretested. The pretest was conducted for 35 minutes using questions that had been carefully designed to align with students' learning levels. The test items had undergone expert validation to ensure their relevance, clarity, and appropriateness, making them suitable for assessment. Additionally, the questions were thoroughly reviewed and refined based on expert recommendations, ensuring that the test could be administered effectively and produce reliable results. The pretest questions consisted of multiple-choice questions related to the material and vocabulary used in the Kabitaru app. During the test, the teacher used a projector to show the 12

questions with English cues as visual objects. After that, students entered their answers into the answer sheet that had been given to them.

b) Treatment

The treatment given to the experimental group is an action that influences a certain situation or achievement. This treatment can take the form of an explanation to the experimental group on certain situations. The aim of this treatment is to ensure that the experimental group accurately understands every explanation given and that researchers will obtain accurate and accountable data. With treatment, researchers try as much as possible to avoid errors during data collection (Jusuf, 2012).

During the treatment session, the teacher and researcher collaborated to use the kabitaru application in learning to help master vocabulary so that students understand and are more conducive to learning. The treatment was carried out in 4 meetings which discussed greeting, saying goodbye, apologizing and the last meeting reviewed from the first to the third meeting. The first meeting discussed greetings and how to pronounce them using English sign language by using the Kabitaru application as a learning medium. The second meeting discusses saying goodbye and how to pronounce it using English sign language using the kabitaru application as a learning medium. the third meeting discusses apologizing and how to pronounce it using English sign language using the kabitaru application as a learning medium. the fourth meeting discusses or repeats the discussion from the first to the third meeting.

c) Post-test

A post-test is an assessment method that is applied after the experimental group undergoes treatment and pre-test. The post-test has the main objective, namely to measure any changes that occur after the experimental group is given treatment in research. Post-tests are often used to find changes or compare results before and after being given treatment as a test tool to test how effective the treatment is. This

assessment provides an easy and better understanding of how successful the treatment given was in producing every change I desired in the research process (Jusuf, 2012). The pretest was conducted for 35 minutes using questions that had been carefully designed to align with students' learning levels. The test items had undergone expert validation to ensure their relevance, clarity, and appropriateness, making them suitable for assessment. Additionally, the questions were thoroughly reviewed and refined based on expert recommendations, ensuring that the test could be administered effectively and produce reliable results. The post-test questions consisted of multiple-choice questions related to the materials and vocabulary used in the Kabitaru app. During the test, the teacher used a projector to show the 10 questions with English cues as visual objects. After that, students entered their answers into the answer sheet that had been given to them.

In this research, researchers collected data through several stages. First, initial data will be collected through a pre-test which will be given to all eleventh-grade students as an initial step in the research. The purpose of this pretest is to determine the student's initial condition before undergoing certain treatment. After the pre-test stage, all research subjects will receive special treatment according to the learning plan. Once treatment is complete, further data collected through post-testing. This post-test will be used to measure the changes that occur in students after receiving treatment. In this way, researchers have data that includes basic information and developments arising from the treatment of research subjects.

G. Data analysis

1) Analysis of the research instrument

a) Validity test

The selection of validity experts in this research was based on the need to ensure that the instruments used were able to accurately and relevantly measure the variables studied. This approach allows researchers to obtain in-depth evaluations from individuals who have expertise in related fields, such as inclusive learning. Experts were selected because they have a strong theoretical understanding, practical experience, and the ability to critically analyze the content of the instrument, so they can provide valuable input regarding aspects that need improvement, such as clarity of language, coverage of material, and relevance of items to research objectives.

Involving a lecturer from UIN Prof. K.H. Saifuddin Zuhri Purwokerto, who has an academic background and experience in inclusive learning, provides confidence that the instrument has gone through a reliable validation process. The revision process based on expert advice also helps ensure that the instrument is not only suitable for use but also capable of producing valid and reliable data for further analysis. Thus, expert validity provides a guarantee that the research instrument has good quality and high relevance to the research context.

b) Reliability test

The test analysis using the formula Alpha Cronbach, as follows:

$$r_{\text{count}} : \left(\frac{k}{k-1} \right) \left(\frac{\sum \sigma_b^2}{\sigma_t^2} \right)$$

Information

- r_{count} : instrument reliability
 k : Number of questions or items
 $\sum \sigma_b^2$: items variant number

σ_t^2 : total variants

Qualifying the correlation coefficient put forward according to Suharto (In Aghisna, 2024)

Table 3.4 Reability Score Criteria

No	Reliability Coefficient	Category
1.	0,800 – 1,000	Very High
2.	0,600 – 0,799	High
3.	0,400 – 0,599	Fair
4.	0,200 – 0,399	Low
5.	0,000 – 0,199	Very Low

To calculate the reliability of this research measuring instrument, Cronbach's Alpha formula was used with SPSS 25.

c) Normality test

The normality test determines whether the data comes from a population with a normal distribution or is within the normal limits of its distribution (Nuryadi et al., 2017). This research uses sample paired t test using Spss software version 25.

Information :

H_a : (sig) Value > 0.05 to indicate normal distribution

H_o : (sig) value < 0.05 to indicate non-normality

d) Mean

Mean Pretest (O_1) and mean post tetst (O_2)

$$O_1: \frac{\sum o_{11} + o_{12} + \dots}{n}$$

O_1 : total mean pre-test

O_{11} : score subject

N : total subject

2) Statistics analysis

A. Paired Sample T test

The data collected consisted of two related measurements from the same group of students, before and after the use of the Kabitaru app. Therefore, the paired samples t-test was chosen. To find out if there is a statistically significant difference between the pretest score and the posttest score, this test is appropriate. Paired sample T test using SPSS software version 25

Information

H_a : (sig) Value < 0.05 accepted

H_o : (sig) value > 0.05 not accepted

B. N- Gain Test

N-Gain test is conducted to test the difference between the pre-test and post-test to see how significant the increase is after treatment is given. N-Gain test the test analysis using the formula as follows :

$$N\text{- Gain} = \frac{ScorePosttest - ScorePretest}{ScoreIdeal - ScorePretest}$$

Table 3.5 N-gain Score Criteria

N gain score	category
$G > 0,7$	High
$0,3 \leq g \leq 0,7$	Medium
$G < 0,3$	Low

CHAPTER IV

FINDING AND DISCUSSION

This chapter presents the results that aim to answer the research statement comprehensively.

A. Findings

This research was conducted in the eleven grade class of SLB B Yakut Purwokerto. This study aims to determine whether or not there is a kabitaru application in mastering vocabulary. Besides that the total population of students in this study amounted to 7 students who were taken from one eleventh grade SLB B Yakut Purwokerto.

The researcher collected and examined the data obtained from the pre-test and post-test to analyze the effectiveness of using Kabitaru app in improving students' vocabulary comprehension. The collected data will be presented in tabular form accompanied by descriptive analysis to provide an overview of the changes that occurred in students before and after the treatment. The final results that are systematically analyzed and designed are used to show the extent to which the Kabitaru app contributes in improving students' vocabulary acquisition by highlighting the significant difference between the pre-test and post-test results.

1. Data Description

Student achievement data from the pretest and posttest results in this study come from Grade 11 students at SLB B Yakut Purwokerto. The test was given using multiple-choice questions with different levels of difficulty on the same topic to more accurately measure the development of students' understanding. The purpose of this study is to determine the improvement of students' skills after the treatment through comparative analysis of pre and post-test results. Details of the evaluation results are presented systematically in the following :

Table 4.1 Result of pre-test and post-test

Initial	Pre-test	Post-test
MFZ	10	9
MA	7	9
FAR	5	6
DA	6	10
MR	9	10
MIH	6	9
NS	9	10
Total	53	63

in the table above The total score of students in the pre-test was 53, which increased to 63 in the post-test. This change shows a significant difference and indicates that students' understanding and skills improved after the treatment.

2. Treatment Description

According to preliminary research on classroom students, there are a number of problems that students face in learning English, especially in vocabulary acquisition. Some of the main factors responsible for these vocabulary limitations include students' lack of exposure to English in daily life, the number of accessible educational resources for students with special needs, and less interactive learning approaches. In addition, since there is no effective verbal interaction in English, students with hearing impairments tend to have difficulty in understanding and remembering new words. The absence of visual media and technology that can help them understand vocabulary contextually exacerbates this problem. As a result, students often have difficulty in recognizing and remembering, which ultimately causes them to be less interested in learning the language.

To solve this problem, learning methods must be creative, interesting, and suitable for the needs of students with deaf special needs. This will increase students' motivation to learn. In this research, Kabitaru application is used as a technology-based learning tool. Through its various interactive features, the app aims to help students understand and memorize English vocabulary more easily. These features include additional exercises to enhance students' understanding of the vocabulary and the vocabulary. This app is particularly relevant for hearing-impaired students' learning as it relies on strong visual features and an attractive display.

In the in-class treatment, students were first introduced to the Kabitaru app, from how to install it to exploring the features available in it. The teacher provides gradual guidance so that students can understand how this application can help them in learning English vocabulary. The first step is to demonstrate how to download and install the app on their devices. After that, students are invited to explore the main features of the app, such as educational games that focus on word recognition, vocabulary memorization exercises, and the use of interesting images and animations to clarify the meaning of certain words. Teachers also provide assistance in understanding each feature, ensuring that students not only use it, but also really feel the benefits in improving their understanding of English vocabulary. In addition, learning sessions using this app are conducted repeatedly with various variations of activities so that students do not feel bored and remain motivated to learn.

With the Kabitaru application in the learning process, it is expected that there will be an increase in students' motivation in learning English as well as an increase in the number of vocabulary they master. The use of technology in this learning provides a more interesting experience for students, especially because they can learn in a more visual and interactive way. In addition, this approach also helps to overcome the limited access to conventional teaching materials that are often less

suitable for the needs of students with special needs. With a more adaptive and technology-based method, students are expected to not only be able to memorize vocabulary better, but also be more confident in using English in a wider context. This fun and effective learning can be one of the innovative steps in improving the quality of education for SLB B Yakut Purwokerto students, while giving them the opportunity to develop language skills more optimally.

3. Data Analysis

A. Reliability Test

1) Pre-test Reliability

Table 4.2 Results of the pre-test reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
.612	10

The results of the pretest reliability test show that the measurement instrument used in the pretest has good stability in measuring students' abilities, with a value of .612, which indicates that the instrument is feasible and reliable to evaluate student development before being given treatment in the study.

2) Post-test Reliability

Table 4.3 Results of the post-test reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
.635	10

The post-test reliability test results show a value of .635, which indicates that the research instrument has an acceptable level of consistency. Based on the interpretation of the reliability coefficient, this value is included in the reliable and high enough category, so it can be concluded that the measuring instrument used in this study is able to provide stable and reliable results in measuring the variables studied.

B. Normality test

Table 4.4 Results of the normality test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.224	7	.200*	.911	7	.404

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

A very important preliminary process in statistical analysis is the normality test, which is carried out to determine whether the data used follows a normal distribution. In this study, the Shapiro-Wilk method is considered more appropriate than the Kolmogorov-Smirnov method because the number of samples used is less than 50. The results of the Shapiro-Wilk normality test show a significance value (Asymptotic Sign. 2-tailed) of 0.404, which is higher than the commonly used significance limit of 0.05. Therefore, it can be concluded that the pretest data is not significantly different from the normal distribution. This indicates that the data is normally distributed and fulfills the assumption of normality.

C. Hypothesis test

Table 4.5 Results of Paired Sample Test

		Paired Samples Test							
		Paired Differences							
			Std. Devi	Std. Error	95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	ation	Mean	Lower	Upper	t	df	
Pair 1	pretest - posttest	-1.571	1.618	.612	-3.068	-.075	-2.569	6	.042

Hypothesis testing using the Paired Sample t-Test was conducted to determine whether there was a significant difference between the pretest and posttest results in the same group. This test is appropriate because the data being compared comes from two measurements taken on the same subject, namely before testing (pretest) and after testing (posttest). In addition, the conditions for using parametric tests are met after the data is declared normally distributed based on the results of the normality test.

Based on the analysis results displayed in the table above, the significance value (Sig. 2-tailed) is 0.042. This value is smaller than the specified significance level, which is $\alpha = 0.05$, so it can be concluded that there is a significant difference between the pretest and posttest scores. This means that the null hypothesis (H_0) stating that there is no difference between the pretest and posttest is rejected, and the alternative hypothesis (H_1) stating that there is a difference is accepted. These results indicate that there is a significant effect after the treatment is given, which is reflected in the increase in posttest scores compared to the pretest. This can also be seen from the mean difference value of -1.571, which shows that the posttest score is generally higher than the pretest. Thus, the intervention or treatment provided in this study can be concluded to have successfully improved the measured outcomes, and the analysis that has

been carried out shows that the improvement did not occur by chance, but was statistically significant.

D. Descriptive Statistics

Table 4.6 Descriptive Statistics

Statistics		Hasil Belajar Pretest	Hasil Belajar Posttes
N	Valid	7	7
	Missing	0	0
Mean		7.57	9.00
Std. Error of Mean		.685	.535
Median		7.00	9.00
Mode		7 ^a	9 ^a
Std. Deviation		1.813	1.414
Variance		3.286	2.000
Skewness		-.043	-1.980
Std. Error of Skewness		.794	.794
Kurtosis		-1.374	4.400
Std. Error of Kurtosis		1.587	1.587
Range		5	4
Minimum		5	6
Maximum		10	10
Sum		53	63

a. Multiple modes exist. The smallest value is shown

Various measures of data centering and dispersion showed improvement in student performance from pretest to posttest, as indicated by the results of the descriptive statistical analysis. This study used seven respondents as the sample, and there were no missing data. The mean increased from 7.57 in the pretest to 9.00 in the posttest, while the median also increased from 7.00 to 9.00, indicating that students' understanding improved after the treatment. The most frequently occurring value also increased from 7 in the

pretest to 9 in the posttest, indicating that learning outcomes improved. In terms of data distribution, the standard deviation dropped from 1.813 to 1.414, indicating that the posttest data was more homogeneous than the pretest. The number of marks students received increased from 53 on the pretest to 63 on the posttest, increasing from 53 on the pretest to 2,000, and the variance also dropped from 3,286 to 2,000, indicating that the posttest results were more uniform. In addition, the variation increased from 5 to 4, indicating that the posttest results were more uniform. In addition, there were changes in the distribution of the data. Skewness increased from -0.043 to -1.980, indicating that the data distribution is increasingly skewed towards higher scores, and kurtosis increased from -1.374 to 4.400, indicating that the data distribution underwent a change in its shape. Therefore, it can be concluded that the use of Kabitaru app when teaching vocabulary improves students' learning outcomes.

E. N-gain

Table 4.7 Descriptive Statistics

Descriptive Statistics					
	N	Mini mum	Maxi mum	Mean	Std. Deviation
Ngain	7	-.23	1.00	.6263	.47526
Valid N (listwise)	7				

The result of the N-Gain value calculation shows 0.6263, which indicates that the student's ability increased significantly after the treatment was given. This value is included in the high improvement category based on the interpretation of the N-Gain category, which indicates that the intervention or treatment-in this

case the use of the Kabitaru application during the learning process- successfully improved students' understanding significantly.

B. Discussion

This study aimed to find out if using of the Kabitaru application had a significant impact on the vocabulary mastery of SLB B Yakut Purwokerto eleventh grade students following treatment in learning activities. Researcher used a quantitative approach and a pre-experimental method of one group pretest-treatment-posttest type. This research method was chosen because it includes an initial measurement before giving treatment to the respondent group. The existence of a pre-test stage allows researchers to observe changes in behavior or results that occur by comparing pre-test and post-test results. By conducting this initial test, researchers can better understand the effects of the treatment given and interpret the results of the study more accurately. In other words, pretests help researchers measure the effects of treatment and present research results in a more logical way.

The research was conducted in one class, namely the eleventh grade of SLB B Yakut Purwokerto which was carried out for one month with 3 meetings. The pre-set and posttest questions given are about apologizing, saying goodbye, and greeting by answering 10 multiple choice questions. Previously, the pre-test and post-test questions given to students had been validated by an English lecturer from UIN Prof K.H. Saifuddin Zuhri Purwokerto. Researchers applied the kabitaru application as a learning media to improve vocabulary mastery when treatment was given twice. Then in the final stage, students were given a post-test question of 10 multiple-choice questions. The pre-test and post-test questions have different levels of difficulty so they can be analyzed from the results of the pre-test and post-test that have been given to students.

Based on the results of data analysis that has been done by researchers, it shows that the use of the Kabitaru application in learning mastery of vocabulary in eleventh grade SLB B Yakut Purwokerto has a significant effect on improving learning outcomes for mastery of new vocabulary. This is evidenced by statistical tests that show the difference between the pre-test and post-test results, which indicate an increase in positive development after students are given treatment using the Kabitaru application in the learning process.

The pretest reliability test, with a reliability coefficient value of 0.612, shows that the tool used has good stability in measuring students' initial abilities. The posttest reliability test value, on the other hand, reached a value of 0.635, which indicates that the tool is suitable for use in research because it is able to produce consistent and stable results. This shows that the measuring instrument used in the study has an acceptable level of consistency, so that the results obtained can be trusted to evaluate student development after receiving treatment.

Based on the normality test that has been carried out, the researcher obtained an Asymp. Sig. (2-Tailed) value greater than the significance threshold of 0.05. This result indicates that the research data is normally distributed. Because the assumption of normality is met, the use of parametric statistical analysis methods such as the paired sample t-test is considered appropriate. When the normality assumption is fulfilled, parametric tests can produce reliable and accurate results. Therefore, to test the hypothesis in this study, a parametric approach was applied. This method is effective for analyzing data that is normally distributed and is commonly used when the data scale meets the assumptions of parametric statistics, such as interval or ratio scale data.

The results of statistical analysis using the paired sample test show that the Asymp. Sig. (2-tailed) value of 0.042, less than the 0.05 significance limit. This indicates that the alternative hypothesis (H_a) is accepted, which shows that the pre-test and post-test results are significantly different. This difference shows that the use of Kabitaru application as a learning media helps deaf students master vocabulary better. This improvement shows that technology-based learning can help students with special needs in improving their understanding and language skills. The results of this study also show that digital applications can make learning more interactive and interesting for students.

In addition, the result of the N-Gain calculation reached a value of 0.6263, which shows a significant improvement. This indicates that the use of Kabitaru app as a learning intervention successfully improved students' vocabulary comprehension significantly. This improvement not only shows that technology-based learning tools can help inclusive learning, but also provides empirical evidence that educational innovations can help students with special needs learn better.

The results from this study show that students at SLB B Yakut Purwokerto in class XI improved their vocabulary mastery significantly by using the Kabitaru app. The difference in students' average scores on the pre-test and post-test showed an increase in comprehension after using the app. The Kabitaru app makes learning more visual and interactive, which is more in line with the needs of deaf students. The theory discussed in Chapter II and its relationship with previous research will be used to analyze the findings of this study. In addition, matters such as how effective technology-based learning methods are, their effects on inclusive education, and comparisons with conventional methods will also be discussed in more depth in this discussion.

Vocabulary mastery is an important component in language learning, as explained in Chapter II. According to Harmer (1991), vocabulary mastery consists of four main components: word meaning, word use in context, word formation, and grammatical elements. The Kabitaru app, which features a multimodal dictionary with sign language videos, helped students in this study understand the meaning of words. Compared to traditional approaches that only rely on text or images, video visualization helps students understand and remember vocabulary better.

In addition, the results of this study are related to Lessard-Clouston, (2013) theory on the importance of vocabulary in foreign language learning. Due to the lack of exposure to spoken language, deaf students face difficulties in developing new vocabulary. Students have a more visual and interactive learning experience with the Kabitaru app. This is in accordance with the technology-based learning approach suggested by Alqahtani (2015). Therefore, this app not only serves as an auxiliary tool, but also serves as the main medium to help students improve their language skills.

This study supports the concept of technology-based learning proposed by Saputri (2019) from an inclusive education perspective. She said that Kabitaru app was created to help deaf students better understand English pronunciation and spelling. The app has features that allow students to learn independently and more flexibly, such as interactive quizzes and sign language videos. The results of this study show that the use of technology-based apps not only makes students better understand their vocabulary, but also makes them more interested in learning English.

The effects of technology-based media when compared to conventional methods also need to be considered. Technology-based learning can increase student engagement and ease access to learning materials, as described by Richards & Renandya (2022). In this situation, the Kabitaru app serves as both a learning aid and a learning platform that allows students to practice on their own outside of class. This shows that

using technology in inclusive education can produce better results than traditional approaches.

This study is in line with previous research discussed in Chapter II. For example, research conducted by Ulfa et al. (2021) who used the “Make a Match” learning model to help deaf students expand their English vocabulary showed that the interactive method was able to significantly improve students' vocabulary comprehension. The results of this study also show that technology-based interactive methods can significantly improve students' vocabulary comprehension.

In addition, research conducted by Sari (2020) who utilized flashcard media to teach English vocabulary to deaf students showed that the method improved students' vocabulary understanding. The learning media used is the main difference from this study. While Sari's study used flashcards, this study used the Kabitaru application as digital media. The similarity between the two, however, is that both are effective in improving students' vocabulary. This shows that a visual-based approach is essential for improving deaf vocabulary comprehension.

Research conducted by Wilson & Sutrisno (2022) which examined how effective the “Cake” app is for vocabulary learning showed that technology can significantly improve student learning outcomes. The results of this study support the findings of previous studies showing that technology-based applications help with vocabulary acquisition. In this study, the Kabitaru app showed similar results: students were more interested in learning vocabulary compared to conventional methods.

Another aspect that attracts attention is how effective the Kabitaru app is compared to other apps tested in previous studies. The results of this study show that the app not only improves students' vocabulary acquisition but also increases their motivation to learn. This finding is in line with previous research, which shows that technology-based learning can increase students' engagement in the learning process. Students also have the advantage of using sign language in this app over text or image-based learning

approaches as they can learn through visualization of gestures which are easier to understand.

Therefore, this study reinforces the findings of previous research that the use of interactive media, both visual cards and digital applications, has an important role in improving the vocabulary acquisition of deaf students. This study also shows that Android-based apps like Kabitaru can help students with hearing impairments learn inclusively. The results of this study further confirm the importance of technology in inclusive education after considering other factors such as technology effectiveness and student engagement.

Thus, this study reinforces previous research findings that the use of interactive media-both visual cards and digital apps- has an important role in improving deaf students' vocabulary acquisition. In addition, this study shows that Android-based apps like Kabitaru can help students with hearing impairments learn better. The results of this study further confirm the importance of technology in inclusive education when considering other factors such as technology effectiveness and student engagement.

To make this study more relevant, it should be noted that the application of technology in learning not only improves students' vocabulary acquisition but also increases their motivation to learn. The results of this study are in line with the fact that students are more interested in learning with the Kabitaru app compared to conventional learning methods. Therefore, it is highly recommended that technology-based applications be used in inclusive education to support deaf students' success in learning.

CHAPTER V

CONCLUSION AND SUGGESTION

This chapter presents the conclusion and summary of this research. This chapter shows briefly the results of the research findings and also contains suggestions in the learning process to improve vocabulary mastery, specifically in inclusive education. In addition, this chapter presents the limitations of the research.

A. Conclusion

The results of data analysis show that the use of Kabitaru application in vocabulary learning in eleventh grade SLB B Yakut Purwokerto has a significant impact on improving learning outcomes. This is evidenced by the significant difference between the pre-test and post-test results before and after using the Kabitaru application in learning. The pre-test and post-test results with a value of 0.612 and 0.635 show that the research instrument has good stability in measuring students' abilities before and after treatment. The normality test shows that this study uses parametric testing methods that are more in line with the characteristics of the data collected, because the data is normally distributed. The paired sample test resulted in an Asymp. Sig (2-tailed) value of 0.042. The N-gain calculation result of 0.6263 further indicates that this technology-based learning intervention can have a positive effect on students' vocabulary comprehension.

The conclusion of the research that was conducted shows that the use of the Kabitaru application as a learning tool has a significant effect on improving the mastery of vocabulary of deaf students. Statistical analysis showed a significant increase in N-Gain scores, as well as a significant difference between pre-test and post-test results. The success of this app shows that technology-based innovations can help inclusive learning, especially for students with special needs. In addition, the research results obtained through the use of non-parametric methods used in this study are more accurate and better suited to data that is not normally distributed. The results showed that

the use of Kabitaru was effective in improving deaf students' vocabulary acquisition. According Purnama et al (2020) support this by emphasizing how important it is to use technology in education to ensure more accurate and organized learning.

B. Suggestion

At the end of the research entitled “The Effectiveness of Kabitaru Application on Students' Vocabulary Mastery At Eleven Grade of SLB B Yakut Purwokerto” there are several suggestions as follows:

1. For the teacher
 - a) Teachers can use apps similar to the kabitaru app to support vocabulary acquisition learning in the classroom.
 - b) Teachers can create various activities in the learning process to attract students' interest.
 - c) Teachers can improvise and collaborate conventional and technology-based learning activities.
2. For another Research

Based on the results of this study, Kabitaru application is proven effective in improving the vocabulary mastery of deaf students. This result is in line with the findings of Melati et al., (2023) which showed that the use of technology in English language learning can increase students' motivation and skills in language. Therefore, future research is recommended to further explore the use of technology in various aspects of English language learning for the deaf.

C. Limitation of the Research

Based on the study that has been conducted, the following limitations:

- a) The application used is the Kabitaru application, which is classified as the latest pioneering idea in technology-based inclusive learning, so that there are still shortcomings such as not covering all the content of student needs.

- b) This research has time limitations so that the application of Kabitaru application in the learning process of vocabulary mastery is not fully optimized.



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APPENDICES



Appendix 1 Certificate of The Research



SEKOLAH LUAR BIASA BAGIAN ANAK TUNARUNGU SLB B YAKUT PURWOKERTO

Alamat: Jalan Kolonel Sugri No. 10 Telp (0281) 635972
Purwokerto 53116

SURAT KETERANGAN

NO. : 03.03/ Um /SLBB / 2025

Berdasarkan Surat dari Kementerian Agama Republik Indonesia, Universitas Islam Negeri, Profesor Kiai Haji Saifuddin Zuhri Purwokerto, Fakultas Tarbiyah dan Ilmu Keguruan dengan Nomor Surat : B.m. 035/Un.19/D.FTIK/PP.05.3/01/2025, Tertanggal 06 Januari 2025 , Hal : Permohonan Ijin Riset Individu. Menerangkan dengan sesungguhnya bahwa ;

Nama : Muhammad Iqbal riyansyah
NIM : 214110404091
Semester : 7 (Tujuh)
Jurusan / Prodi : Tadris Bahasa Inggris
Alamat : Tribuana 01/04, Kec. Punggelan, Kab.Banjarnegara

Mahasiswa tersebut di atas telah melaksanakan Riset di SLB B YAKUT Purwokerto, guna penyusunan Skripsi dengan Judul : " THE EFFECTIVENESS OF KABITARU APPLICATION ON STUDENTS' VOCABULARYMASTERY AT ELEVEN GRADE OF SLB B YAKUT PURWOKERTO".

Demikian Surat Keterangan ini dibuat dengan sebenar-benarnya, untuk dipergunakan sebagaimana mestinya.



Purwokerto, 10 Maret 2025

Kepala Sekolah,

Netti Lestari, S.Pd.

NIP. 19670109 199501 2 001

Appendix 2 Validation sheet

SURAT KETERANGAN VALIDASI INSTRUMENT PENELITIAN

Yang bertanda tangan dibawah ini :

Nama : Artika Wina Fitriani, M.Pd
Jabatan : Dosen
Instansi : UIN Prof. K.H. Saifuddin Zuhri Purwokerto

Setelah membaca, menelaah, dan mencermati instrument penelitian berupa soal tes yang akan digunakan untuk penelitian berjudul **"The Effectiveness of Kabitaru Application on Students' Vocabulary Mastery at Eleven Grade of SLB B Yakut urwokerto"** yang dibuat oleh :

Nama : Mohammad Iqbal Riyansyah
NIM : 214110404091
Prodi : Tadris Bahasa Inggris
Fakultas : Tarbiyah dan Ilmu Keguruan

Dengan ini menyatakan instrument tersebut,

- ☐ Layak digunakan
☒ Layak digunakan dengan revisi
☐ Tidak layak digunakan

Catatan (bila perlu)

soal no 1 perlu diganti, ~~dan~~ karena ada kesamaan materi dengan soal no 7.

Demikian keterangan ini dibuat untuk digunakan sebagaimana mestinya

Purwokerto, 6 Desember 2024

Validator



Artika Wina Fitriani, M.Pd

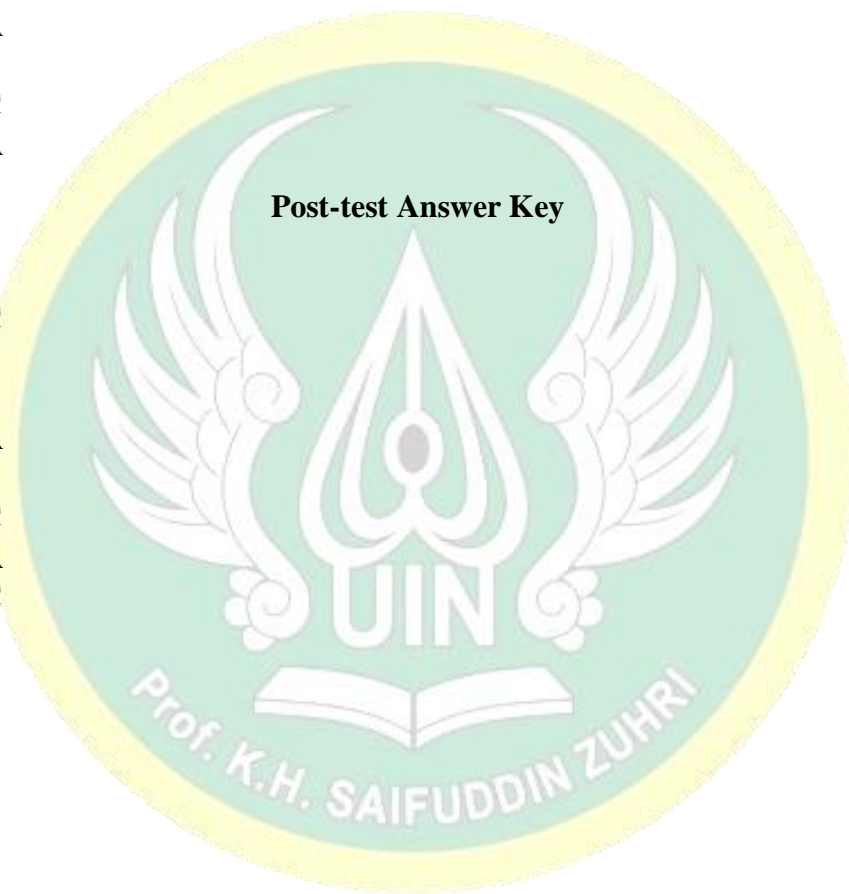
Appendix 3 Pretest and Post-test answer key

Pre test Answer Key

1. C
2. C
3. C
4. A
5. B
6. A
7. A
8. B
9. C
10. A

Post-test Answer Key

1. B
2. C
3. B
4. B
5. A
6. B
7. C
8. A
9. C
10. B



Appendix 4 Pre-test answer sheet

Nama : Daffa Awalludin

Kelas : ~~XISNA~~

Soal pre-test

Petunjuk: Lihat gambar dan pilih jawaban yang benar.



1.

Gambar: Dua orang sedang berjabat tangan.

Pertanyaan: Ketika bertemu teman, kita biasanya bilang...

- ~~a.~~ I am sorry
- b. Goodbye
- c. Nice to meet you



2.

Gambar: Orang sedang melambaikan tangan dari dalam mobil.

Pertanyaan: Saat berpisah dengan teman, kita biasanya bilang...

- a. Good morning
- b. Good evening
- ~~c.~~ Goodbye



3.

Gambar: Seseorang sedang tidur di dalam kamar.

Pertanyaan: Sebelum tidur, kita biasanya bilang...

- a. Good morning
- b. Good afternoon
- ☒ c. Goodnight



4.

Gambar: Seseorang sedang menundukkan kepala dan terlihat sedih.

Pertanyaan: Ketika kita melakukan kesalahan, kita bisa bilang...

- ☒ a. Please forgive me
- b. Good morning
- c. Good evening



5.

Gambar: Dua orang sedang berpisah di depan pintu.

Pertanyaan: Saat berpisah sementara dengan teman, kita biasanya bilang...

- a. See you
- ☒ b. Goodbye
- c. Goodnight

6.



Gambar: Matahari terbit di pagi hari.

Pertanyaan: Saat pagi hari, kita biasanya bilang...

- ☒ a. Good morning
- b. Good afternoon
- c. Good evening



7.

Gambar: kakak perempuan mengakui kesalahan

Pertanyaan: ketika kita berbuat kesalahan dan mengakui kesalahan itu kita bias bilang..

- ☒ a. This all my fault
- b. Goodbye
- c. Good morning



8.

Gambar: Matahari terbenam di sore hari.

Pertanyaan: Saat sore hari, kita biasanya bilang...

- a. Good morning
- b. Good afternoon
- ☒ c. Good evening



9.

Gambar: Bulan dan bintang di langit malam.

Pertanyaan: Saat malam hari, kita biasanya bilang...

- a. Good morning
- ☒ b. Good afternoon
- c. Good evening



10.

Gambar: Seseorang sedang mengakui kesalahan.

Pertanyaan: Ketika kita melakukan kesalahan, kita bisa bilang.

- ☒ a. Pardon me
- b. Good morning
- c. Good evening

Appendix 5 Post-test answer Sheet

Soal post-test

https://drive.google.com/drive/folders/1rfXqIoNuRNQuv_KHwJvDsZIVuNoJrkMR?usp=sharing

Nama : Dafra Awalludin

Kelas : XI SMA

1. Video seseorang mengisyaratkan Bahasa Inggris.
Apa Bahasa Inggris isyarat di dalam video?
 - a. Goodbye
 - ☒ b. Good morning
 - c. Goodnight
 - d. I am sorry
2. Video seseorang mengisyaratkan Bahasa Inggris.
Apa ejaan sederhana isyarat dalam video?
 - a. Gud nait
 - b. Gud bai
 - ☒ c. Gud afternun
 - d. Forgiv mi
3. Video seseorang mengisyaratkan Bahasa Inggris.
Apa Bahasa Inggris isyarat di dalam video?
 - a. Good night
 - ☒ b. Good evening
 - c. Goodbye
 - d. Good morning
4. Video seseorang mengisyaratkan Bahasa Inggris.
Apa ejaan sederhana isyarat dalam video?
 - a. Gud ivening
 - ☒ b. Nais to mit u
 - c. Si yu
 - d. Gud bai

5. Video seseorang mengisyaratkan Bahasa Inggris.
(Apa Bahasa Inggris isyarat di dalam video?)
- ☒ a. Goodbye
 - b. Good evening
 - c. I am sorry
 - d. Pardon me
6. Video seseorang mengisyaratkan Bahasa Inggris.
Apa ejaan sederhana isyarat dalam video?
- a. Gud nait
 - ☒ b. Si yu
 - c. Bai
 - d. Gud ivening
7. Video seseorang mengisyaratkan Bahasa Inggris.
Apa Bahasa Inggris isyarat di dalam video?
- a. Goodbye
 - b. Please forgive me
 - ☒ c. Good night
 - d. Pardon me
8. Video seseorang mengisyaratkan Bahasa Inggris.
Apa Bahasa Inggris isyarat di dalam video?
- ☒ a. I am sorry
 - b. Good night
 - c. That is all my fault

9. Video seseorang mengisyaratkan Bahasa Inggris.

Apa ejaan sederhana isyarat dalam video?

- a. Gud nait
- b. I em sorri
- ☒ c. Plis forgiv mi
- d. bai

10. Video seseorang mengisyaratkan Bahasa Inggris.

Apa Bahasa Inggris isyarat di dalam video?

- a. I am sorry
- ☒ b. Pardon me
- c. Good morning
- d. Good evening

Appendix 6 Documentation of research

