

**USING DIGITAL FLASHCARDS AS MEDIA IN TEACHING TO
IMPROVE STUDENTS' VOCABULARY ACHIEVEMENT**

Undergraduate Thesis

By

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**ENGLISH LANGUAGE EDUCATION STUDY PROGRAM
DEPARTMENT OF LANGUAGE AND ARTS EDUCATION
FACULTY OF TEACHER TRAINING AND EDUCATION
UNIVERSITY OF LAMPUNG
BANDARLAMPUNG**

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ABSTRACT

USING DIGITAL FLASHCARDS AS MEDIA IN TEACHING TO IMPROVE STUDENTS' VOCABULARY ACHIEVEMENT

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The objective of this study is to find out whether there is a significant improvement on students' vocabulary achievement after they were taught using digital flashcards. The population of this study was the 7th grade students of SMP IT Daarul 'Ilmi Bandarlampung and the samples were 24 students from class 7 of Ummu Salamah. A quantitative approach with a pre experimental one group pre-test post-test design was implemented. This research was conducted in five meetings with three meetings for the treatment. During the treatment, digital flashcards were used as a media in teaching vocabulary to the students. The data for this research were collected through the administration of a pre-test and post-test. According to the data, the mean of students' score improved from 71.25 in the pre-test to 83.13 in the post-test. Based on the data analysis by using Paired Sample t-test on SPSS application, the t-value is 9.922 at the significance level of 0.000. The result shows that the t-value is higher than the t-table ($9.922 > 2.069$). The findings of this study indicated that the use of digital flashcards as media in teaching significantly improved students' vocabulary achievement.

Keywords: *Digital Flashcards, Media in Teaching, Vocabulary Achievement.*

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**Submitted in a Partial Fulfillment
of the Requirements for S-1 Degree**

In

**The Language and Arts Education Department of
The Faculty of Teacher Training and Education**



**ENGLISH LANGUAGE EDUCATION STUDY PROGRAM
DEPARTMENT OF LANGUAGE AND ARTS EDUCATION
FACULTY OF TEACHER TRAINING AND EDUCATION
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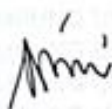
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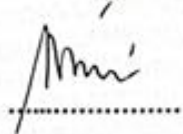


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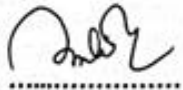
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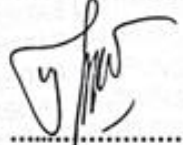
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Menyatakan bahwa skripsi ini adalah hasil karya dari pelaksanaan penelitian saya sendiri. Sepanjang pengetahuan saya, karya ini tidak berisi materi yang ditulis oleh orang lain, kecuali bagian bagian tertentu yang saya ambil sebagai acuan. Apabila ternyata terbukti bahwa pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab saya.

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CURRICULUM VITAE

The researcher's name is Tifalia Nur Amira. She was born on December 19th 1999 in Bandarlampung. She is the only daughter of Drs. Hafizul Muzarli and Sri Ruwianingsih, BBA. She has two older brothers, they are Fadilah Makmur Arif and Muhammad Adib Naufal.

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MOTTO

*God's mercy accepts us as we are,
But He loves us too much to let us stay the same.*

- A. Helwa, Secrets of Divine Love –

DEDICATION

In the name of Allah Subhanallahu Wa Ta'ala,
The Most Beneficent,
The Most Merciful.

This humble work is proudly dedicated to my beloved parents,
Ayah & Ibu.

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The author realizes that this work is still far from perfection. Therefore, comments, suggestions and constructive feedbacks are very welcomed for the better result. Hopefully, this research could contribute to the educational development and those who want to conduct further studies.

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The author,

Tifalia Nur Amira

TABLE OF CONTENTS

TABLE OF CONTENTS.....	xii
LIST OF TABLES	xiv
LIST OF APPENDICES	xv

I. INTRODUCTION

1.1	Research Background.....	1
1.2	Research Question.....	3
1.3	The Objective of The Study	4
1.4	The Uses of the Research	4
1.5	The Scope of the Research	4
1.6	Definition of Terms	5

II. LITERATURE REVIEW

2.1	Previous Research Overview.....	6
2.2	Vocabulary	8
2.2.1	Definition of Vocabulary	8
2.2.2	Types of Vocabulary	9
2.3	Vocabulary Achievement.....	9
2.4	Teaching Vocabulary	10
2.5	Media in Teaching.....	12
2.6	Digital Flashcards.....	13
2.6.1	Definition of Digital Flashcards.....	13
2.6.2	The Advantages and Disadvantages of Flashcards	14
2.7	Digital Flashcards Versus Paper Flashcards.....	15
2.8	Digital Flashcards as Media in Teaching Vocabulary.....	17
2.9	Procedure of Teaching Vocabulary by Using Digital Flashcards	18
2.10	Theoretical Assumption	19
2.11	Hypothesis	19

III. RESEARCH METHODOLOGY

3.1	Research Method	20
3.2	Population and Sample	21
3.3	Variable of the Research	21
3.4	Research Instrument	22
3.4.1	Validity and Reliability	22
3.5	Procedure of Research	27
3.6	Technique of Data Collection.....	29
3.7	Technique of Data Analysis	29

IV. RESULTS AND DISCUSSIONS

4.1	The Implementation of Digital Flashcards as Media in Teaching Vocabulary	31
4.1.1	The Results of Pre-Test	32
4.1.2	The Results of Post-Test	33
4.1.3	The Result of Normality Test.....	34
4.1.4	The Results of Hypothesis Testing	35
4.1.5	The Result of N – Gain	36
4.2	Discussion of Research Findings	36

V. CONCLUSIONS AND SUGGESTIONS

5.1	Conclusions	41
5.2	Suggestions.....	41

REFERENCES	43
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APPENDICES	46
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LIST OF TABLES

Table 1. Table of Distribution for Vocabulary Test Items	23
Table 2. Table of Specifications for Aspects of Vocabulary	24
Table 3. Distribution Frequency of Students' Pre-Test	32
Table 4. Distribution Frequency of Students' Post-Test	33
Table 5. Results of Normality Test	34
Table 6. Table of Paired Sample T-test.....	35
Table 7. Table of N - Gain Effectiveness.....	36

LIST OF APPENDICES

Appendix 1. Syllabus	47
Appendix 2. Lesson Plan	55
Appendix 3 Pre-Test	73
Appendix 4. Post-Test.....	78
Appendix 5. Results of Try Out Test	83
Appendix 6. Reliability Analysis of Try Out Test	84
Appendix 7. Paired Sample T-Test Analysis	85
Appendix 8. The Results of N – Gain Calculation.....	86
Appendix 9. Digital Flashcards.....	87
Appendix 10. Students' Answer Sheet of Pre-Test	90
Appendix 11. Students' Answer Sheet of Post-Test.....	92
Appendix 12. Documentation of the Research	94
Appendix 13. Surat Izin Penelitian (Research Permission Letter).....	95
Appendix 14. Surat Keterangan Penelitian (Research Statement Letter)	96

I. INTRODUCTION

1.1 Research Background

In teaching and learning English, there are four skills that should be covered, namely reading, listening, speaking and writing. Those four skills are supported by learning of language elements. They are structure, vocabulary, pronunciation, and spelling. Therefore, vocabulary becomes one of the most important language elements students should develop in order to be able to communicate properly.

According to Hatch and Brown (1995), vocabulary is the main foundation to build language which plays an essential role in communication. In the other words, vocabulary is very important in language building and is the main priority in learning English. Furthermore, Mamajonova and Rajapova (2022) mention that students should master an adequate amount of vocabulary in order to be able to communicate properly. Therefore, vocabulary plays a vital part in foreign language learning.

In addition, Wilkins (1972) states that without grammar little things can be conveyed, without vocabularies nothing can be conveyed. People can express their ideas and understand the other basic competence well by mastering the vocabulary. It means that the ability to communicate depends on the mastery of vocabulary. It is expected that students are able to understand simple English used in daily context through mastering the vocabulary first.

However, Ismail *et al.* (2022) stated that the students' ability to master English vocabulary is still low. This can be seen from the low score of the students' daily test results and oral tests by the teacher in the teaching and learning process in the classroom.

Since in Indonesia English is a foreign language, it is understandable that students often face the difficulty in acquiring the vocabularies. Therefore, an English teacher should create various media to improve student's vocabulary achievement.

On his research, Muhyiddin (2019) using flashcards to teach vocabulary to the students. The results proved that students get a good achievement in mastering vocabulary after they are taught by using flashcards. He mentioned that flashcards are effective to teach English, especially vocabulary, so it can be used by teachers to teach English to young learners.

According to Amiruddin and Razaq (2022), using flashcards to teach vocabulary is successful. The result of the research shows that students' vocabulary achievement improved dramatically after they are taught using flashcards. Teaching by using flashcards are considered effective to improve students' mastery on vocabulary. It means that using flashcards could be an answer in teaching vocabulary to the students.

Based on several study explained above, the researchers use flashcards which are printed in a paper as a media in teaching vocabulary. As the technological advancements have touched every aspect of our lives, we should consider the use of flashcards in a digital form. On their research, Dizon and Tang (2017) explained that learners prefer digital flashcards over paper flashcards. It is because the learners think digital flashcards is easy to use.

Furthermore, Yulsardi and Ratmanida (2021) mentioned that digital flashcards give a good effect on students' vocabulary mastery. This study compares between students who are taught by using digital flashcards with the students who are taught by using conventional media. The result shows that the students with the better scores is the ones who are taught by using digital flashcards.

Therefore, the researcher tries to find the effective solution in acquiring a new vocabulary through digital flashcards. Digital flashcards are chosen as a teaching learning aid to improve students' vocabulary achievement. It will make the students interested in studying vocabulary since they can see the colorful picture in digital flashcards. Digital flashcards are free, versatile, and easy to use and the researcher can develop his/her own digital flashcards.

Digital flashcards are helpful in the acquisition of new vocabulary words. A way to develop this is the teacher can make a set of pictures related more or less to one topic and create a situation in which the learners need to use at least some of the words they see.

To summarize briefly, digital flashcards can act as prompts, cues, and a non-verbal form of communication that bring much joy and give opportunities for students to remember the word easily. Digital flashcards are also one of the most common and popular media which is simple, and easy to learn. Therefore, the researcher tries to modify the common paper-based flashcards into digital-based flashcards.

1.2 Research Question

The focus of this study is figuring out the students' improvement in understanding vocabulary using digital flashcards. Based on the background, the research question of the study is:

- Is there any significant improvement on students' vocabulary achievement of SMP IT Daarul “Ilmi Bandarlampung after they are taught using digital flashcards?

1.3 The Objective of The Study

Based on the research question above, the researcher formulates the objective of this study as follows:

- To find out whether there is a significant improvement on students' vocabulary achievement of SMP IT Daarul "Ilmi Bandarlampung after they are taught using digital flashcards or not.

1.4 The Uses of the Research

In relation to the objectives of the research, the findings of the research may be useful both theoretically and practically as follows:

1. Theoretically

The result of this research might give some contributions in supporting the previous theories and contribute useful information for future research regarding the use of digital flashcards as media in teaching to improve students' vocabulary achievement.

2. Practically

The result of this research hopefully might be used as a consideration for English teachers to use digital flashcards in teaching-learning activity to improve students' vocabulary achievement.

1.5 The Scope of the Research

This research is a quantitative research dealing with the use of digital flashcards as media in teaching vocabulary. Furthermore, this research was implemented to the seventh-grade students of SMP IT Daarul 'Ilmi Bandarlampung. The focus area on this study is investigating the improvement of students' vocabulary achievement before and after they are taught using digital flashcards.

1.6 Definition of Terms

The researcher provides some keywords which are the important terms related to the research:

1. Vocabulary

Vocabulary is a set of words that a speaker of a language might use to communicate (Hatch and Brown, 1995).

2. Vocabulary Achievement

Vocabulary achievement refers to the level of proficiency and mastery an individual has attained in terms of their vocabulary knowledge and usage. Vocabulary achievement relates to how well a student understand the meaning and can apply a range of words in certain contexts.

3. Teaching Vocabulary

Teaching vocabulary is the process of delivering knowledge about vocabulary in several ways to ensure students get what they need.

4. Media in Teaching

Media in teaching is an intermediary tool for understanding the meaning of the material submitted by educator or teacher (Munadi, 2013).

5. Digital Flashcards

Digital flashcards are computer-based system flashcards which are designed for electronic devices (Yowaboot and Sukying, 2022).

II. LITERATURE REVIEW

This chapter presents the review of the related topic being discussed. To support the ideas of this research, some theories and some information will be included to help the researcher designs this research. In this chapter, the researcher mention several previous related research and describes definition of vocabulary, types of vocabulary, teaching vocabulary, media in teaching, definition of digital flashcards, advantage and disadvantage of flashcards, digital flashcards as media in teaching vocabulary, theoretical assumption and hypothesis.

2.1 Previous Research Overview

Many studies have been conducted regarding the use of digital flashcards to improve students' vocabulary achievement. More specifically, the previous research would be further explained below.

Yulsardi and Ratmanida (2021) conducted a study regarding the use of digital flashcards to find out whether or not the digital flashcards are effective to improve students' vocabulary. The research was conducted at SMPN 12 Padang with class of VII.3 as the experimental class and class of VII.9 as the control class. The result of the study shows that the students who are taught by using digital flashcards as media have better vocabulary mastery than the students who are taught by using conventional media. It can be seen from the scores of the pretest and posttest. The mean of the pre-test scores in the experimental class was 47.2 while the mean of the post-test scores in experimental class was 82.0. It can be concluded that teaching vocabulary by using digital flashcards is successful in improving students' vocabulary achievement.

Another previous study conducted by Yowaboot and Sukying (2022) which focus on the use of digital flashcards to enhance Thai EFL primary school students' vocabulary knowledge. This study involves two groups on the research, the experimental group and control group. The control group was taught using direct translation, the traditional method, while the experimental group was taught using digital flashcards. The result of the research shows that participants in both the control and experimental groups performed better on the post-test than the pre-test. However, the experimental participants performed significantly better than their control peers. These findings indicate that digital flashcards are an effective method to facilitate vocabulary learning to primary school learners.

In line with the previous study, Xodabande *et al.* (2022) explored the effects of using digital flashcards on learning academic vocabulary. The participants are 86 university students majoring in Psychology as two experimental conditions and one control group. The results indicated that mobile-assisted vocabulary learning using digital flashcards with built-in spaced repetition technology improved participants' academic vocabulary knowledge significantly from pre-test to the post-test, and that the participants in the experimental group outperformed the other groups on academic vocabulary knowledge. The findings of the research indicated that using digital flashcards provided the participants with the affordances to learn a considerable number of academic words frequently used in their disciplines

Considering the previous studies, digital flashcards can be used as a media in teaching vocabulary. In addition, the differences between this study and the previous one is that the researcher develops her own digital flashcards using PowerPoint Application to match the students' need.

2.2 Vocabulary

2.2.1 Definition of Vocabulary

According to Hatch and Brown (1995), vocabulary refers to a list or set of words for a certain language, as well as a list or set of words that a speaker of a language might use to communicate. It means that vocabulary is the word that is used to communicate by the speaker in a certain language.

Furthermore, according to Neuman and Dwyer (2009), vocabulary is defined as the words a person needs to know in order to communicate effectively; words in speaking (expressive vocabulary) and words in listening (receptive vocabulary). For that particular reason, vocabulary plays an essential role in language.

The other expert, Richards and Renandya (2002) also consider vocabulary as a core component of language proficiency which will influence how the learner speak, listen, read and write. This shows that without a proper strategy in acquiring new vocabulary, the learners will face some difficulties in using the language itself.

Finally, from the definitions above, it can be concluded that vocabulary is a set of words which are very important to be mastered by the learners in order to be able to communicate in a certain language. Vocabulary is considered as a fundamental element in language learning, it provides the basic needs for the learners on how they speak, listen, read and write.

2.2.2 Types of Vocabulary

According to Hatch and Brown (1995), there are two types of vocabulary. The first one is receptive vocabulary also called as passive vocabulary and the second is productive vocabulary known as active vocabulary.

a. Receptive Vocabulary

The words that the learner recognizes and understands in a certain context but which he cannot produce is called receptive vocabulary. In other words, receptive vocabulary refers to words that a person can comprehend and respond to, even when he cannot produce those words.

b. Productive Vocabulary

Productive vocabulary is the words which the learner understands also can pronounce correctly and use constructively especially in speaking and writing. Productive vocabulary basically determined by the number of words a person can write or speak.

In conclusion, receptive vocabulary knowledge means the capability to comprehend a word when the learner sees or hears it. On the other hand, productive vocabulary knowledge means the knowledge to produce a word when the learner can use it in their writing or speech.

2.3 Vocabulary Achievement

In understanding a language, vocabulary become an essential part to be achieved. According to Wijayanti (2016) achievement refers to the amount or level of learning that students acquired. Furthermore, it is explained that achievement is related to the test. The test is used to discover how successful students in achieving the objective of the course.

Vocabulary achievement is indicated by the amount of vocabulary the students mastered after joining the learning process. To master the vocabulary is to be able to grasp and employ the words and their meaning contextually. By having a good mastery of vocabulary, the students are able to communicate well and clearly with each other (Syarifudin *et al.*, 2014).

Vocabulary can be defined as a group of words mastered by the students after teaching and learning process. Mukti (2012) states that vocabulary mastery is the ability to use knowledge of words that are taught when students are learning a foreign language and it is not only understanding the meaning of words, but also having no difficulty in pronouncing, spelling, and using them in context.

The theory is in line with the aspects of vocabulary as an indicator to determine students' vocabulary achievement. According to Lado (1972), there are five aspects of vocabulary, they are meaning, spelling, pronunciation, word classes and word use. The students have achieved or mastered the vocabulary if they understand the meaning of the words, know how to spell and pronounce them and able to use the words contextually.

In this case, aspects of vocabulary that will be tested to the students are meaning and spelling. The reason for choosing those aspects is because it is appropriate with the material that will be taught using digital flashcards. Furthermore, meaning and spelling are those aspects that is suitable to measure students' vocabulary achievement in a written test.

2.4 Teaching Vocabulary

In order to be successful in teaching vocabulary, the teacher needs to identified the difficulties faced by the students. From the difficulties, the teacher could find the proper way to help the students learn vocabulary.

However, the teacher can use some techniques to reach their goals in teaching vocabulary. Cross (1991) proposes the procedure in teaching vocabulary which divided into three stages. They are presentation, practice and production.

1. Presentation

In this phase, there are four steps that can be followed in teaching vocabulary. There are sound and meaning, repetition, written form, and illustrative sentence.

a. Sound and Meaning

The teacher repeats the new words two or three times for their students. The students might also be shown the meaning and definitions of the words at the same time. The teacher must ensure that everyone in the class can clearly hear and understand what is being said.

b. Repetition

The teacher instructs the students to repeat the words a few times and also check their pronunciation. If a media is used in this step, the teacher needs to ensure that the whole class have a clear view to it.

c. Written Form

The teacher can write down the new words on the white board, then choose one to two students to read it aloud to their classmates. This step is to manage the students to associate the written form of the new words with its pronunciation.

d. Illustrative Sentence

After following the three steps above, in this stage the teacher can make an illustrative sentence to give an example for the students of the use of the new words in a sentence. The teacher can choose the simplest sentence in order to make the students understand the new words completely.

2. Practice

In the second phase, the teacher can give the students exercises in order to make them more familiar with the words that they have learnt. The teacher can ask questions to the students related to the new words that has been presented.

3. Production

After students are given some exposure to the new words, they are expected to master the vocabulary. As a result, in this step the students are expected to be able to use the new vocabularies in the speaking and writing activities.

2.5 Media in Teaching

Media come from the Latin language “medius”. It means middle, intermediary or companion (Matruty and Que, 2021). The meaning of media is something that delivers information (message) between message sender and receiver.

Kesumawati *et al.* (2022) state that media is a tool used to convey the message that the teacher wants to convey to students in order to achieve learning objectives. Teaching media means all tools which may be used by a teacher to deliver teaching material to students in teaching learning process.

According to Munadi (2013), teaching media is an intermediary tool for understanding the meaning of the material submitted by educator or teacher either print or electronic media and teaching media is also as a tool to facilitate the implementation of the components of the learning system, so that the learning process can last a longtime and effective.

In addition, Arsyad (2009) stated that teaching media is a media that bring instructional purpose of messages or information of learning. Media is means of expressing information. When the media brings instructional messages or information that contains learning purposes, it can be called as teaching media.

Meanwhile, Gerlach and Ely (1980) divide teaching media in wide meaning and narrow meaning. Media in wide meaning is people, material or event which can create condition so that students can get new knowledge, skill or attitude. In this meaning teacher, book, and environment is included in media. While media in narrow meaning is graphic, photo, picture, mechanic and electronic tools that use to express, process and also convey visual and verbal information. Teaching media is all physical form that can convey message and can stimulate students to learn.

Based on the definition above, it can be concluded that the media relates to technique, method in teaching and learning process. In other word, media is all aids or tools which may be used by teacher and learner to attain certain education objectives.

2.6 Digital Flashcards

This section will be divided into two parts which discuss about definition of digital flashcards and the advantages and disadvantages of flashcards.

2.6.1 Definition of Digital Flashcards

According to Haycraft (1978), flashcards is a card on which words or pictures are printed or drawn. Furthermore, he mentioned that there are two types of flashcards, word flashcards and picture flashcards. Word flashcards is a card on which words have been printed. When practicing word order, the teacher can use a number of cards representing all the

words in a sentence. On the other hand, picture flashcards are useful for presenting, practicing and revising vocabulary. Picture flashcards can be used as prompts for simple substitution drills. It can also help to identify verbs on actions.

Along with the development of technology, many researchers develop paper-based flashcards into digital flashcards. Several researchers have discovered that the use of digital flashcards to learn a language is helpful. Digital flashcards enhanced students' engagement in learning their discipline-specific academic vocabulary (Xodabande *et al.*, 2022).

According to Colbran *et al.* (2015), digital flashcards are flashcards that incorporates multimedia, data analytics, and a system of spaced repetition that coordinates the repeated access to the cards to enhance memory retention. The use of the paper-based flashcards can be extended by the use of technology which will help the students acquiring new vocabulary easily.

In addition, Yowaboot and Sukying (2022) defined digital flashcards as computer-based system flashcards which are designed for electronic devices and projectors. Furthermore, the researchers explain that this kind of flashcards can be created using PowerPoint or any other programs and applications.

2.6.2 The Advantages and Disadvantages of Flashcards

The advantages of flashcards are mentioned in Rahmasari (2016), as follows:

- a. Teaching English using flashcards is more interesting. The picture on the flashcards is colorful, it can catch students' attention by providing experience to enrich their visual element.

- b. Using flashcards as media creates variation in teaching. Flashcards is fun and it can be used through games which will make the learning experience more enjoyable.
- c. Flashcards are memorable. By showing flashcards, students can remember the word easily because they can see the real thing of the word on the picture which are new for them.
- d. Flashcards motivate students to be more active during the learning activity. Students are excited in using flashcards since they feel like learning by playing with cards.

On contrary, according to Wright as cited in Matruty and Que (2021) flashcards have some disadvantages, they are:

- a. Flashcards are not very effective because it cannot be used at all levels of vocabulary. Flashcards cannot be used to describe all kinds of vocabulary.
- b. Finding the flashcards that are suitable with the learning material is not easy. A teacher can make their own flashcards but it requires a lot of time as well as presenting the flashcards to the students.

2.7 Digital Flashcards Versus Paper Flashcards

According to (Dizon and Tang, 2017), the results of the research shows that the group of students with digital flashcards preferred their method of studying more than the group of students with paper flashcards. The findings indicate that the students were satisfied with the use of digital flashcards and would be less likely to switch to paper flashcards.

Digital flashcards and paper flashcards are both tools used for teaching and learning activity but they differ in format, features and benefits. Here is the comparison between two of them.

- **Digital Flashcards.**

Format: Digital flashcards are typically created and accessed on electronic devices such as smartphones, tablets, or computers. They can be in the form of apps, websites, or software programs.

Features:

1. **Portability:** Since they are stored on electronic devices, digital flashcards can be accessed anywhere as long as you have your device with you.
2. **Interactivity:** Many digital flashcard apps offer interactive features like spaced repetition algorithms, which adapt the frequency of card review based on your performance.
3. **Multimedia:** You can include images, audio, and even videos in digital flashcards, making them more engaging and enhancing the learning experience.
4. **Synchronization:** Many digital flashcard apps allow you to sync your cards across multiple devices, keeping your progress consistent.
5. **Progress Tracking:** Digital flashcard apps often provide statistics on how well you're doing and which cards you need to review more frequently.
6. **Sharing:** Some platforms enable users to share flashcard decks with others, fostering collaboration and community learning.

Benefits:

1. Convenience and portability for studying on the go.
2. Adaptive learning through features like spaced repetition, helping prioritize cards that need more review.
3. Multimedia integration for more diverse learning experiences.
4. Easy access to a wide range of online flashcard decks created by others.

- **Paper Flashcards**

Format: Conventional flashcards are physical cards made of paper or cardstock. They usually have the question or prompt on one side and the answer on the other.

Features:

1. Tactile Learning: Physically handling and flipping through flashcards can enhance the learning process for some individuals by engaging multiple senses.
2. No Distractions: Unlike digital devices, physical flashcards don't come with notifications or other digital distractions.
3. No Technology Dependency: You don't need electronic devices or an internet connection to use physical flashcards.
4. Personalization: Creating your own physical flashcards can be a more hands-on process that some learners find beneficial.

Benefits:

1. Tactile engagement can aid memory and learning for certain individuals.
2. No dependence on technology or potential digital distractions.
3. Can be a useful tool for quick review sessions.

2.8 Digital Flashcards as Media in Teaching Vocabulary

Media in teaching are used in order to help the teacher to explain the teaching materials (Rahmasari, 2016). There are a lot of media that a teacher can use. It could be in form of visual, audio or combination of both audio and visual. In teaching vocabulary as one of the important elements of language, a teacher needs a certain media to make it easier for the learners to acquire new vocabulary.

There are many kinds of media in teaching vocabulary and digital flashcards is one of them. Digital flashcards can be considered as a visual media. According to Weaver (1950), learning through visual material will be better than learning through explanation and description. It means that there are possibilities that digital flashcards will give a good impression on students. It helps the students enjoy the learning activity.

From the explanation above the researcher concludes that media is a tool to deliver a message from the teacher to the learners. In this research, the researcher will use digital flashcards as a teaching tool. Therefore, digital flashcards are chosen as visual aid in the teaching media because visual aid has important role in learning activity.

2.9 Procedure of Teaching Vocabulary by Using Digital Flashcards

According to Cross (1991), the procedures of teaching vocabulary can be divided into three steps, they are: a) Presentation. In this step, the teacher can use various techniques which are recommended in the previous discussion. However, the teacher has to be careful in selecting the topics in teaching activity; b) Practice. In the second step, the teacher gives exercises to the students in order to practice the subject items being learnt, making completion, matching, and words classification. These are several types of exercise that can be used by the teacher in this step; c) Production. In this step the students are expected to apply the newly learned vocabulary.

According to the vocabulary teaching procedure proposed by (Cross, 1991) above, it can be elaborated into four steps of procedures of teaching using digital flashcards adapted from Fauzia (2022), as follows:

1. The teacher presents the digital flashcards to the students and start the lesson by introducing the vocabulary using various instructional strategies.
2. Each student gets the opportunity to observe the digital flashcards, which contain images and brief explanations.
3. To practice with digital flashcards, the teacher can implement the digital flashcards into a game by dividing the students into several groups. The students are asked to match the images and words on the digital flashcards. The group with the most correct answers will be the winner.
4. Monitor students' progress and assess their understanding of the vocabulary by asking them question and conducting the discussion.

2.10 Theoretical Assumption

As explained above, vocabulary plays an essential role in language. As Neuman and Dwyer (2009) state that vocabulary also can be defined as words we must know to communicate effectively. It means that a learner should master the vocabulary in order to be able to communicate using a certain language.

In relation to giving the students' vocabulary knowledge, the teacher should present the new vocabulary through some interesting learning activities, so that they can motivate and encourage students. One of the ways that can gather students' interest into the classroom activity is using digital flashcards.

Digital flashcards can be used to improve students' vocabulary mastery. It can be implemented in many ways, and can be adjusted to the group of words that the students' need to know. Digital flashcards make the teaching and learning process become fun and less boring for the students, because it is visually eye-catching with a colorful picture.

2.11 Hypothesis

The hypothesis of the study can be written as follows:

- There is a significant improvement on students' vocabulary achievement of SMP IT Daarul 'Ilmi Bandarlampung after they are taught using digital flashcards.

III. RESEARCH METHODOLOGY

The research approach that was employed in this study is presented in this chapter. This chapter covers research method, population and sample, variable of the research, research instrument, procedure of research, technique of data collection, scoring system and also technique of data analysis.

3.1 Research Method

This study was conducted using quantitative approach. In this study, the researcher used pre-experimental design, with one group pre-test posttest design. It is because this design is used to reveal causal relationships by involving a single subject group without control group. The researcher conducted an experiment that consisted of a pretest, treatment, and post-test. This research design is illustrated as follows:

T₁ X T₂

The design can be described as follows:

T1 Pre-test

X Treatments

T2 Post-test

The researcher compared between the scores in the pre-test and the post-test to see whether the treatment has an effect or not on the students' vocabulary achievement. The aim of this research is to find out the differences between students' achievement on vocabulary before and after they are taught by using digital flashcards.

The students were asked to do the pre-test at the first meeting and continued with the treatment on the following meeting. The treatment was delivered in three meetings. Then, on the fifth meeting the researcher gave the post-test to the students. The pre-test and post-test were given to measure if there are any significant differences before and after the treatment.

3.2 Population and Sample

The research of this study was conducted at SMP IT Daarul ‘Ilmi Bandarlampung. In this research, the population were the 7th grade students from Junior High School of SMP IT Daarul ‘Ilmi Bandar Lampung. There are four classes of 7th grade students in SMP IT Daarul ‘Ilmi Bandarlampung.

In taking a sample from the population, the researcher used cluster random sampling technique. Cluster random sampling is a sampling technique where the population is divided into clusters or groups, and the random selection of clusters is made. In this research, class 7 of Ummu Salamah was chosen, therefore all the individuals within the class became the sample of the research. The sample for this research were 24 students from class 7 of Ummu Salamah.

3.3 Variable of the Research

There were two variables in this study, they were dependent variable and independent variable. In this study, the researcher considered students’ achievement in vocabulary as the dependent variable, because this variable is observed and measured to determine the effect of the independent variable. On the other hand, digital flashcards were categorized as an independent variable because this variable can influence or have the effect to the dependent variable.

3.4 Research Instrument

Instrument is an important tool to collect the data in a research. To collect the data, the researcher used one type of instrument in this research, it is vocabulary test. The test is used to measure the students' vocabulary achievement before and after the treatment. The vocabulary test was used as a pre-test and post-test. Total items of the test were 40 questions. The test is in the form of multiple choices that consists of 25 items which has four alternative answers (A, B, C and D), one of them is the correct answer and the others are distracters. The rest 15 items are jumbled word questions.

3.4.1 Validity and Reliability

In developing the instrument, the researcher needs to consider the validity and reliability of the test. The quality of the test will be said good if it has a good validity and reliability. The discussion of the validity and reliability of this research instrument will be provided below.

1. Validity

According to Setiyadi (2006), the validity of an instrument refers to which extent the test measures what should be measured. Furthermore, he explained that in foreign language teaching research, there are five types of validity. They are face validity, content validity, predictive validity, construct validity and concurrent validity. However, in this study, the researcher will focus on content validity and construct validity in establishing the quality of the instrument.

a. Content Validity

Content validity focuses on the items of the research instruments. Setiyadi (2006) stated that content validity is the extent to which the test represent the material to be measured. Furthermore, content validity is a

type of validity that assesses whether an instruments adequately covers the full range of content intended to be measured.

To fulfill the content validity of this research, the researcher checked all items of the instruments to analyze whether the test had respresented the whole material to be measured. The researcher has developed the test according to the syllabus of Junior High School for 7th grade students taken from the school curriculum of 2013 relating to the students needs. The distribution of the test items can be seen in the following table:

Table 1. Table of Distribution for Vocabulary Test Items

No	Questions	Item Number	Total	Percentage
1	Name of Job (Noun)	2, 5, 8, 11, 13, 14, 15, 16, 20, 24, 25, 26, 27, 28, 29, 30,	16	40%
2	Workplace (Noun)	1, 4, 6, 9, 19, 21, 23, 31, 32, 33, 34, 35.	12	30%
3	Activity (Verb)	3, 7, 10, 12, 17, 19, 22, 36, 37, 38, 39, 40.	12	30%
Total			40	100%

b. Construct Validity

Construct validity refers to whether the test is actually written based on theory of language to be measured. Construct validity evaluates whether the test item compatible with theories to be tested, which in this research is vocabulary. According to Setiyadi (2006), if the whole item of the test has tested vocabulary, then the test has filled the aspect of construct validity.

The vocabulary test consists of the question about meaning and spelling of the word. It is related with the aspects of vocabulary mentioned by Lado (1972). The aspects of vocabulary are meaning, spelling, pronunciation, word classes and word use. In this research, the aspects of vocabulary that were tested to the students are meaning and spelling. The reason for choosing those aspects is because it is appropriate with the material that will be taught using digital flashcards. Furthermore, meaning and spelling are those aspects that are suitable to measure students' vocabulary achievement in a written test. The test is compared to the table of specifications to identify whether the test has a good reflection of what was taught.

Table 2. Table of Specifications for Aspects of Vocabulary

No	Aspects of Vocabulary	Item Number	Total	Percentage
1	Meaning	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	25	62.5%
2	Spelling	26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40.	15	37.5%
Total			40	100%

After designing the test, the researcher evaluated all items of the test to check whether the test is actually valid to measure the vocabulary. Furthermore, the vocabulary test was also discussed with the help of experts. The experts assessed the relevance, representativeness, and clarify each item of the test. In addition, the test was validated by English teacher where the research was conducted.

2. Reliability

Reliability deals with the consistency of an instrument. Setiyadi (2006) state that reliability is the extent to which a test can measure the same subject in a different time yet still manage to produce a similar result.

There are two methods that are commonly used to measure the reliability of the test. They are test-retest reliability and internal consistency reliability.

Test-Retest Reliability assesses the consistency of scores when the same test is administered to the same group of individuals on two separate occasions. A high test-retest reliability indicates that the test produces similar results when taken at different times, assuming no changes in the participants' vocabulary knowledge have occurred.

On the other hand, internal consistency reliability evaluates the extent to which the items within a vocabulary test are internally consistent or measure the same underlying construct. It is commonly measured using Split-half reliability that involves splitting the test into two halves and correlating the scores obtained from each half.

In order to estimate the reliability of the test, this research used the Split-Half technique with Pearson Product-Moment formula to measure the coefficient of the reliability between the odd and the even groups.

$$r_{xy} = \frac{N (\sum xy) - (\sum x) (\sum y)}{\sqrt{\{N \sum x^2 - (\sum x)^2\} \{\sum y^2 - (\sum y)^2\}}}$$

In which

r_{xy} reliability coefficient between odd and even number items

N number of samples

x odd number items

y even number items

$\sum x$ total score of odd number items

$\sum y$ total score of even number items

After determining the reliability coefficient between odd and even number items (half reliability), the researcher estimated the reliability of the whole test using Spearman Brown's Prophecy formula, as follows:

$$r = \frac{2rx}{1 + rx}$$

In which

r refers to the reliability of the instrument

rx refers to the reliability of the half test

The criteria of reliability are as follows:

1. A very high reliability ranges from 0.80 to 1.00.
2. A high reliability ranges from 0.60 to 0.79
3. An average reliability ranges from 0.40 to 0.59.
4. A low reliability ranges from 0.21 to 0.39.
5. A very low reliability ranges from 0.00 to 1.20

The data gathered from the try out test was used to estimate the reliability of the instrument. In this research, the reliability of the instrument was determined using SPSS application. The result of the reliability test was 0.88 (see Appendix 5). According to the categorization above, it means that the test has a very high reliability. Therefore, it can be concluded that the instrument is reliable.

3.5 Procedure of Research

The procedures of conducting this research are as follows:

1. Administering the Pretest

The pre-test was conducted before the treatment. This test is aimed to know students' vocabulary achievement before they are taught using digital flashcards. The test was 25 items of objective test and 15 items of jumbled word questions which took 40 minutes to finish.

2. Conducting Treatment

After administering the pretest, the researcher conducted the treatment. The treatment consisted of three meetings in total which took about 80 minutes for each meeting. During the treatment, the researcher taught vocabulary about job and profession using digital flashcards.

The researcher developed digital flashcards using PowerPoint application. Each of slide consisted of a picture and a word or the vocabulary describing the picture. Besides, the researcher also added a sound on how to pronounce the word which will help students to know the pronunciation.

On the first meeting, the researcher introduced various kinds of job and profession using digital flashcards to the students. Then, the researcher gave further explanation which consisted of the work place and the job description for each of the profession. During that time, the researcher asked the students to ask questions and conducting a discussion related to the topic.

On the next meeting, a game was conducted. This game helps the students to memorize the new word easily because they do not learn the

word purposely. The researcher created a situation where the students use digital flashcards to memorize the word unconsciously.

In conducting the game, the researcher divided the class into 2-4 groups. Each group was given five minutes to play the game. A way to play this game was in turn, one student came to the front of the class as the representative of the group. She was shown one digital flashcards. After that, she described the word to the groupmates. If her groupmates can guess it, they will get a point.

On the last meeting of the treatment, the researcher reviewed the material learned from last week. After that, the researcher provided a worksheet for the students to work on. This worksheet is expected to help students make a simple spoken interaction text and understand the material deeper.

Students needed to ask their friends about their parents' profession then write it down on the worksheet. The students needed to ask questions to at least five of their friends to finish the worksheet. After that, the teacher invited the students to the front of the classroom one by one to describe the profession they have written down on the worksheet.

3. Administering the Posttest

On the last meeting the post-test was conducted. It is aimed to see students' vocabulary achievement after they are taught using digital flashcards, whether there are some improvements or not. The post-test was administered for about 40 minutes. In line with the pre-test, the post-test was about job and profession. The test was multiple choices that consisted of 25 items and 15 items of jumbled word questions regarding letters arrangement.

4. Analyzing the Data

After conducting pre-test and post-test, the researcher got the data of students' scores. This data was analyzed using Paired Sample T-Test. It is used in order to know whether digital flashcards could help students' to improve their vocabulary achievement or not. If there is an increase in the scores of the post-test, it means that digital flashcards give a good effect to the students' vocabulary achievement.

3.6 Technique of Data Collection

In this research, the data collected is quantitative which were gathered from the tests. There are two tests conducted in this research, they are pre-test and post-test.

In the first meeting, the researcher administered the pre-test to the students. The test consisted of 40 items. The first 25 items were an objective test and the rest 15 items were jumbled word questions.

On the last meeting students were asked to do the post test. The test consisted of 40 items. The first 25 items were an objective test with four alternative answers (A, B, C and D). The rest of the test was 15 items of jumbled word questions.

3.7 Technique of Data Analysis

After gathering data through tests, the researcher analyzed the data using Paired Sample T-Test of Statistical Program for Social Science (SPSS) in order to know whether there is an improvement in students' vocabulary achievement from the result of pre-test and post-test. The researcher analyzed students' vocabulary achievement by conducting these processes, they are:

- a. Scoring the pretest and posttest. In determining the score of the pretest and posttest, the researcher used the formula proposed by (Arikunto, 1997) as follows:

$$S = \frac{R}{N} \times 100$$

Where:

S is the score of the test

R is total correct answers

N is the total of items

- b. After that, the data from the scores of the pre-test and post-test were analyzed using SPSS program with the analysis of Paired Sample T-Test in order to know whether there is a significant difference in students' vocabulary achievement before and after the treatment.
- c. Finally, by analyzing the data, the researcher can make the conclusion whether the use of digital flashcards can improve students' vocabulary or not. The result of descriptive statistics can be seen from the mean of the pre-test and post-test. If the post-test scores are higher than the pretest, it means that students' vocabulary achievement are improved. Furthermore, the inferential statistics which is determined by using t-test analysis will show whether the improvement is statistically significant or not.

V. CONCLUSIONS AND SUGGESTIONS

In this chapter, the researcher presents the conclusions regarding the results of the research which have been reported and discussed in the previous chapter. Furthermore, the researcher provides some suggestions as contributions in teaching and learning activity.

5.1 Conclusions

According to the research findings, it can be concluded that there is a significant improvement on students' vocabulary achievement after they are taught using digital flashcards. It can be seen from the students' scores that rises from pre-test to the post-test. Digital flashcards have proven to be incredibly useful in the teaching of vocabulary, providing an engaging and efficient media for learning. The use of picture on digital flashcards not only help students to connect new words with their prior knowledge but also stimulate their brain to the contextual understanding, enhancing retention and comprehension. Furthermore, the convenience of digital flashcards allows students to access it anywhere and anytime and it is adaptable to students' individual learning styles. Overall, digital flashcards as media in teaching significantly improve students' vocabulary achievement. Digital flashcards offer a valuable and convenient resource that enhances vocabulary learning and contributes to the academic success of students.

5.2 Suggestions

According to the research findings, there are some suggestions for the future researchers and teachers in developing the educational fields, as follows:

1. It is suggested to the teacher to use technology in a form of digital flashcards in teaching and learning process. By implementing technology in form of digital flashcards, students will realize that learning is way more flexible. Students can learn and memorize the new words by looking at the flashcards anywhere and anytime as long as they have the device with them. It means that the learning process is not limited in the classroom only, students get a lot more time to learn the new vocabulary.
2. The researcher suggests English teachers to use digital flashcards in a creative way. The teacher should not only present digital flashcards to the students but to implement digital flashcards in various way of learning activity. Creating a fun activity using digital flashcards will help students to engage with the words and acquire the new vocabulary easily.
3. In this research, the researcher developed digital flashcards using Power Point Application. For further research, the researcher suggests to utilize another application such as Quizlet. This application is easy to use and it has so many features to create the flashcards. By using Quizlet, the researcher can develop his/her own digital flashcards that might be more suitable with the students' need. However, Quizlet also provides the ready-to-use digital flashcards. In addition, Quizlet offers several options for the learning mode.
4. This research was conducted in Junior High School level. Therefore, future researcher can try to apply digital flashcards in another level of students, such as Senior High School. The researcher could examine the same topic in the other school to find out the differences in the findings.

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