INCREASING EFL LEARNERS' VOCABULARY ACHIEVEMENT OF THE FIRST GRADE STUDENTS AT SMAN 7 BANDAR LAMPUNG USING DIGITAL FLASHCARD BASED GAMES

(Undergraduate Thesis)

By

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ENGLISH EDUCATION STUDY PROGRAM
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ABSTRACT

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By

VARRA HELGA ADREA PATRICIA

The aim of the research was to find out there was a significant increase of the students' vocabulary achievement after the implementation of digital flashcard based games. The research was quantitative approach. The design used was one group pre-test and post-test. The sample consisted of 35 students in class X-4 of SMA Negeri 7 Bandar Lampung. The instrument was vocabulary test. The data were in the form of scores taken from the pre-test and post-test. The results showed that the students' vocabulary score gain was 24.65 from 59.35 in the pre-test to 84.00 in the post-test. The data were analysed by using Paired Sample t-test. The results showed that t-value score was 0.00 that means there was a significant increase of students' vocabulary achievement since t-value < 0.05. The results of digital flashcard based games can make students interested in the teaching and learning process. It is because the media was easy to apply. It can be concluded that digital flashcard based games increased students' enthusiasm in learning vocabulary.

Keywords: *digital flashcard, games, vocabulary achievement*

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The Requirements for S-1 Degree

In

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Faculty of Teacher Training and Education

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DEPARTMENT OF LANGUAGE AND ARTS EDUCATION
FACULTY OF TEACHER TRAINING AND EDUCATION
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2023

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Menyatakan bahwa skripsi ini adalah hasil karya 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.

Bandar Lampung, 22 November 2023

Yang membuat pernyataan,

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CURRICULUM VITAE

Varra Helga Adrea Patricia was born in Bandung on January 2nd, 2002. She is the first child of three children of Matheus Bayu Wahyudi and Sri Hertati. She has a sister, Zaara Ayla Audre Patricia, and a brother, Qeano Daffa Cesario.

She started her study at SD Negeri 2 Beringin Raya. After graduating from elementary school in 2013, she continued her study at SMPN 14 Bandar Lampung. She graduated from junior high school in 2016. Then, she continued her study at SMAN 7 Bandar Lampung. During her study in senior high school, she joined the English Club, and became the leader in 2017. She graduated from senior high school in 2019. In the same year, she was registered as a student of English Education Department at University of Lampung.

While studying at University of Lampung, she joined SEEDS (Society of English Education Department Students) in 2020. She became the head of Media Center Division in 2021. She also had an opportunity to teach and help learning activities in SDN 1 Negeri Olok Gading using Kampus Mengajar 3 (2022).

To complete her study, she conducted her research by using digital flashcard based games as a tool to increase students' vocabulary achievement in the first grade students at SMAN 7 Bandar Lampung.

MOTTO

"If you act rightly, it is for your own good, but if you do wrong, it is to your

own loss"

QS. Al-Isra : 7

DEDICATION

I dedicate this thesis to:

My beloved parents, Matheus Bayu Wahyudi and Sri Hertati. Thank you for all
the support, both morally and materially, love, and all the prayers.

My beloved sister and brother, Zaara Ayla Audre Patricia and Qeano Daffa
Cesario. Thank you for the support.

My beloved lecturers and my almamater, University of Lampung.

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10. All friends's research: Katrine, Sarah and Anastasia thank you for the challenging times that have been spent together.

11. All friends of the English Department 2019, thank you for their support and motivation.

Finally, the writer realizes that this script still has some weaknesses. Therefore, critics and suggestions are needed for enhancement of this script. Hopefully, this

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script can give good contribution to the readers or those who want to carry out further research in the same realm.

Bandar Lampung, November 22nd, 2023
The Writer,

Varra Helga Adrea Patricia
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I. INTRODUCTION

This chapter explains about background of the research, question of the research, objective of the research, the uses of the research, scope of the research, and definitions of terms.

1.1 Background of the Research

In Indonesia, English is learned as a foreign language. Indonesian students learn English from elementary school to high school, even up to university level. However, many students find difficulties in understanding English as a foreign language, one of the difficulties is in term of vocabulary. According to Richard and Renandya (2002), vocabulary is the core component of language proficiency and it provides a lot of the basis for how well learners read, write, listen, and speak. Because of that, students need to learn about vocabulary.

Vocabulary is essential thing to be taught in English as a foreign language classroom, because it will be impossible to speak without variety of words (Ur, 1996). According to Thornbury (2002), without grammar, very little can be said, but without vocabulary, nothing can be communicated. It means that it will be useless if someone who has good grammar but does not know the vocabularies.

For students at senior high school, vocabulary achievement is not an easy thing to do. Teachers should have effective and interesting teaching methods or techniques. Songs, games, and problem solving activities are the examples of effective and interesting teaching methods (Saricoban, 2000). This is a fact based on the researcher's experience while studying in senior high school students only master basic vocabulary. The problem is that it is too difficult for students to master advanced vocabulary, because students really have to master what vocabulary is with synonyms for basic vocabulary. Previously basic vocabulary was vocabulary that was understood by many people regardless of their proficiency in English, while advanced vocabulary was professional and academic vocabulary written in formal language. Therefore, achieving basic vocabulary is not enough. In this research, the researcher wanted to increase the students' vocabulary achievement to a higher level.

Flashcard is a card with picture on it, and comes with the word. There are various types of images on flashcard, such as animals, fruits, foods, shapes, colours, numbers, alphabet, abstract words and so on. Flashcard can help English teachers in teaching vocabulary. Colourful flashcard can attract students' interest and motivation to increase their vocabulary. Komachali and Khodareza (2012) stated that the use of flashcard might be more effective than word list.

According to Sarah (2018), there are several points that teachers need to be considered in order to use flashcard in productive and successful way;

1. Teacher should understand the good and interesting topic for learners. The teacher should use a real object or flashcard when the teacher gives a new vocabulary to young learners.

2. When the teacher uses a flashcard in classroom, the teacher should always be able to point out the purpose. The learners should understand or get the point of the materials.

3. The length and timing of the flashcard are very important. The teacher should focus on the length and timing in the classroom. How many times teacher should repeat the flashcard and others.

4. Not only from the flashcard can be helpful for teaching and learning process, but also the teacher and the learners are more helpful. The teacher should have questions for learners. It makes learners more interested in teaching and learning process. If the teacher is quiet enough in the classroom, classroom activity can not be interesting for learners.

Technology plays an important role in society today. Technology affects the way people work, study, learn, communicate, think, and reflect. As the effect of technological progress, it makes teacher easier in preparing and creating learning media. Smartphone, laptop, or computer can be used in teaching and learning process. According to Nashir and Laili (2018), the combination of flashcard and the use of computer are called as digital flashcard, since the technology development makes everyone easier in designing media for teaching, thus flashcard used in this research are not in the form of papers but flashcard based computerization.

The researcher wanted to know whether the use of digital flashcard in senior high school could increase vocabulary achievement or not. The researcher used vocabulary at a higher level that was unfamiliar to the students, with the aim of looking at the effectiveness of digital flashcard in increasing vocabulary.

In this research, the researcher uses digital flashcard as a media to increase students' vocabulary achievement. Byrd and Lansing (2016) stated that the combination of flashcard and the technology development have proven to be helpful in achieving vocabulary in second language and recall their memory. Teachers can create the digital flashcard as much as flashcard they want. Digital flashcard are easy to be saved and durable. Also, teachers can create digital flashcard faster than paper flashcard.

In 2017, Dizon and Tang conducted their research in comparing the efficacy of digital flashcard (DFs) versus paper flashcard (PFs) to improve receptive and productive second language (L2) vocabulary. Based on the findings, the PFs and DFs group were able to make improvements in receptive and productive vocabulary, the gains made within each group were not significantly different. Both methods have been found to be equally effective. But, the participants in their research preferred to use digital flashcard over paper flashcard in order to improve their vocabulary.

Setyoningsih (2016) stated that it is essential to adequately acquire information, science, and technology in this digitalization era. Because this era has the characteristics of receptiveness, direct opposition, interdependence among the nations, and rapid information spread of language and culture. The mastery of a

foreign language becomes a primary necessity for inter–lingual and intercultural communication. In other words, in order to survive and compete in this era, people are required to be proficient in at least one foreign language, especially English with the aim of expanding the use of foreign languages.

The researcher considered this research useful for increasing students' English vocabulary of first grade students at SMAN 7 Bandar Lampung. The researcher expected that teaching English using digital flashcard can manage the classroom effective in achieving English vocabulary.

1.2   Question of the Research

The problem of this research is focused on the following research question:

1)   Is there any significant increase on students' vocabulary achievement after being taught using digital flashcard based games?

1.3   Objective of the Research

Based on the research question above, the objective of this research is to find out whether there is a significant increase on students' vocabulary achievement after being taught using digital flashcard based games.

1.4 The Uses of the Research

The researcher expects the result of this research can give benefits in many aspects as follows:

1. Theoretically

   The result of this research is expected to increase students' vocabulary achievement.

2. Practically

   The result of this research is expected to help students learn English vocabulary in a better way. Furthermore, it is expected to inspire other teachers to increase their students' vocabulary achievement using digital flashcard based games as a teaching media.

1.5 Scope of the Research

This research was conducted using quantitative approach with an experimental design. The focus of this research was on students' vocabulary achievement consists of noun, verb, adjective, and adverb. The subject of this research was the first grade students of SMAN 7 Bandar Lampung. The students did the pre-test and post-test, consist of 40 multiple choice questions. The researcher conducted the pre-test and post-test to find out whether there was a significant increase on students' vocabulary achievement after being taught using digital flashcard based games or there was no significant increase on students' vocabulary achievement after being taught using digital flashcard based games.

1.6 Definition of Terms

The key terms that mostly appear in this research are:

1. EFL Learners

    EFL Learners are learners who learn English as their second language or learning English in a country that does not communicate using English. In this study, the EFL learners were tenth grade students from SMAN 7 Bandar Lampung.

2. Vocabulary

    Vocabulary is the core component of language that has meaning and significance. According to Hatch and Brown (1995), vocabulary is a list or set of words for a particular language or a list or set of words that individual speakers of language might use. In this study, the researcher focused on content words, which are; verb, noun, adjective, adverb.

3. Teaching Vocabulary

    Teaching vocabulary is process of giving the material about vocabulary to the learners. According to Susanto (2017), teaching vocabulary is considered as one of the most discussed parts of teaching English as a foreign language.

4. Games

    Tuan & Doan (2010) stated that games are powerful tools for language learning and should be used at every level of the process. Teaching English using games is used to enhance students in their studies, they maintain effort and attention while entertaining the class. In this study, the researcher used

three kinds of game, which are whisper game, flashcard riddles, and kim's game.

5. Digital Flashcard

   Digital flashcard are digital cards that provide images, words or phrases, or number. It is very useful in teaching and learning process, because colourful flashcard can attract students' interest to learning English. The short content in digital flashcard makes it easier for students to learn English vocabulary.

II. LITERATURE REVIEW

This chapter explains about previous studies, English as a foreign language, vocabulary, media in teaching and learning process, games, flashcard, advantages and disadvantages, theoretical assumption, and hypothesis.

2.1 Previous Studies

There have been several studies dealing with teaching English vocabulary using digital flashcard that have been conducted by other researchers.

Nashir and Laili (2018) conducted a study that researched students' vocabulary mastery using electronic flashcard. In their research, the development and the progress of vocabulary mastery can be viewed from the students' vocabulary mean score in pre-test was 58.24. Then, in cycle I the result of vocabulary mean score was 70.05, and in cycle II the mean score of students' vocabulary test increased into 77.30. Moreover, the total number and the percentage of students who got score minimum 70 were also increased. In pre-test there were only 18 students who got score minimum or more than 70. In cycle I students who got score more than 70 were 26 students, and improved in cycle II as many as 30 students.

Supriatin and Rizkilillah (2018) also conducted their research in teaching vocabulary using flashcard. The method that they used in their research was experimental method with pre-experimental design. In their research, the students

got difficulties in vocabulary comprehension. The students achievement before being taught by using flashcard their achievement in vocabulary comprehension was fair because the mean of the total score of 29 students is 66.21. After they applied vocabulary learning using flashcard to the students, the students' vocabulary achievement was very good because the mean of total score of 29 students was 79.55. Based on the finding, it can be concluded that the flashcard is helpful to improve students' achievement in learning vocabulary

Moreover, Andalas (2019) conducted her research to assess students' vocabulary mastery. Her research was a classroom action research with three instruments; vocabulary test, observation checklist, and interview. The subject in the research were 26 students consist of 16 male and 10 female. The results of her research show that flashcard teaching strategy was effective to improve students English vocabulary mastery. Her research was conducted in three cycles which include planning, action, observation, and reflection. The score distribution can be seen as follows:

Score Interval	Category
86 – 100	Excellent
71 – 85	Good
56 – 70	Low
< 55	Very Low

(Andalas, 2019)

In pre-assessment, the students' score were low. There was 7.7% (2 students) in good category, 26.9% (7 students) in low category, and 65.4% (17 students) in very low category. In cycle I, the category of students' score in vocabulary test consisted of 26.9% (7 students) in good category, 50% (13 students) in low category, and 23.1% (students) in very low category. In cycle II, the category of students' score

in vocabulary test consisted of 11.6% (3 students) in excellent category, 34.6% (9 students) in good category, and 53.8% (14 students) in low category. Then, in cycle III, the category of students' score in vocabulary test consisted of 30.8% (8 students) in excellent category, 53.8% (14 students) in good category, and 15.4% (4 students) in low category.

Cycle	Mean Score
Pre-assessment	58.5
Cycle I	65.4
Cycle II	73.6
Cycle III	83.1

Based on the findings, the table above showed that there was improvement. Flashcard teaching strategy could increase the students' interest in learning English vocabulary. Teaching English using flashcard can facilitate the students to be creative and being motivated in teaching and learning process.

In addition, Leonardus *et al.* (2018) conducted his research in improving students' vocabulary using flashcard. The method that he used was Classroom Action Research (CAR) which consists of Planning, Acting, Observing, and Reflecting. His research was done in two cycles in order to get better result of the research. Based on his analysis of the students' learning, the students' vocabulary achievement was improved, the existence of flashcard made the students familiar with certain words. The students could memorize the words easily. The students showed better result in the process of learning vocabulary. That was proved by the result of the mean score 59,210 (first cycle) to 74,210 (second cycle). Based on the finding, the researcher assumes that teaching vocabulary using flashcard can

involve the students in the process of teaching and learning activity and improve their vocabulary.

2.2   English as a Foreign Language

Harmer (2007) described EFL is a situations where the students learn English to use it with other English speakers. According to Madya (2002), a good achievement of English can help accelerate the development of the country for two major reasons. The first reason is the development should be supported by the achievement of science and technology. The second reason, English is one of the international language used for various international communication purposes trading, diplomacy, politics, and education. In teaching English as a foreign language, there are several problems.

Dardjowidjojo (2000) state that there are two problem factors in teaching and learning process, the class sizes and the teachers with poor achievement of English. Musthafa (2010) also mentioned several factors of the problem. The first is limited amount of time for teaching English. The second is the students do not have time to learn to speak English in the class because the teachers only focus on the grammar. The third is the absence of good learning materials. The last is the students do not use English outside the classroom.

2.3   Vocabulary

Vocabulary is the main component in learning English. Vocabulary learning is necessary for learners to acquire a lot of words in order to use the vocabulary in any

needs, especially in academic. Vocabulary is an important thing in language building, we can express anything easily by mastering vocabulary.

There are some definitions of vocabulary according to the experts. Hatch and Brown (1995) defined vocabulary as a list or set of words for particular language, individual speaker of a language might use. Neuman and Dwyer (2009) also stated that vocabulary refers to the words that someone must know in order to communicate effectively.

According to Scrivener (1994), there are five roles of vocabulary:

a) Vocabulary is very important and must be dealt with systematically its own right

b) The readers must differentiate between vocabularies for productive use and receptive recognition

c) It will be difficult for learners to finish the assignment, if they have recently learned some new vocabularies

d) The readers need to deal with longer and multi word items, not only with a single word lexical item

e) The learners must be trained in the use of English-English dictionaries provides with a vital tool for self-study

2.3.1 Types of Vocabulary

Haycraft (1978) stated that vocabulary is divided into two types, there are active and passive. Active vocabulary is a word that is already known by students and it is commonly used by students. Passive vocabulary is a word that is that is already known by students, but they can not use the words yet.

In addition, Finnochiario (1974) stated that vocabulary is the content and function words of language which is learned so thoroughly, so they can be used in any communication.

Content words are divided into four types, such as verb, adverb, noun, and adjective.

1.   Verb is a word that tells the action, for example *study*, *word*, *run*, and so on.

2.   Adverb is a word that tells about how, when, or where something happens. Adverb is divided into five types, there are adverb of time, adverb of manner, adverb of place, adverb of degree, and adverb of frequency.

   a)   Adverb of time provides additional information about time. For example *now*, *yesterday*, *tomorrow*, *later*, and so on

   b)   Adverb of manner provides additional information about the condition or how the event happened. For example *quickly*, *sadly*, *politely*, *loudly*, and so on

   c)   Adverb of place provides additional information about a place. For example *here*, *there*, *above*, *below*, *inside*, *outside*, and so on

   d)   Adverb of degree explain about the level or intensity of verb, adjective, or adverb. For example *too*, *almost*, *quite*, *just*, and so on

   e)   Adverb of frequency provides information about how often the frequency of activity occurs. For example *always*, *rarely*, *never*, *normally*, *sometimes*, and so on

3.   Noun is a word that tells the object. For example person, place, or thing.

4.   Adjective is a word that describes objects, person, or thing. For example *big*, *beautiful*, *amazing*, and so on.

Function words are divided into eight types, such as determiners, conjunctions, pronouns, preposition, modals, qualifiers, auxiliary verbs, and question words.

1. Articles are used to define a noun in specific or unspecific. The examples of articles are a, an, and the

2. Conjunctions are used to connect two or more words, phrases, or clauses. The examples of conjunctions are and, but, yet, or, so, however, as, because, and so on

3. Pronouns are used to replace a noun in sentence. Types of pronouns are:

    a) Possessive pronouns, for example mine, yours, his, hers, ours, and theirs

    b) Personal pronouns, for example I, you, they, we, she, he, it, me, us, and them

    c) Relative pronouns, for example who, whom, which, what, and that

    d) Reflexive pronouns, for example myself, yourself, itself, ourselves, themselves, herself, and himself

    e) Intensive pronouns, for example myself, yourself, itself, ourselves, themselves, herself, and himself

    f) Indefinite pronouns, for example anyone, everybody, somebody, nothing, and so on

    g) Demonstrative pronouns, for example that, those, this, and these

    h) Interrogative pronouns, for example who, whom, what, which, and whose

    i) Reciprocal pronouns, for example each other, one another, and so on

j)   Singular pronouns, for example I, she, he, it, one, this, someone, anyone, and so on

k)   Plural pronouns, for example they, we, them, us, ourselves, themselves, those, these, many, several, and so on

4.   Prepositions are words used before noun, pronoun, or noun phrase to show the location or direction. The examples of prepositions are in, at, on, between, among, and so on

5.   Modals are words used to express condition. The examples of modals are can, could, may, might, will, shall, would, and should

6.   Qualifiers actually have no real meaning. But, qualifiers are used to show the degree of adjectives or verb. The examples of qualifiers are very, too, quite, really, and so on

7.   Auxiliary verbs are words used to express distinctions or tenses, aspects, mood, and so on. Types of auxiliary verbs are:

a)   To be. For example is, am, are, was, were, being, been, and will be

b)   To have. For example has, have, had, having, and will have

c)   To do. For example does, do, did, and will do

8.   Question words are words used to ask for something. The examples of question words are what, when, where, why, who, and, how

2.3.2   Aspects of Vocabulary

In learning English vocabulary, the learners must know the aspects of vocabulary. According to Lado (1961), the aspects of vocabulary are meaning, spelling, pronunciation, word classes, and word use.

1. Meaning

    The learners must know the meaning of the word so that it can make it easier for the learners to use it

2. Spelling

    Spelling can help the learners in reading activity, because it can strengthen the connection between letter and sound. Teachers must guide the learners to spell and pronounce the English words correctly. Sometimes, the learners can not spell the English words correctly because some words are pronounced differently from what are written.

3. Pronunciation

    Pronunciation is difficult to learn, spelling and pronunciation are not related. Some words only have one pronunciation, but sometimes a word has two or more than two pronunciations.

4. Word classes

    Word classes are categories of words, such as verb, adverb, noun, prepositions, and adjective

5. Word use

    Word use is how to use the word in a language.

2.4 Media in Teaching and Learning Process

Media is form of communication that delivers information. According to Criticos (1996), media is a tool used to transfer messages or information from resource to receiver. In addition, Naz and Akbar (2008) stated that teaching and learning are process influenced by a variety of factors, including the use of media or

instructional aids. They also mentioned that media is method of delivering messages or delivering information to learners in order to achieve the effective instruction in teaching and learning process.

2.4.1 Types of Media

According to Hikmah and Hannan (2019), media has three types, there are visual media, audio media, and audio visual media. In this research, the researcher only focuses on visual media.

Visual media is a type of media that conveys messages using visual representations of verbal communication symbols. The symbols mean that they need to be understood, so the process of delivering messages can be efficient and effective. There are several types of visual media:

1. Pictures

   Photographs, postcards, flashcard, book illustrations, and study prints are pictures that commonly used. The pictures can help to translate abstract ideas into a more realistic format. They can come from drawing, magazine, postcards, flashcard, photographs, and so on. In language teaching, pictures can be used as media to teach vocabulary, speaking, and writing. For example in vocabulary, learners can identify the name of each pictures then the teacher asks them to make sentences from the words in the pictures

2. Board

   Whiteboard, magnetic board, and flannel board are examples of board media. Teachers can write the information or materials in whiteboard. Magnetic board can be used as bulletin board, it also can be used for presentation,

teaching aids, and so on. Flannel board is also known as felt board. It can help learners explore stories using their imagination, and can expand their creativity with shapes, colours, and objects.

3. Textbook

Textbook is defined as a logical systematic presentation of printed materials concerning a specific branch of field of study. The advantages of textbook are as a guide for teachers in teaching process and to improve teacher skills in organizing lesson material. Textbook is also used as an individual learning tool for learners.

4. Newspaper and magazine

Newspaper and magazine are printed mass communication media with a role and influence in the general public. The functions of newspaper and magazine are to provide warm and current reading material, containing the latest information that attracts public attention, including clipping materials that can be used as display material for bulletin board. Newspaper and magazine also can improve vocabulary, critical reading skills, and discussion skills.

5. Comics

Comics are type of storytelling with funny drawing series. Comic stories are simple and easy to understand that are popular with children and adults. Comics are classified into two types based on their function. The first is commercial comics that are much more needed in the marketplace, because commercial comics are more personal, provide rude humour, use conversational language, and have simplicity of morals. The second is educational comics that provide informative content, widely distributed by

industry. Comics can be used as media to improve vocabulary and find phrases that can be used in daily conversations.

6. Computer

Computer has all the function that teacher needs, such as audio, PowerPoint, and so on. Computer can be used as a word processor so learners can sit around screen and type a text. Also, it is used as a tool for material designed for English speaking, games, CD with workbooks, interactive listening material, and so on. Furthermore, computer provides an internet connection, it can help learners practice speaking and writing English from people around the world.

2.4.2   Media Technology

Media technology refers to any software, hardware, or tool that can be used to create, produce, deliver, and manage media such as video, image, audio, information, and so on. There are several types of media technology:

1. Augmented Reality

Augmented reality combines information, media, user interfaces and virtual entities with elements from the real world. This may involve creating electronic replicas of real-world objects and places.

2. Dynamic Content

Dynamic content refers to media that changes based on data and user interaction

3. Multimedia

Multimedia refers to a representation of information in attractive and interactive way with the use of a combination of text, video, audio, and animation

4. Digital Media

Digital media is media that is distributed using electronic devices. Electronic devices can be used to create, view, modify, and distribute this type of media. Digital media commonly used are software, videos, websites, social media, online advertising, and so on

2.5 Games

Games have many benefits toward language learning. Teachers can use games to build a meaningful and practical context for the language. Students can participate fully and receptively in the whole teaching and learning process using games. Games provide a fun element to any language education, give students goals to aim for and require then to follow rules. Tuan & Doan (2010) stated that games are powerful tools for language learning and should be used at every level of the process.

Teaching English using games is used to enhance students in their studies, they maintain effort and attention while entertaining the class. According to wa (2022), teaching vocabulary by using games has an important role for teachers and high school students. First, as students, they have a strong and good motivation to deepen their English. Second, they easily accept English because they learn by playing games, which is currently growing and developin in Indonesia. Third, teaching

English vocabulary by using games can help teachers in teaching and learning process.

2.6   Flashcard

Flashcard are cards that provide images, words or phrases, and number, it is very useful in teaching and learning process. Colourful flashcard can attract students' interest to learn. The short content in flashcard makes it easier for students to learn English vocabulary.

According to Scrivener (1994), teachers can use flashcard;

- to show the meaning of vocabularies
- to give visual images or presentations of language
- to tell a story
- as tools for storytelling activities
- as tool for variety of games, and so on

Haycraft (1978) stated that there are two types of flashcard, word flashcard and picture flashcard.

1. Word Flashcard

   Word flashcard are cards with words printed on it.

2. Picture Flashcard

   Picture flashcard are cards with pictures printed on it. Picture flashcard are very useful for presenting and practicing vocabulary. Students will be interested if the pictures on the flashcard are colourful, attractive, and large so the whole class can see the pictures.

2.7   Digital Flashcard

Başoğlu and Akdemir (2010) conducted a study on the use of digital flashcard versus paper flashcard with a group of L2 English students at Turkish University. Both groups were able to make significant gains, the digital flashcard group made greater significant improvements.

According to Nashir and Laili (2018) using digital flashcard in teaching vocabulary could stimulate right brain response; maximize photographic memory, trains students' concentration, increase students' vocabulary, control students' creative and subconscious mind. In addition, digital flashcard also helps students move any information and idea into long term memory because before understanding the language, talk, and read, they learn by seeing first. It means that students will easily keep in mind what they see when learning, especially in learning vocabulary.

2.8   Activities Using Digital Flashcard

According to Jannah (2020), teachers can do some activities in the classroom using digital flashcard in teaching English vocabulary.

1.   Flash

In this activity, teacher introduces the new words by showing the flashcard quickly, the students will identify the words on the flashcard.

2.   Slowly – slowly

In this activity, teacher will close the flashcard and gradually reveal the flashcard. Then, the students will identify the pictures on the flashcard as soon as they recognize it.

3. What's missing?

In this activity, teacher will show the flashcard on the board and ask the students to repeat the words on the flashcard. After that, the teacher asks the students to close their eyes, teacher will remove one flashcard, then the students will open their eyes, and teacher ask the, "what's missing?", students will identify the missing flashcard.

4. Magic eyes

In this activity, teacher will show five or more flashcard on the board in a row, teacher will ask the students to repeat the word in rhythmic way, then teacher will remove the first flashcard and continue with the same rhythmic way, then remove the second flashcard and do the same until the last flashcard. This activity will help the students train their memory using representation picture of the word.

5. Lip reading

In this activity, teacher will show some flashcard on the board, then the teacher mentions one of the flashcard without sound, the students will guess the word by recognize teacher's lip.

6. Flashcard riddles

In this activity, teacher will show some flashcard on the LCD projector, and mention the characteristic of the picture on the flashcard, then the students will guess what the teacher means.

7. Flashcard groups

In this activity, the teacher will divide students in small groups, and name the group based on the flashcard. After that, teacher will give the instruction by

mention their groups' name, so students will pay attention and listen to the instruction given by the teacher.

8. Hands on heads

In this activity, teacher will divide the class into two groups and assign them four or more flashcard, then mention word that belong to a group. After that, they are asked to respond it by putting their hands on heads.

9. Flashcard chain

In this activity, teacher will ask the students to sit in a circle then pass a flashcard to the first student and ask relevant question about the flashcard. After that, teacher will move the flashcard to the next student and ask relevant question in the same way. After a flashcard pass three students, then teacher will introduce to another flashcard and do the same way until all flashcard are complete.

10. Whisper Game

In this activity, teacher ask the students to make a group consists of $4 - 5$ students. The group representative from each group will get different vocabulary from the teacher. Then, the first person in group whispered the vocabulary to another students' ear, and passed it further until the vocabulary reached the final student and write the vocabulary on whiteboard.

11. Kim's game

In this activity, teacher will show 12 to 15 flashcard on the board with different topics and ask the students to remember those flashcard in one minute. Then, teacher will remove all flashcard and ask the students to write down what flashcard they remember and categorize the topics of flashcard.

Sarah (2018), there are several points that teachers need to be considered in order to use flashcard in productive and successful way;

1. The teacher should understand the good and interesting topic for learners. The teacher should use a real object or flashcard when teaches a new vocabulary to young learners.

2. When the teacher uses a flashcard in classroom, the teacher should always be able to point out the purpose. The learners should understand or get the point of the materials.

3. The length and timing of the flashcard are very important. The teacher should focus on the length and timing in the classroom. How many times teacher should repeat the flashcard and others.

4. Not only from the flashcard can be helpful for teaching and learning process, but also the teacher and the learners are more helpful. The teacher should have questions for learners. It makes learners more interested in teaching and learning process. If the teacher is quiet enough in the classroom, classroom activity can not be interesting for learners.

2.9 Advantages and Disadvantages

In this research, the researcher used digital flashcard as media in teaching vocabulary. Digital flashcard can give advantages as well as disadvantages in teaching and learning vocabulary.

2.9.1 Advantages

Digital flashcard provide images, words or phrases that can attract students' interest. It can help students in achieving vocabulary. According to Jannah (2020),

the use of flashcard can be a creative and enjoyable technique to help students remember the vocabularies. Learning English using flashcard can increase students' motivation to learn. Flashcard might be helpful in the teaching and learning process and give stimulus to students in achieving vocabulary.

2.9.2 Disadvantages

Besides some advantages of using digital flashcard in teaching English, there are also some disadvantages in teaching English using digital flashcard. The teacher must organize and choose the words before create the digital flashcard. Also, the teacher must prepare a laptop and LCD projector to show digital flashcard during the lesson.

2.10 Theoretical Assumptions

In this era, basic vocabularies may not be sufficient. Students need more advanced vocabularies to be able to cope up and survive in this era. However, according to the observation before conducting the research, the researcher found the learning activities did not attract the students and they were not motivated enough during the lesson. Thus, the researcher come up with several assumptions of why the students were not enthusiastic. First, the method that the teacher used in teaching and learning process does not attract students' interest. Second, lack of motivation and confidence to learn English.

According to Leonardus *et al.* (2018), an interesting media that can be used to teach vocabulary to learners is flashcard. Learners can improve their vocabulary easier

by using flashcard. The teacher can make learners enjoy and active in learning process.

The researcher tried to use digital flashcard in increasing EFL learners' vocabulary because the researcher assumes that digital flashcard can attract students' interest and motivation to learn English. Short contents in flashcard make it easier for learners in learning English vocabulary. This research applied to the students of senior high school level.

2.11   Hypothesis

Reffering to the background of problem, the researcher formulated the hypothesis as follows:

H_1 : There is a significant increase on students' vocabulary achievement after the students are taught using digital flashcard.

III. METHODOLOGY

This chapter explains about research design, variables, population and sample, instruments of the research, validity and reliability, procedures of the research, data collecting techniques, level of difficulty, discrimination power, scoring system, and data analysis.

3.1 Research Design

This research was conducted using quantitative approach. According to Kothari (1990), quantitative research is based on measurement of quantity.

The purpose of this research is to find out whether there is any improvement on students' vocabulary achievement in the aspect of meaning after being taught using digital flashcard. In order to answer the research question, this research used the one group pre-test and post-test design. The formula can be seen as follows:

$$T1 \; x \; T2$$

Notes :

T1 : Pre-test for students' vocabulary achievement before the treatment is given
T2 : Post-test for students' vocabulary achievement after the treatment is given
X : Giving treatment (improving students' vocabulary using digital flashcard)

<div align="right">(Setiyadi, 2018)</div>

The researcher conducted the treatment by using digital flashcard. The treatments were given for three meetings. The researcher distributed the pre-test before the treatments, in order to see the students' vocabulary achievement before treatments were given. Then, the researcher distributed the post-test after the treatment to find out students' vocabulary improvement after being taught using digital flashcard.

3.2 Variables

This research consists of two variables, such as:

1. EFL learners' vocabulary achievement as dependent variable (Y)

   It is categorized as dependent variable (Y) because EFL learners' vocabulary achievement is based on output of the activity. The learners' vocabulary achievement can be measured to determine whether or not there is an effect of the independent variable.

2. Digital flashcard as independent variable (X)

   It is categorized as independent variable (X) because digital flashcard is variable that can influence EFL learners (dependent variable) to determine the effect between phenomenon and the object.

3.3 Population and Sample

3.3.1. Population

The population of this research was the students at the first grade of SMAN 7 Bandar Lampung.

3.3.2. Sample

The sample of this research was the first grade students. They were the students at 10-4 class, consist of 35 students. Sampling technique used in this research was purposive sampling.

3.4 Instrument of the Research

Instrument is a tool for collecting data. The instrument of this research was vocabulary test (pre-test and post-test).

The researcher conducted vocabulary test about content words; noun, verb, adjective, and adverb. There were 40 questions and each question had four alternative answers; a, b, c, and d, then the students have to choose the right answer. The researcher determines the words to be used by discussing with English lecturer and English teacher at SMAN 7 Bandar Lampung.

The purpose of the test is to measure students' knowledge and ability in English vocabulary. The pre-test was given before conducting the treatment. And the post-test was given after the researcher conducted the treatment.

3.5 Validity and Reliability

The quality of the instrument is said to be good if the test has good validity and reliability. The researcher conducted the try-out test with 50 questions to measure the quality of the test. In this research, the researcher used the result of the try-out test to measure the validity, reliability, level of difficulties, and discrimination power.

3.5.1. Validity

Hatch and Farhady (1982) stated that a test can be said valid if the test measures the object to be measured and each indicator as a whole represent the material to be measured. According to Setiyadi (2018), there are five types of validity of measuring the instrument in foreign language teaching research; 1) Face Validity, 2) Content Validity, 3) Predictive Validity, 4) Construct Validity, and 5) Concurrent Validity. In this research, the researcher used content validity and construct validity to measure the validity of the test.

a. Content Validity

According to Brown (2000), if a test actually samples the subject matter about which conditions are to be drawn, if it requires the test-taker to perform the behavior that is being measured, it can claim content validity. Content validity ensures that the measurement includes an adequate and representative set of items that reveal the concept. The more the scale items reflect the area or overall concept being measured, the greater the content validity.

The test could be said in line with the material when it is given during conducting the treatments. The test considered as valid in content validity since the test of vocabulary was chosen based on English Curriculum for first grade student of senior high school.

b. Construct Validity

Construct validity concerns with whether the test is actually in accordance with the theory of vocabulary, to know whether the test is a true reflection of theory of vocabulary achievement. According to Setiyadi (2018), if the questions have

measured the vocabulary, the test has fulfilled the construct validity. In this research, the researcher made the questions related to the type of vocabulary; 1) noun, 2) verb, 3) adjective, and 4) adverb.

Table 3.1. Specification of Construct Validity

No.	Word Types	Items	Total	Percentage
1	Noun	5, 6, 9, 12, 13, 16, 19, 24, 28, 29, 31, 34, 39	13	33%
2	Verb	3, 4, 8, 30, 32, 35, 38	7	17%
3	Adjective	1, 7, 10, 14, 20, 22, 23, 25, 27, 33, 36, 40	12	30%
4	Adverb	2, 11, 15, 17, 18, 21, 26, 37	8	20
	Total		40	100%

Based on the table above, the test consisted of 40 items that related to the content word which is divided into noun, verb, adjective, and adverb.

3.5.2. Reliability

Reliability refers to the extent to which the test is consistent in its score, and gives an indication of how accurate the score of the test is. Reliability of the test can be defined as the extent to which a test produces consistent results when administered under similar condition (Hatch and Farhady, 1982). To measure the coefficient reliability between the first half and the second half items, the researcher used formula (Pearson Product Moment) as follows:

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

Notes:

r_{xy} : Coefficient of reliability between odd and even numbers item
x : Odd number
y : Even number

$\sum x^2$: Total score of odd number
$\sum y^2$: Total score of even number
$\sum xy$: Total score of odd and even number

The researcher used the formula to calculate the reliability of vocabulary test in order to know the items were reliable.

The Reliability Computation of the Try-Out Test

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

$$r_{xy} = \frac{7099}{\sqrt{(7143)(7361)}}$$

$$r_{xy} = \frac{7099}{\sqrt{52579623}}$$

$$r_{xy} = \frac{7099}{7251.18}$$

$$r_{xy} = 0.97$$

$$(\textbf{\textit{High Reliability}})$$

After the researcher found the value of the reliability of the half test, the researcher determined the reliability of the whole test using formula (Spearman Brown) as follows:

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

Notes :

r_k : The reliability of the whole test
r_{xy} : The reliability of the half test

The criteria of reliability can be seen as follows:

0.90 – 1.00 : High
0.50 – 0.89 : Moderate
0.0 – 0.49 : Low

(Arikunto, 2006)

The Reliability of the Whole Test

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

$$r_k = \frac{2\,(0.97)}{1 + 0.97}$$

$$r_k = \frac{1.94}{1.97}$$

$$r_k = 0.98$$

$$(\textbf{\textit{High Reliability}})$$

Based on the result, it is found that the items of the try-out test have high

reliability, that is 0.98.

The Reliability Computation of the Pre-test

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

$$r_{xy} = \frac{5250}{\sqrt{(5557)(5098)}}$$

$$r_{xy} = \frac{5250}{\sqrt{28329586}}$$

$$r_{xy} = \frac{5250}{5322.55}$$

$$r_{xy} = 0.98$$

$$(\textbf{\textit{High Reliability}})$$

The reliability of the whole test :

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

$$r_k = \frac{2\,(0.98)}{1 + 0.98}$$

$$r_k = \frac{1.96}{1.98}$$

$$r_k = 0.98$$

$$(\textbf{\textit{High Reliability}})$$

Based on the result, it is found that the items of the pre-test have high reliability, that is 0.98.

The Reliability Computation of the Post-test

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

$$r_{xy} = \frac{10015}{\sqrt{(9350)(10906)}}$$

$$r_{xy} = \frac{9989}{\sqrt{101971100}}$$

$$r_{xy} = \frac{9989}{10098.07}$$

$$r_{xy} = 0.98$$

$$(\boldsymbol{High\ Reliability})$$

The reliability of the whole test :

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

$$r_k = \frac{2\,(0.98)}{1 + 0.98}$$

$$r_k = \frac{1.96}{1.98}$$

$$r_k = 0.98$$

$$(\boldsymbol{High\ Reliability})$$

Based on the result, it is found that the items of the post-test have high reliability, that is 0.98.

3.6   Data Collecting Techniques

In collecting data, the researcher conducted vocabulary test about content words. There were 40 questions with four alternative answers for each question. The purpose of the vocabulary test was to measure students' vocabulary achievement.

3.6.1. Pre-test

The researcher distributed the pre-test to find out the learners' vocabulary achievement before the treatments were given to the learners'. There were 40 questions about content words; noun, verb, adjective, and adverb, with four alternative answers; a, b, c, and d.

Table 3.2 Pre-test Specification

No.	Word Types	Items	Total	Percentage
1	Noun	5, 6, 9, 12, 13, 16, 19, 24, 28, 29, 31, 34, 39	13	33%
2	Verb	3, 4, 8, 30, 32, 35, 38	7	17%
3	Adjective	1, 7, 10, 14, 20, 22, 23, 25, 27, 33, 36, 40	12	30%
4	Adverb	2, 11, 15, 17, 18, 21, 26, 37	8	20
	Total		40	100%

3.6.2. Post-test

The researcher distributed the post-test to find out the learners' vocabulary achievement after the treatments were given to the learners. Same with the pre-test, there were 40 questions in the post-test about content words; noun, verb, adjective, and adverb with four alternative answers; a, b, c, and d.

Table 3.3 Post-test Specification

No.	Word Types	Items	Total	Percentage
1	Noun	1, 2, 4, 5, 16, 17, 18, 24, 29, 32, 34, 38, 40	13	33%
2	Verb	15, 20, 21, 28, 31, 33, 35	7	17%
3	Adjective	3, 6, 7, 9, 14, 19, 23, 25, 26, 30, 36, 37	12	30%
4	Adverb	8, 10, 11, 12, 13, 22, 27, 39	8	20
	Total		40	100%

3.8 Level of Difficulty

Level of difficulty is used to classify the test items into difficult and easy items. The items should not be too difficult or too easy for the learners. To check the difficulty level of the test items, the researcher used formula as follows;

$$LD = \frac{R}{N}$$

Notes :

LD : Level of Difficulty
R   : The number of students who answer correctly
N   : The total number of students following the test

The criteria are:
<0.30   : difficult
0.30 – 0.70   : average
>0.70   : easy

(Shohamy, 1985)

There are the criteria of level of difficulty; easy, average, and difficult. From the computation of level of difficulty (Appendix 8), there were 6 items that have results less than 0.30, it means that the items were difficult. There were 17 items that have results more than 0.70, it means that the items were easy. And 27 items that have results between 0.30 – 0.70, it means that the items were average.

3.9 Discrimination Power

Discrimination power (DP) refers to the extent to which the items are able to distinguish high and low level students on the test. To know the discrimination power of the test, the researcher used formula as follows:

$$DP = \frac{U - L}{\frac{1}{2}\,N}$$

Notes:

DP   : Discrimination Power
U   : The total of correct answer of the higher group
L   : The total of correct answer of the lower group
N   : Total number of students
The criteria are:
DP   : 0.00 – 0.19   Poor
DP   : 0.20 – 0.39   Satisfactory
DP   : 0.40 – 0.69   Good
DP   : 0.70 – 1.00   Excellent
DP   : - (Negative) Bad items (should be omitted)

The criteria are:

1. If the value is positive discrimination, a large number or more knowledgeable students than poor students get the item correct. If the value is zero, it means that there is no discrimination.

2. If the value is negative, it means that more low students then high level students get the item correct.

3. In general, the higher, the discrimination index, the better. In the classroom situation, most items should be higher than 0.20 indexes.

(Shohamy, 1985)

There were the criteria of discrimination power; poor, satisfactory, good, and excellent. From the computation of discrimination power (Appendix 8), 9 items were poor, 30 items were satisfactory, 9 items were good, and 2 items were excellent.

Based on the table of discrimination power, 9 items were omitted ; 12, 14, 15, 16, 18, 21, 33, 34, 41. The researcher took 40 items out of 50 items to be administered in the pre-test and post-test.

3.10 Scoring System

In this research, the scoring system that the researcher used was dividing the right answer by total items timed 100. In scoring the pre-test and post-test, the researcher used formula as follows:

$$S = \frac{R}{N} \, x \, 100$$

Notes:

S   : Score of the test
R   : Number of right answer
N   : Total number of items on a test

(Arikunto, 2006)

3.11 Data Analysis

After collecting the data, the researcher analyzed the data in order to know whether there is any increase on students' vocabulary achievement after being taught using digital flashcard. The steps are as follows:

1) Scoring pre-test and post-test.

$$S = \frac{R}{N} \, x \, 100$$

Notes:
S   : Score of the test
R   : Number of right answer
N   : Total number of items on a test

(Arikunto, 2006)

2) Calculating the mean of pre-test and post-test.

$$\overline{X} = \frac{\sum x}{n}$$

Notes :

X   : Average score

$\sum x$: Total score of students

n   : Total number of students

(Arikunto, 2006)

3) The researcher analyzed the data using SPSS (Statistical Program for Social Science) version 23 with the analysis of Paired Samples T-Test in order to know whether there is a significant increase on students' vocabulary achievement after the treatments were given.

3.12 Hypothesis Testing

The researcher analyzed the data to find out whether there is a significant increase on students' vocabulary achievement after being taught using digital flashcard. The researcher analyzed the data by using Paired Sample T-Test to find out whether there is a significant increase on students' vocabulary achievement after the treatments were given. The hypothesis of this research can be seen as follows:

$$H_1 = t < 0.05$$

H_1 : There is a significant increase on students' vocabulary achievement after being taught using digital flashcard.

V. CONCLUSION AND SUGGESTIONS

This chapter explains the conclusions based on the results of the research and explains some suggestions for English teachers and other researchers.

5.1   Conclusion

After the researcher conducted research and obtained data at SMA Negeri 7 Bandar Lampung, which had been analysed in the previous chapter, it can be concluded that the implementation of digital flashcard based games was good for increasing students' vocabulary achievement. Based on the results of the tests and analysing the data, there was an increase in students' vocabulary achievement after the implementation of the digital flashcard based games. It could be seen from the increase in students' vocabulary scores in the pre-test and the post test was 24.65 from 59.35 in the pre-test to 84.00 in the post test. Thus, it can be concluded that the treatments using digital flashcard based games as the teaching media were carried out successfully. The implementation of digital flashcard based games could increase students' vocabulary achievement. In addition, digital flashcard based games can make students interested in the teaching and learning process. It is because the media was easy to apply, and students loved it. It can be concluded that digital flashcard based games increased students' enthusiasm for teaching and learning vocabulary.

5.2   Suggestions

Considering the result of the research, the researcher would like to give some suggestions as follows:

1. For English teachers, the researcher suggests to use digital flashcard as an alternative way in teaching vocabulary. Since the use of flashcard can increase students' vocabulary achievement also can motivate the students' to increase their vocabulary achievement with new vocabularies.

2. The researcher used digital flashcard as a media with words based on types of vocabulary; noun, verb, adjective, and adverb for the first grade of senior high school. The researcher suggests for further researcher to make sure that the words they use are in accordance with what are being taught in the class. Also, for further researcher can use diverse words based on other kind of themes at different level of students. On one hand, the games that were used in this research did not involve flashcard that much. Thus, it is suggested for future researchers to utilize flashcard maximally in the games they carry out.

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