

Using Digital Flashcards (DFs) as Learning Media to Enhance Students' Speaking Skill

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Abstract

The aim of this study was to investigate the effect of using digital flashcards (DFs) on improving junior high school students' speaking skill. This study used pre-experimental design in one class which are given test before and after treatment. The researcher gathered the data by providing pre-test and post-test which were formulated the speaking test about describing person. The sample of this study was seventh grade of Public School in Gresik. The result of this study indicated that the utilize of digital flashcards (DFs) is effective to enhance students' speaking skill in junior high school. It was proven by the calculation of the data that there was a difference between the pre-test and post-test scores. The mean score was 38.15 in the pre-test and 49.57 in the post-test, thus the average found is in the large effect category (0.625). The result also showed significant progress among four criteria assessment by IELTS under investigation, *pronunciation* (0.629) and *lexical resource* (0.623) were the most increased after the treatment of digital flashcards (DFs). In conclusion, the current study suggests the digital flashcards media can be applied towards junior high school level to improve students' speaking skill.

Keywords: *Digital flashcards; Speaking Skill*

1. Introduction

Speaking is the crucial skill in learning language and communicating with others. Speaking defines a productive skill of developing meaning that covers to convey, to accept and to tabulate the information (Brown H. Douglas & Abeywickrama Priyanvada, 2018; Cole et al., 2007; Luoma, 2004). Speaking skill refers to the capacity to communicate thoughts, ideas, and feelings to a listener through speech sounds or words (Lutfi, 2020; Ramdhani, 2022). When students practice speaking activities there are some aspects that must be possessed, those are the acquisition of fluency, pronunciation, vocabulary, and understanding for oral communication in the classroom context (Brown, 2003).

However, many learners are still unable to effectively communicate orally in English. Speaking is challenging since it occurs impulsively with little opportunity for in-depth thought. The challenges of teaching techniques, ideas to convey, terminology that expresses the idea, and speaking chances are among the many reasons why learning to speak English is tough. Because they are not native English speakers, most international English learners, particularly those from the Asian area, struggle with a similar issue. Another barrier to engaging in speaking activities is a lack of speaking experience, appropriate technique, and English-speaking motivation. (Mashwani & Damio, 2022). Furthermore, a lot of EFL students struggle with speaking nervousness. In general, students experience anxiety when they participate in speaking exercises in front of the class, including on-site or spontaneous performances, which can startle them and make them feel too anxious when they are not prepared to do so. (Bashori et al., 2022).

In order to solve the problem, teacher can use some media to support and to encourage the students' interest in learning activity (Wardrip & Shapiro, 2016). As well as media has been proven to be able to help learning in class more effectively than not using any tools. Alotumi (2021) states that develop a learning by using a fascinating medium, students



might be inspired to learn English, particularly speaking. The introduction of new media in the classroom may provide a remedy for the issue facing the educators. Teachers require the application of instructional medium in teaching process in order to apply their lessons to real-world situations. (Manurung, 2015). According to Kemdikbudristek (2021) the introduction of basic scientific knowledge to understand real-world situations is carried out through information from digital and/or non-digital media in stages. Degner et al. (2022) assert that digital media has great potential to create an interactive and exciting learning environment.

In addition, using technology to create interactive lessons for middle school pupils might be a tempting choice for teachers. Technology has improved each facet of our lives, but education is the most crucial since it emphasizes the learning process. (Sanda & Klimova, 2021). According to Saed et al. (2021), a lot of the classrooms that researchers have visited are up-to-date and inventive, and they typically already make use of digital equipment like LCD projectors in each classroom. Therefore, teachers should create engaging lessons that may aid and motivate students to better comprehend the learning material.

Nowadays, teachers widely employ digital flashcards as a medium for teaching vocabulary to pupils as part of language acquisition. (Yüksel et al., 2020). The benefit of digital flashcards as learning aids are numerous, such as it supports language visualization in boosting vocabulary mastery through pictures that convey the meaning. (Yüksel et al., 2020). Digital flashcards learning resources may be accessible from anywhere using a smartphone, including at home with parents, allowing parents to study with their children. According to Dizon & Tang (2017) The usage of digital-based learning flashcards has a more beneficial impact on vocabulary acquisition than paper flashcards because digital flashcards have been shown to aid students promote future memory to a greater extent than notebook materials and paper flashcards (PFs).

Digital flashcards can be created by teacher through flashcard-maker application such as *Quizlet*. *Quizlet* is free application, which enables users to access through web browser by using the link Quizlet.com or open via mobile phone by downloading in PlayStore (Lutfi, 2020). This app enables teachers to develop custom flashcards as learning media in the classroom. The other advantage of *Quizlet* is the app comes with several features that are useful for students in developing students' language skill, especially in speaking skill. Features on Quizlet allows students to train their speaking skill to be better (Lutfi, 2020).

Digital Flashcards (DFs) as Learning Media

The emergence of various technologies in era 4.0 also required teachers to design creative and innovative learning (Yüksel et al., 2020). For this reason, teachers need to create an interactive environment for students by engaging digital technology that can improve the abilities learned, especially in English speaking skills. Digital flashcards (DFs) are flashcards application that can be accessed anywhere and anytime via a website or mobile device to learn new vocabulary with interactive features (Ashcroft & Imrie, 2013; Ashcroft et al., 2018; Yüksel et al., 2020). Digital flashcards (DFs) is study set that can apply to enhance students' speaking skill. Digital flashcards are flashcard digital-based which are displayed in virtual way, containing images, text, or symbols that can prompt and direct students to recall information about a picture in visual form.

The effect of digital media is also supported by a study that reported that many preschool-aged children are already proficient in using mobile phone without assistance or direction (Mourlam et al., 2019). Flashcard media itself can be defined as small cards with images, text, or symbols that can remember and direct pupils to idea associated with that image (Miles & Ehri, 2017). With the advancement of digital technology, many flashcards programs such as Quizlet, are currently available on several websites or collaborative sites that utilize the impact of digital technology such as computers and mobile/tablet devices. In addition, this media is very interactive and interesting for students to help them understand the material being taught and develop language learning in terms of vocabulary mastery and their English speaking skills (Zakian et al., 2022).

Using Digital Flashcards (DFs) to Enhance Students' Speaking Skill

According to Cole et al. (2007), speaking is productive skill that students' language learning need to develop. Speaking skill is important to grasp since everyone need to have an oral communication that is fundamental to each facet of life. Manurung (2015) states that a person's success in learning a language can be measured by their success in using language as a communication tool, both in formal activities such as in speaking classes and in informal activities such as daily conversations. This achievement is demonstrated when a language learner is able to converse with other people and convey his or her ideas, feelings, and thoughts in dialogues or monologues.

As a means to communicate effectively, speaking ability is the most fundamental skill to develop. Speaking represents essential skills that calls on students to be able to do more than just communicate with others, but also to understand, respond, and provide appropriate and effective answers, so that it can be said as communication. In addition, since language serves as a tool for communication, speaking may be considered an outcome of language acquisition. (Sari & Margana, 2019). These proficiency components are necessary to be considered when teacher measure the speaking ability of students. It is momentous to identify some problems and obstacles encountered during the teaching speaking process because speaking is one of the major part of language acquisition. The teacher needs to undertake a need analysis to know the specific needs before deciding and designing the learning. This can be managed by determining methods and

approaches in accordance with students' distinctive (Ramdhani, 2022). Henceforth, teachers need an appropriate tool and strategy in order to support the improvement of speaking skills in order to achieve the expected educational goals. Speaking is the ability to pronounce the articulation of words and sounds to express or deliver thoughts, ideas, and feelings (Hasrah, 2021; Sasmita, 2018). Hence, the ability to speak in this study refers to the competence of students to conceive the use of words and link them to the object they want to show and the ability to enrich and pronounce vocabulary correctly.

It has pointed earlier that digital flashcards is interactive study set that can be used by teachers in learning English (Colbran et al., 2017). Digital flashcards are used by teachers in increasing vocabulary, practice word pronunciation through audio from native speakers, and increasing the skill of speaking. On the other hand, digital flashcards has revealed in in boosting speaking skill of university students through *Quizlet* application (Kurniawan et al., 2020; Lutfi, 2020). In this research, digital flashcards are considered as tools that raises students' enthusiasm since it is a learning aid as picture card form that can be used as a stimulus for students to practice their speaking skills by describing an image with related vocabulary (Bueno-Alastuey & Nemeth, 2022; Colbran et al., 2017).

Based on the explanation, it is clear that the use of digital flashcards (DFs) has an impact on English learning. However, it is important to know whether the same result applies in the different context. Another research designs used to make it different from the previous research. Further studies are needed to explore more on a different participant since the participant of previous studies addressed to university students as sample. Thus, the researcher took Indonesian students specific on junior high school students as participants to know whether there is significant effect of using digital flashcards on improving junior high school students' speaking skill.

2. Method

This study employed pre-experimental design. The sample was took from one of the junior high school in Gresik by taking 32 students especially in seventh grade as participants. The design used one group that was organized by a pre-test, treatment, and a post-test. The researcher gathered the data by six meetings covered pre-test, four times treatment, and post-test. In order to assess speaking performance, two raters evaluated students' pre-test and post-test score in this study and used scoring rubric by IELTS speaking band descriptor consists of four principal criteria of assessment: fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. The steps for implementing Digital flashcards (DFs) in class are as follows: (1) the teacher creates a Digital flashcards website account, namely *Quizlet*, (2) the teacher creates a class for students on the *Quizlet* website, (3) the teacher creates Digital flashcards using the *Flashcards* feature on the *Quizlet* website, (4) the teacher invites students to join the class, (5) the teacher engages students with learning activities using the *Flashcards* feature. Data analysis in this study consists of the normality test and hypothesis testing (*Wilcoxon Test*).

In this study, researchers used the SPSS 23 for windows program for processing techniques and data analysis. The steps in processing and analyzing quantitative data are as follows.

1. Normality Test

The normality test was carried out to find out whether the data is normal or not which is a requirement for determining what type of statistics should be used for the next analysis step. The hypothesis tested is:

H_0 = Normal distribution

H_1 = Non-normal distribution

This normality test calculation uses the help of *SPSS 23* for windows software through the *Shapiro Wilk* because the number of samples is less than 50 ($N < 50$). Test criteria with a significance level of 5%. The significant level is ($\alpha = 0.05$) if the P-value (*sig*) < 0.05 then H_0 is rejected and if the P-value (*sig*) > 0.05 then H_0 is accepted.

H_0 = data from normally distributed samples

H_1 = data from samples that are not normally distributed

2. Hypothesis Testing

Wilcoxon test or also known as *Wilcoxon test* was conducted because the data was not normally distributed. If the value of *sig. (2-tailed)* is less than 0.05, it can be said that there is the difference between the pre-test and post-test scores. However, if the the value of *sig. (2-tailed)* obtained is more than 0.05, it means that there is no difference between both scores.

The significance level is ($\alpha = 0.05$). If the value of *sig. (2-tailed)* < 0.05 then H_0 is refused and if the value of *sig. (2-tailed)* > 0.05 then H_0 is accepted.

H_0 : pre-test score is the same as the post-test.

H_1 : pre-test score is not the same as the post-test.

3. Effect Size

In order to ascertain the degree of the effect, it has become essential to compute the *Wilcoxon* test for effect size. Pallant (2016) claimed that an impact statistic was no longer provided with the results of using SPSS, but that a value of "Z" was there at the conclusion of the *Wilcoxon* test results. It was done in order to obtain a standard deviation that was equivalent in the t-test. It was employed to determine the effect size that they received from the treatment results they got from using digital flashcards. The following are the factors that go into determining effect size:

$$r = \frac{Z}{\sqrt{N}}$$

3. Findings and Discussion

Findings

The result revealed that the media is vulnerable to boost students' speaking skill that showed by the average of the pre-test score was originally 38.15, and after the treatment increase to 49.57 on the post-test. The improvement was proved by the researcher through the calculation using SPSS to measure and compare the mean score of pre-test and post-test.

Table 1. Result Pre-test and Post-test

Test	Average	Level of Proficiency IELTS
Pre-test	38.15	Extremely Limited User
Post-test	49.57	Limited User

Table 2. Test of Normality

Test	Shapiro Wilk (Sig.)				
	Speaking Skill	Fluency and Coherence	Lexical Resource	Grammatical Range and Accuracy	Pronunciation
Pre-test	0.001	0.000	0.000	0.000	0.000
Post-test	0.000	0.000	0.000	0.000	0.000

The result of normality test above showed that the P-value in each pre-test and post-test data of students' speaking skills and each criteria of speaking assessment is P-value (sig) <0.05, so that the data is not normally distributed. Therefore, the different test used by researchers is the Wilcoxon test. The different test results are provided in the table below.

Table 3. Wilcoxon Test

Test	Shapiro Wilk (Sig.)				
	Speaking Skill	Fluency and Coherence	Lexical Resource	Grammatical Range and Accuracy	Pronunciation
Pre-test	0.001	0.000	0.000	0.000	0.000
Post-test	0.000	0.000	0.000	0.000	0.000

The result of Wilcoxon test above, it showed that the value of Sig. (2-tailed) for students' speaking skill is .000 which is less than .05 so it can be interpreted that between pre-test and post-test scores there is a significant difference. The table above also shows the Asymp values. Sig (2-tailed) for each criteria of speaking assessment includes fluency and coherence of 0.000, lexical resource is 0.000, grammatical range and accuracy is 0.000, and pronunciation is 0.000. Asymp value. Sig. (2-tailed) the four criteria above are less than 0.05 so that it can be interpreted that the pre-test and post-test values in the four criteria assessment are different.

Table 4. The Result of Effect Size

No.	Aspect	Z	r	Intepretation
A.	All			
	Speaking Skill	4.955	0.63	Large effect
B.	Each of Assessment Criteria			
1	Fluency & Coherence	4.333	0.50	Large effect
2	Lexical Resources	4.985	0.62	Large effect
3	Grammatical Range & Accuraccy	4.921	0.62	Large effect
4	Pronunciation	5.031	0.63	Large effect

Based on the calculation of effect size above, the r value of speaking skill is large effect category (0.63). In line with rule of Cohen (1998), it is miles extra than 0.14, therefore it is reasoned that the effect size given by treatment existed within the massive large effect. Whereas, the calculation of four assessment criteria consecutively from the higher value to the lowest are *pronunciation* (0.63), *lexical resource* (0.62), *grammatical range and accuracy* (0.62), and *fluency and coherence* (0.50), so that it can be concluded that the effect size given for each criteria are huge large effect.

Discussion

Based on the test results above, there is a hypothesis which was found that the pre-test scores significantly different from the students' post-test scores. This means that digital flashcards media has shown to be successful at enhancing students' communication abilities on secondary level in Public School of Gresik. The media is effective to enhance students' speaking skill which shows by the average of the pre-test score was originally 38.15, and after the treatment increase to 49.57 on the post-test. The improvement was proved by the researcher through the calculation using SPSS to compute the mean score of pre-test and post-test. From the results of the Wilcoxon test above, it shows that the Asymp. Sig. (2-tailed)

for students' speaking skill is .000 which is less than .05 so H_0 is refused and H_1 is accepted. That means, the pre-test and post-test scores of students' speaking skills are significantly different. In addition, many students have better speaking skill in each criteria assessment by IELTS. The table above also showed that the values of Sig (2-tailed) for all speaking criteria by IELTS are 0.000. The value of Sig. (2-tailed) the four criteria above are less than 0.05 so that it can be interpreted that the pre-test and post-test values in the four skills has significant effect.

Further analysis shows that the overall effect size of students' speaking proficiency is in the large effect category (0.619). This means that digital flashcards have a large impact on students' overall speaking skills of 0.63. The effect sizes for each speaking skill, namely *fluency and coherence* (0.50), *lexical resource* (0.62), *grammatical range and accuracy* (0.62), and *pronunciation* (0.63) were also found to be in the large effect category. These results also confirm that digital flashcards have a big impact on each of the improvement of speaking skills. The increase in speaking skills was also reinforced by the pre-test average data of 38.15 increasing to 49.57 in the post-test. In addition, other data also shows an increase in the level of student skills, namely during the pre-test there were 21 students at the Extremely Limited User (ELU) level and 11 students at the Limited User (LU) level. Meanwhile, during the post-test the student level increased, namely there were 20 students at the Limited User (LU) level and 12 students at the Modest User (MU) level.

Digital flashcards are digital-based media that are popularly used today by teachers in the learning process in class. *Quizlet* was applied by researcher in this study because is a free mobile device and web-based learning application that provides student learning tools such as *flashcards*, *learn*, *test*, and *match*. In applying digital flashcards, the researcher conducted a lesson for students regarding the material used, namely about descriptive text. Before the researcher carried out the digital flashcards treatment, students received an explanation about the structure of the text and language features (use of grammar) which enabled students to gain knowledge about the material of the descriptive text.

Many research has proven that digital flashcards successfully in enhancing students' vocabulary (Ashcroft et al., 2018; Dizon & Tang, 2017; Yüksel et al., 2020). However, this study used only the *flashcards* feature on *Quizlet* which presents pictures and words that can help students recognize and remember vocabulary with the image stimulus shown on the *Quizlet* website, so that students' vocabulary skills increase. Previous research revealed that the use of audio as learning Fmedia successfully improved their pronunciation since audio application in EFL classes attracted students' interest, encouraged and benefited, where students made an effort to practice *pronunciation* and *fluency and coherence* and appeared excited and interested in listening the audio from native speakers and practicing the speaking activity. (Saed et al., 2021; Silviyanti, 2014). This *Flashcard* feature is also equipped with audio which helps students in pronouncing words precisely, so that their pronunciation improves. Moreover, *grammatical range and accuracy* increased since the using of digital flashcards (DFs) as a stimulate on the learning activity successfully improved these criteria. In line with the related study conducted by Serfaty & Serrano (2020) showed that digital flashcards can employe in grammar learning since this study asserted that there was improvement scores on students' grammar scores.

Nowadays, many interesting digital-based medium can assisst the teacher in learning process. Digital-based media is certainly familiar and easy to use by teachers and students who are already familiar with using technology such as mobile phones. The researcher use *flashcards digital-based* that help teacher in learning process since this media have demonstrated in some previous studies can help vocabulary mastery of the students (Ashcroft et al., 2018; Dizon & Tang, 2017; Yüksel et al., 2020). Whereas, the other researcher was found that digital flashcards can increasing students' speaking skill (Kurniawan et al., 2020; Lutfi, 2020).

Based on the study result, there were also previous studies that found the digital flashcards is effective on enhancing students' speaking skill. The first study was conducted by Ashcroft et al., (2018) found that when using digital flashcards instead of paper ones, Japanese university students with lower proficiency in English ability considerably increase their vocabulary learning gains. Whereas, Kurniawan et al. (2020) found that students indicated the modification of *Quizlet* as digital flashcards using storytelling as a part of learning which has been proven it can improve students speaking skills and could be applied in the class to train students speaking skills.

4. Conclusion

According to the findings, the utilize of digital flashcards (DFs) in teaching and learning has increased the speaking skill of seventh graders at Gresik junior high school. The enhancement of students' speaking skills can be shown by the improvement of students' speaking scores in each sub-skills of speaking. On the other hand, the increasing also occurred towards four criteria by IELTS. Despite the students have difficulty at the first of the study, the students could use vocabulary appropriately, could pronounce the word properly, and could speak more fluently with competent grammar. Students who were taught speaking by using digital flashcards (DFs) could show better post-test scores in speaking skills rather than before in pre-test scores before they conducted the treatment. In conclusion, the calculation of pre-test and post-test scores using *Wilcoxon* test showed that the using of digital flashcards (DFs) successfully improved students' speaking skill. This was proved with the different result between two score after the treatment that had been carried out. Furthermore, the effect size showed that there is large effect on the using digital flashcards (DFs) towards students' speaking skill. It is statistically proved that digital flashcards (DFs) is effective to use for junior high school students on boosting their speaking skill.

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