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Teaching English Using Flashcards to Improve Elementary School Students' Vocabulary

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Abstract

Acquiring new English words is a challenge for students because they commonly need to learn to use the words in their daily lives, which are dominated by their first language for communication. Flashcards are instrumental in facilitating their vocabulary learning. This research examined flashcards' use in teaching and learning English language vocabulary. This research used a quantitative approach with an experimental design. The data was collected by asking students to do a vocabulary test before and after the treatment. The object of this research was fourth-grade students in a private primary school in Yogyakarta, Indonesia. The results indicated that the student's English vocabulary level on the pre-test was at the intermediate level, which showed a mean score of 52.20. Meanwhile, on the post-test, the student's English vocabulary level was at an advanced level, showing a mean score of 77.60. In addition, the Wilcoxon test showed that the *p*-value of *asymp.sig.2tailed* was 001. It means that the students' English vocabulary significantly improved after being taught using flashcards. It indicates that the hypothesis that flashcards have significantly improved students' vocabulary was accepted.

Keywords: EFL; English language; flashcards; learning; primary school; teaching

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Introduction

Language teaching is a method of sharing, imparting, and transferring a teacher's knowledge to students in a formal or informal setting to gain four primary English abilities (reading, writing, listening, and speaking). Students in primary schools having started to learn four major components of English language learning: speaking, reading, listening, and writing. Teachers must consider providing students with various materials, resources, engaging teaching techniques, and activities that enable them to be active agents in their classroom learning. Furthermore, teaching pupils the exact objectives is necessary so that English learners can accomplish the four English skills. In aiming to develop the students' four English language skills, it is essential to teach vocabulary to the students. According to Tambun (2014) and Hamer and Rohimajaya (2018), the most crucial factor influencing learners' capacity to speak, read, listen, and write is vocabulary, the core component of language competency. These are three convincing reasons for expanding one's vocabulary: First and foremost, vocabulary is necessary for communication; second, a strong vocabulary allows learners to enhance other talents; and finally, the more vocabulary learners master, the more they will acquire (Hamer & Rohimajaya, 2018). In another sense, it is easier for learners to speak in English by first understanding or acquiring the terms.

Hamer and Rohimajaya (2018) stated that vocabulary teaching is an activity in which the teacher teaches pupils about language and how to utilize it in everyday settings. Teaching vocabulary must be straightforward, essential, and focused on introducing a new language to the student. Running in line with the teachers' knowledge of what the students need, identifying the characteristics and who the learners are, and, most significantly, knowing the most engaging activities or approaches that can be utilized in the teaching process for the learners. Acquiring vocabulary is an intricate undertaking beyond grasping word meanings; it entails remembering, recalling, and effectively employing it in practical usage (Hu & Nassaji, 2016). To learn new words, learners must understand that learning is a continuous process. To grasp the vocabulary, students must constantly gain insight into new terms. In teaching vocabulary, the teacher needs to provide the students with an engaging teaching method to gain their interest in the materials. A flashcard could be one of the tools used to teach vocabulary in elementary schools.

Flashcards are small cards with pictures, text, or symbols that can be used to remember or guide students to anything related to the pictures and can be used to practice spelling and enhance vocabulary (Fitriyani & Nulanda, 2017). Simple and versatile flash cards are made by selecting appealing animal pictures for young children, giving them titles in English and Indonesian, and printing them on paper (Muzakki et al., 2012). According to Gaol et al. (2020), students' academic performance and linguistic competence will increase thanks to flashcards. Teachers can use flashcards to make their lessons more engaging and help students retain new language and concepts more quickly.

Many students frequently need help acquiring new English vocabulary due to the lack of regular usage of these words in their daily routines. Putri (2016) says that students need to learn more English words because the learning process does not keep their attention, and they do not find the learning materials interesting. Another reason is that the learning methods are varied. Few resources or tools can be used to teach English vocabulary in elementary schools. It is also one of the problems that can make it hard for elementary students to learn English vocabulary. In this research, the researchers focused on the problem that the tools used in English teaching and learning are not varied, causing the student's interest in learning to decrease.

While flashcards are not considered a new concept for teaching vocabulary, this research placed them within the context of addressing the problem of limited tools in English teaching and learning, especially in an elementary school. The research suggests that flashcards can be an effective and engaging method to enhance vocabulary. Hence, this research examined the use of flashcards in English vocabulary teaching and learning with the hypothesis that the use of flashcards in teaching vocabulary could significantly improve the student's vocabulary mastery.

Literature Review

Teachers must devise various motivating ways to teach vocabulary because it is one of the essential backbones to mastering the English language for language conversation or academic purposes. That is supported by Azabdaftari and Mozaheb (2012), who stated that developing a student's vocabulary is essential to learning English. Lexis, or lexicon, is the word

collection that makes up a language's grammatical structures. According to Komachali and Khodareza (2012), as people grow, their vocabularies grow and change, becoming more valuable tools for acquiring knowledge and passing it along to others. Wahyuni and Yulaida (2014) defined vocabulary as "words with meaning that a person produces to communicate with others." According to Supriatin and Rizkilillah (2018), students need a foundational vocabulary to advance in reading, listening, speaking, and writing. Students who grasp this vocabulary will have a much easier time communicating in English. In summary, vocabulary is the pillar of acquiring a language because it will construct a language's grammatical structure; when a person understands and knows how to implement words, it means that the person already knows how to communicate using the language.

Students' vocabularies significantly impact how well they can express themselves in English. With sufficient vocabulary knowledge, students can communicate well and express their opinions and feelings in the language they learn (Mutholib & Muflichah, 2020). Therefore, working on vocabulary with elementary school pupils learning English is vital. Vocabulary instruction is fundamental to the English curriculum in primary schools since it is widely acknowledged that vocabulary is both a key component and the backbone of any language. Meanwhile, using instructional media in teaching young learners can make learning interactive, creative, and communicative, enhancing language learning (Petina et al., 2023). Muhyiddin stated that using media to help teach English to young learners is essential because media is a means of communication (as cited in Fadloeli, 2021). One goal of English instruction is to help students become more fluent communicators in the language. The importance of a child's vocabulary as they develop is becoming more widely recognized, yet not all children pick up words quickly. To that end, several tools and resources are available to help children expand their vocabularies (Chen & Chan, 2019).

Teachers should be familiar with various strategies and tools for teaching and acquiring English vocabulary to provide students with the most appropriate and practical approach to vocabulary development and retention. Some strategies or tools that teachers can use in language teaching are comic strips, songs, games, slides, and many more. Furthermore, researchers will employ learning media that is engaging yet has educational value to increase

English language abilities and improve students' memory of English vocabulary (Hasanah et al., 2019).

A flashcard is a little card with written or numeric information on both sides, typically used for studying or drills in the classroom. It is created to store information. The more important information can be easily saved on the flash card because its central purpose is to store information for the convenience of the people (Marpaung & Zainuddin, 2012). The technique of spaced repetition, which is what flashcards facilitate, is frequently employed as a learning drill (Komachali & Khodareza, 2012). Teachers can use flashcards to make their lessons more interactive and engaging, and students can use them to retain new language and concepts better. Media-teacher-friendly electronic flashcards provide a valuable, technologically based learning aid for young students in bilingual classrooms (Noge, 2018).

Two sorts of flashcards are practically used in English language teaching and learning. The first is paper or traditional flashcards. Paper flashcards are traditional flashcards that students can physically interact with while studying. They consist of a card embellished with an image and a word that describes the image. Herlina and Dewi (2017) reported that they used flashcards to teach vocabulary to grade 3 pupils in Indonesia, and they discovered that they were effective since they were simple to make. Despite the emergence of new technologies for vocabulary acquisition, such as mobile flashcard apps, the undiscovered value of conventional flashcards should be recognized, just as we cannot disregard paper books in favor of digital equivalents (Honarzad & Soyoof, 2023). Second, e-flashcards are not printed and cannot be physically touched. It is usually made using online tools such as Canva or Quizlet. According to Nakata, users of digital flashcards have access to all the tools they need to learn new vocabulary in an online environment, including definitions, examples, images, audio recordings, videos, and interactive exercises (as cited in Chen & Chan, 2019),. Students of other tongues can benefit from using electronic flashcards (Chien, 2015). Digital flashcard (DF) resources, such as Quizlet and Cram, are becoming increasingly accessible to students as Internet services and personal computers become more affordable and user-friendly (Dizon & Tang, 2017).

In the elementary school setting, flashcards are a handy tool for teaching English vocabulary. It creates a stimulating learning atmosphere for the pupils. When many students are bored in lectures, in this case, using flashcards is a viable option for educators. In addition,

using flashcards has improved students' long-term vocabulary retention in English. According to Nadziroh (2010), utilizing flashcards to learn English is a more efficient and helpful method for learning new vocabulary. Since flashcards have bright pictures that engage young students, they are a simple and effective method for teaching English to Young Learners (Kusumawardhani, 2020).

Some past studies have also found the use of flashcards in language teaching and learning. The first study was written by (Komachali & Khodareza, 2012). The article "The Effect of Using Vocabulary Flash Card on Iranian Pre-University Students" Vocabulary Knowledge." This study aims to improve students' vocabulary understanding by employing a seven-step vocabulary flashcard (VFC) design to speed up lexicon acquisition. It is quantitative research with an experimental design study. The instruments the researcher uses for this study are a general language proficiency test, pre-test, post-test, and questionnaire. The participants included are the Iranian pre-university mathematics field students in the 2011/2012 academic year. There were female participants in this study. The research results show that the experimental group has a better vocabulary score in both the pre-test and post-test than the control group. This result indicates that Flashcflashcarding has significantly increased the students' English vocabulary mastery as its efficiency is better than only the traditional teaching method.

The second research was conducted by (Supriatin & Rizkilillah, 2018). The title of the study is "Teaching Vocabulary Using Flashcards." This study aims to know how vocabulary flashcards affect students' vocabulary mastery at the sixth-grade elementary level. The design of the research is quantitative research, which is experimental research. The researcher will provide three data collection plans, the pre-test, treatment, and post-test, as the research instruments. Twenty-nine students in the sixth grade of SDN Rengasdengklok Selatan 2 in 2017/2018 were the research subjects. The result of this study shows that the students' scores before and after using flashcards in their classes, as calculated, the mean score before the flashcard teaching was 66.21 and after 79.55.

This research focused on the use of flashcards in English language vocabulary teaching and learning, particularly in addressing the challenge students faced in acquiring new English

words due to limited daily usage. The previous studies underscore the importance of vocabulary in language learning, emphasizing its role in the four language skills using various strategies and tools, with a particular focus on flashcards. The positive impact of flashcards on vocabulary mastery has provided theoretical grounding for the current research. This study provides empirical evidence of the positive impact of flashcards on students' vocabulary development and contributes to the existing literature supporting the use of flashcards in language teaching.

Method

This study investigated the significant improvement between the pre-test and post-test after the treatment using flashcards. A quantitative approach was used for this research. Using a quantitative approach in this research is suitable because it aligns with the study's objectives, emphasizing numerical measurements, statistical analysis, and the evaluation of the hypothesis related to the student's vocabulary improvement. Also, because this research aims to determine the significant improvement between the students' vocabulary level and the use of flashcards, the most suitable method is the quantitative research method. Problems suited to being solved through quantitative methods seek to ascertain the presence of a correlation or influence between two variables (Creswell, 2012).

The design that the researcher used is experimental. Experimental designs, likewise known as intervention studies or group comparison studies, are quantitative research procedures meant to investigate the impact of certain activities or tools on the outcomes of respondents (Creswell, 2012). This study used the pre-experimental design that involved only one experimental group, which was given a pre-test and post-test to check the student's vocabulary mastery level. As also stated by Creswell (2012), in a pre-experimental design, the researcher administers treatment to only one group throughout the experiment.

This research was conducted at a private primary school in Yogyakarta. The researchers chose this school for research because it has yet to apply vocabulary learning using flashcards as their media learning. The research was conducted from December 2022 to April 2023. From December until early January, the researchers observed the schools, got permission from the headmaster to conduct the research, made the instruments, and examined the reliability and validity of the instruments. From early January until February, the researchers conducted the

pre-test and post-test, with three treatment meetings. The researchers analyzed and reported the findings in the last two months.

The research population was members of a group with consistent traits, referred to as populations (Creswell, 2012). The entire population for this study consisted of fourth-grade students from a private primary school in Yogyakarta, Indonesia. Specifically, the school had two fourth-grade groups, making a total population of 49 students for the research.

The researcher chose this school because this school does not use flashcards to teach English vocabulary to the students there. The students have never been taught using flashcards by their teachers in their English vocabulary class.

The sampling technique used in this research was a non-probability sampling technique. A non-probability sample is designed to exclusively represent a specific subgroup or section of the larger population, such as a class or group of students undertaking a specific examination (Cohen et al., 2012). Because the research focuses on elementary school students, the sample is elementary students in fourth grade, which used a purposive sample. There were two groups of fourth-grade students, namely Group A, which comprised 26 students, and Group B, which consisted of 23 students. The researcher chose fourth-grade group B because the teachers suggest that this group has never been taught using flashcards in English language teaching and learning.

A test was used as the research instrument to collect the data and test the students' English vocabulary mastery. The researcher used pre-tests and post-tests. The test consisted of twenty items identifying the targeted vocabulary. The test was validated using expert judgment from the English class teacher and the research supervisor.

In the data collection procedure, first, the researcher visited the private primary school in Yogyakarta and took the licensing administration paper, the treatment materials and tools, and the test instruments. The first meeting included greetings, self-introductions, and a pre-test. The researcher introduced materials on occupation and dreams using PowerPoint and answer sheets to give students an overview of the upcoming lessons. In the second meeting, the researcher showed a video example of someone discussing dreams, followed by a vocabulary learning session with flashcards. Students practiced new vocabulary through exercises on new words related to occupation. The third meeting involved a review of the previous session's

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vocabulary. Students recalled the learned words, created sentences using flashcards, and engaged in interactive activities. Flashcards and PowerPoint were used for teaching. Next, the fourth meeting featured discussions on new vocabulary, explanations using flashcards, and student-led discussions on their prior vocabulary learning. The dialog examples were provided, helping students understand how to use vocabulary in sentences. Media included Flashcards and PowerPoint. The fifth meeting included a post-test on dreams and occupation, allowing assessment of student progress. The test utilized answer sheets as the assessment medium. The procedure of the data collection is summarized in Table 1.

Table 1. Data collection procedure

Observation and Permission	**Pre-test**	**Treatment**			**Post-test**
	Pre-test	1st Treatment	2nd Treatment	3rd Treatment	Post-test
December	End of January	Early February	Early February	Middle of February	End of February

After the researcher got the pre-test and post-test data, the first data analysis was to determine the mean, minimum, and maximum scores of both pre-test and post-test. The researcher used the SPPS tools for the descriptive analysis to find mean, median, mode, standard deviation, minimum, and maximum scores. Because the small size of this research data was not normally distributed, the researchers used a non-parametric Wisconsin test. Non-parametric analysis was used due to the small size of the research data. As supported by Sainani (2012), formal normality tests are sensitive to sample size, with large samples detecting minor deviations and small samples missing significant ones. These tests are optional and should be read within graphs and normality plots. Therefore, another alternative was conducted to evaluate the data using "non-parametric" tests, which make no assumptions concerning how the data were distributed.

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Findings

The findings of this research were collected after five meetings between the researchers and students through lesson plans devised earlier by the researcher. The research aims to determine the significant improvement in the student's English vocabulary mastery before and after the treatment using the tools, which are flashcards. When the sig is lower than 0,05, it can be concluded that there is a significant improvement in the student's scores before and after the treatment.

Figure 2. Pre-test descriptive analysis report

Statistics

PRETEST

N	Valid	25
	Missing	25
Mean		**52.20**
Median		60.00
Mode		0[a]
Std. Deviation		30.141
Range		100
Minimum		0
Maximum		100

a. Multiple modes exist. The smallest value is shown

The figure 2 shows that the mean of the pre-test is 52.20 (μ = 52.20), the lowest score of the students in the pre-test is 0 (min = 0), and the maximum score is 100 (max = 100). The median of the students' English vocabulary mastery in the pre-test of the experimental group was 60.00 (= 60.00). The standard deviation is 30.141 (σ X = 30.141). To determine the student's English vocabulary mastery. The researchers used a range score in the following table.

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Figure 3. Test range score formula

$$\text{Range score} = \frac{\text{Max. Score} - \text{Min. Score}}{\text{Category}}$$

$$\text{Range score} = \frac{100 - 0}{4} = 25$$

Table 3. Test range score

Range Score	Category
0 - 25	Beginner
26 - 51	Pre-Intermediate
52 - 77	**Intermediate**
78 - 103	Advanced

Based on the table 3, it can be concluded that the pre-test mean of the students is 52.20 (μ = 52.20). It can be looked at in the range score, which indicates that the mean score is 52.20 (μ = 52.20), which is in the intermediate level, where the mean is higher than 52 and lower than 77 ($52 < 52.20 < 77$). The number in the range score determined the category of the student's vocabulary level on the pre-test. When the students' mean score on the pre-test was 52.20, it can be concluded that the student's vocabulary level on the pre-test was intermediate.

The researchers also used SPSS tools to identify the students' post-test scores, mean, median, mode, minimum, and maximum scores. The researchers used a descriptive analysis.

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Figure 4. Post-test descriptive analysis report

Statistics

POSTEST

N	Valid	25
	Missing	25
Mean		77.60
Median		90.00
Mode		100
Std. Deviation		33.545
Range		100
Minimum		0
Maximum		100

The average score on the post-test is 77.60 (μ = 77.60), the lowest score on the post-test is 0 (min = 0), and the highest score is 100 (max = 100). The post-test for the experimental group showed that the median score of the students' English language skills was 90.00 (= 90.00). The standard deviation is 33.545 (σ X = 33.545). The researcher used the same score range shown in Table 3 to find out how well the students know English words.

The data analysis showed that the students' post-test mean score is 77.60 (μ = 77.60), or in the Advanced level. At this level, the average score is between 77 and 103 (77 < 77.60 < 103).

Figure 5. Post-test range score

Test Statistics[a]

	POSTEST - PRETEST
Z	-3.350[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The non-parametric Wilcoxon test was applied since the data were not normally distributed. The result of the Wilcoxon signed-rank test showed that the score of *asymp.sig.2tailed* is 001. Meanwhile, the standard of the significance result is if the *asymp.sig.2tailed* is less than 0.05. Therefore, the student's scores between the pre-test and post-test significantly improved after the treatment of teaching using flashcards in teaching and learning English vocabulary (001 < 0.05).

Discussions

As explained briefly in the result, several things can be discussed in this part, such as a pre-test score, a post-test, and the significant difference between the pre-test and post-test scores. The research results indicate a significant improvement in students' English vocabulary mastery after teaching vocabulary using flashcards. The vocabulary pre-test scores showed that the students' mean score of 52.20 (μ = 52.20) was at the intermediate level. In contrast, the students' mean score of 77.60 (μ = 77.60) in the post-test indicated an advanced level of English vocabulary mastery. The use of inferential analysis, precisely the Wilcoxon method, demonstrated a significant improvement in the student's vocabulary scores, shown by the significant value of asymp. Sig. 2-tailed results of 0.001. This supports the hypothesis of this research that teaching English vocabulary using flashcards significantly improves the students' vocabulary mastery. The result aligns with previous research, such as Nadziroh (2010), which also found that flashcards effectively improved students' vocabulary. The findings are also consistent with previous studies conducted by Chen and Chan (2019), which demonstrated that traditional flashcards significantly improved vocabulary learning.

Additionally, the results align with Ngarofah and Sumarni (2019), who reported improving students' vocabulary mastery after using flashcards. Furthermore, the effectiveness of flashcards in vocabulary learning has been supported by various studies (Pimada et al., 2020; Azabdaftari & Mozaheb, 2012; and Alghamdi & Elyas, 2020), all of which highlighted the positive impact of flashcards on vocabulary acquisition. Moreover, the results are consistent

with the findings of Apfani et al. (2022), which showed a significant improvement in student vocabulary scores after using flashcards.

The success of flashcards in improving vocabulary mastery can be attributed to their ability to promote active recall, metacognition, and confidence-based repetition, as highlighted by Nurhaliza and Sari (2023). Additionally, the spaced repetition and retrieval practice facilitated by flashcards, as emphasized by Karpicke and Bauernschmidt (2011), contribute to their effectiveness in long-term retention. In conclusion, the research findings, supported by previous studies, affirm the positive impact of flashcards on enhancing students' vocabulary mastery. Flashcards have demonstrated significant improvement in vocabulary learning, emphasizing the effectiveness of this method in English language teaching and learning. It is proved that the hypothesis is accepted, and the use of flashcards in English vocabulary teaching and learning has significantly improved the student's English vocabulary mastery.

Conclusion and Implication

This research was conducted to determine the significance of the improvement of fourth-grade students in using flashcards as a teaching tool in English vocabulary teaching and learning. The flashcards used in teaching vocabulary engage the students to get more into the learning because the learning process is getting more enjoyable, fun, and engaging. The class taught by the researcher is the fourth grade Class B as the object of the experiment.

Based on the result, it is reported that the level of the students in the pre-test is intermediate because the mean score is higher than 52 and lower than 77 ($52 < 52.20 < 77$) regarding the answer to the second research question. The result showed that the students' post-test was Advanced because the mean score of post-tests is 77.60 ($\mu = 77.60$) which is higher than 77 and lower than 103 ($77 < 77.60 < 103$). The result showed a significant improvement between the pre-test and post-test scores. From the Wilcoxon analysis, the significant value was 0.001, lower than 0.05. So, it can be concluded that using flashcards in English vocabulary teaching and learning has significantly improved the student's understanding of English vocabulary.

In conclusion, using flashcards in English vocabulary teaching and learning engages the students with the materials, and it helps the students understand the materials even more

quickly than without flashcards. This research has justified that flashcards improve the student's English vocabulary mastery.

References

Alghamdi, A. A., & Elyas, T. (2020). The effect of electronic flashcards on EFL students' vocabulary learning: The case of Saudi Arabia. *Randwick International of Education and Linguistics Science Journal, 1*(2), 114-125. https://doi.org/10.47175/rielsj.v1i2.79

Apfani, S., Utami, E. P., & Suryani, A. I. (2022). Efektivitas media pembelajaran flashcard pada keterampilan membaca permulaan di kelas I Sekolah Dasar [The effectiveness of flashcard learning media on initial reading skills in grade I elementary school]. *Jurnal Pendidikan Tambusai*, *6*(2), 16789-16796. https://doi.org/10.31004/jptam.v6i2.5214

Azabdaftari, B., & Mozaheb, M. A. (2012). Comparing vocabulary learning of EFL learners by using two different strategies: Mobile learning vs. flashcards. *The Eurocall Review*, *20*(2), 47-59. https://doi.org/10.1504/IJMLO.2012.050050

Chen, R. W., & Chan, K. K. (2019). Using augmented reality flashcards to learn vocabulary in early childhood education. *Journal of Educational Computing Research*, *57*(7), 1812–1831. https://doi.org/10.1177/0735633119854028

Chien, C. W. (2015). Analysis of the effectiveness of three online vocabulary flashcard websites on l2 learners' level of lexical knowledge. *English Language Teaching*, *8*(5), 111–121. https://doi.org/10.5539/elt.v8n5p111

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). London: Routledge.

Creswell, J. W. (2012). *Fourth edition, educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson

Dizon, G., & Tang, D. (2017). Comparing the efficacy of digital flashcards versus paper flashcards to improve receptive and productive L2 vocabulary. *The EuroCALL Review*, *25*(1), 3. https://doi.org/10.4995/eurocall.2017.6964

Fitriyani, E., & Nulanda, P. Z. (2017). Efektivitas media flash cards dalam meningkatkan kosakata Bahasa Inggris [The effectiveness of flash cards in increasing English

vocabulary]. *Psympathic: Jurnal Ilmiah Psikologi*, *4*(2), 167–182. https://doi.org/10.15575/psy.v4i2.1744

Gaol, J. L., Lumban, J., & Inggris, B. (2020). The ability of students develop narrative paragraphs by using flash card. *Cendikia: Media Jurnal Ilmiah Pendidikan* (Vol. 10, Issue 2). https://doi.org/10.35335/cendikia.v10i2.1677

Hamer, W., & Rohimajaya, N. A. (2018). Using flash card as instructional media to enrich the students' vocabulary mastery in learning English. In *Journal of English Language Studies* (Vol. 3). http://jurnal.untirta.ac.id/index.php/JELS

Hasanah, T. A., Cristiana Victoria, D., & Anita, I. (2019). Penggunaan media flashcards untuk meningkatkan daya ingat kosakata Bahasa Inggris siswa kelas 4 Sekolah Dasar [Using flashcards as media to improve English vocabulary memory for grade 4 elementary school students]. *Primaria Educationem Journal*, 2. http://journal.unla.ac.id/index.php/pej/index

Herlina, H., & Dewi, R. R. (2017). Flashcard media: The media for developing students understanding for English vocabulary at elementary school. *Ijer-Indonesian Journal of Educational Review*, *4*(1), 116-128. https://doi.org/10.21009/IJER.04.01.11

Honarzad, R., & Soyoof, A. (2023). Two Vocabulary Learning Tools Used by Iranian EFL Learners: Physical Flashcards versus a Mobile App. *Computer Assisted Language Learning Electronic Journal CALL-EJ)*, *24*(1).

Hu, H. C. M., & Nassaji, H. (2016). Effective vocabulary learning tasks: Involvement load hypothesis versus technique feature analysis. *System*, *56*, 28-39. https://doi.org/10.1016/j.system.2015.11.001

Komachali, M. E., & Khodareza, M. (2012). The effect of using vocabulary flash card on Iranian pre-university students' vocabulary knowledge. *International Education Studies*, *5*(3), 134–147. https://doi.org/10.5539/ies.v5n3p134

Kusumawardhani, P. (2020). The Use of Flashcards for Teaching Writing to English Young Learners (EYL). *Scope: Journal of English Language Teaching*, *4*(1), 35-52.

Marpaung, A., & Zainuddin, Z. (2012). Improving students' achievement in vocabulary by using flashcard. *TRANSFORM Journal of English Language Teaching and Learning of FBS UNIMED*, *1*(2).

Mutholib, A., & Muflichah, S. (2020, May). The use of android-based dictionary game for Arabic vocabulary learning in elementary school. *Proceedings of the 2nd International Conference on Quran and Hadith Studies Information Technology and Media in Conjunction with the 1st International Conference on Islam, Science and Technology, ICONQUHAS & ICONIST*. http://dx.doi.org/10.4108/eai.2-10-2018.2295457

Muzakki, M. S., Widodo, A. T., & Raharjo, T. J. (2012). Keefektifan pembelajaran bahasa inggris berbantuan media flashcards untuk meningkatkan hasil belajar siswa [The effectiveness of English language learning assisted by flashcards to improve student learning outcomes]. *Innovative Journal of Curriculum and Educational Technology*, *1*(2). http://journal.unnes.ac.id/sju/index.php/ujet

Nadziroh, A. (2010). The use of flashcards to improve vocabulary mastery. *Graduate Thesis, State Institute of Islamic Studies Salatiga*.

Noge, M. D. (2018). Penerapan model pembelajaran bilingual preview-review berbasis e-flashcard untuk meningkatkan aktivitas dan prestasi belajar Bahasa Inggris siswa SMP [Implementation of an e-flashcard based preview-review bilingual learning model to improve junior high school students' English learning activities and achievements]. In *Journal of Education Technology*, *2*(1). https://doi.org/10.23887/jet.v2i1.13801

Nurhaliza, & Sari, V. D. A. (2023). Improving eighth graders' vocabulary mastery through students' Learning Style-VARK-Based flashcards . *SAGA: Journal of English Language Teaching and Applied Linguistics*, *4*(1), 15–24. https://doi.org/10.21460/saga.2023.41.164

Nuryani, N., & Fadloeli, O. (2021). The utilization of flash cards in teaching English to young learners. *PROJECT (Professional Journal of English Education)*, 4(2), 156-162. https://doi.org/10.22460/project.v4i2.p156-162

Petina, F., Irdiyansyah, I., & Suryanti, Y. (2023). The Implementation of Instructional Media in Teaching English to Young Learners. *Journal of English Language Studies Volume*, *5*(1). https://doi.org/10.55215/jetli.v5i1.7144

Pimada, L. H., Toba, R., & Rasyidi, A. W. (2020). Learning of Imla' using flashcards on writing skill at Islamic elementary school level in Samarinda. *Izdihar: Journal of Arabic*

Language Teaching, Linguistics, and Literature, *3*(1), 1-16. https://doi.org/10.22219/jiz.v3i1.11682

Putri, O. T. (2016). Peningkatan penguasaan kosakata Bahasa Inggris menggunakan media flashcard di SD Negeri Surokarsan 2 Yogyakarta [Increasing mastery of English vocabulary using flashcard media at SD Negeri Surokarsan 2 Yogyakarta]. *Basic Education*, 5(4), 355–365. https://journal.student.uny.ac.id/ojs/index.php/pgsd/article/view/958

Karpicke, J. D., & Bauernschmidt, A. (2011). Spaced retrieval: Absolute spacing enhances learning regardless of relative spacing. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 37*(5), 1250–1257. https://doi.org/10.1037/a0023436

Sainani, K. L. (2012). Dealing with non-normal data. *Pm&r*, *4*(12), 1001-1005. https://doi.org/10.1016/j.pmrj.2012.10.013

Supriatin, T., & Rizkilillah, V. P. (2018). Teaching vocabulary using flashcard. *PROJECT (Professional Journal of English Education)*, *1*(4), 479-485. https://doi.org/10.22460/project.v1i4.p479-485

Tambun, R. A. (2014, May). The influence of using crossword puzzle towards the students' vocabulary mastery. *Proceedings of International Conference on Education and Language (ICEL), 2*

Wahyuni, S., & Yulaida, H. (2014). Flashcards as a means to improve EFL learners' vocabulary mastery. *JEELS (Journal of English Education and Linguistics Studies)*, *1*(1), 47-61. https://doi.org/10.30762/jeels.v1i1.35