

THE EFFECTIVENESS OF LIKARI APPLICATION (FIVE WORDS IN ONE DAY) IN IMPROVING STUDENTS' JAPANESE VOCABULARY MASTERY

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ABSTRACT

This study aimed to explore the effectiveness of using Likari application (five words a day) in improving students' Japanese vocabulary. The main reason is because of the development of technology which is growing so rapidly. It makes learning

applications become very popular media that help the students in learning Japanese. This study involved 100 Senior High School students in Padang City who were taken by random sampling where they used Likari application during 60 days. This study was design as development research method used pre-test and post-test as instrument to measure the increasing of students' ability in mastering Japanese vocabulary. The results of this study showed that the average scores of the students in mastering Japanese vocabulary was increased 40%. In addition, the results of interviews with students revealed that 90% of students felt more motivated and active in using the application compared to conventional learning which was quite boring for students which popular called as generation Z. These findings indicated that Likari as a learning application can be an effective solution in improving students' vocabulary mastery, especially in learning Japanese.

Keyword: Mobile Application, Likari, Vocabulary, Learning, Effectiveness

INTRODUCTION

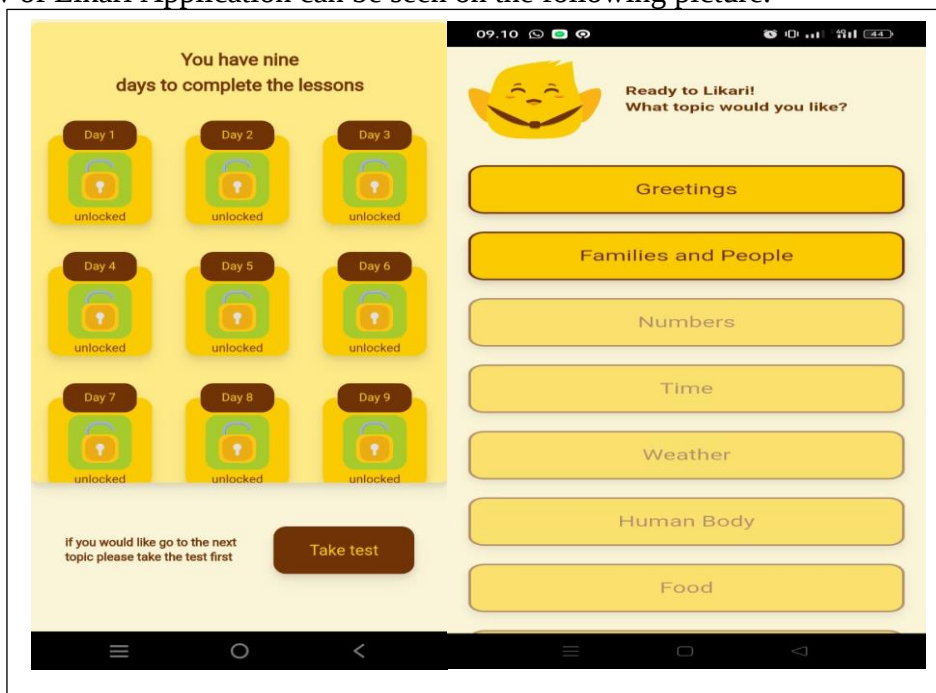
Japanese is increasingly popular as foreign language among Senior High School students, especially in Padang City. It is due to the increasing of their interest about Japanese culture. It is also because of wider job opportunities that require Japanese as one of foreign language that should be mastered by the students. However, there are many students face difficulties in expanding their vocabulary which is one of language aspects that is important in language learning. Adequate vocabulary mastery does not only affect students' speaking and writing skills. It also affects their understanding in reading texts and doing daily conversations.

In this digital era, various language learning applications have been developed to help students in learning Japanese independently. One of them that has been created is Likari (five words a day) which is an application designed for learning Japanese through mobile devices. The logo of Likari was inspired by endemic animals that live in Japan. *Shima Enaga* (bird) is nicknamed the snowball bird because it has white and stocky feathers. This bird is an icon in Japan because of its unique and cute shape.

Likari application introduces as a problem solving that show how to learn Japanese effectively and enjoyable. It also expressed in visual form and the formation of a *Shima Enaga* as the icon that becomes a brand personality. It can give a positive signal to the audience, so that it can achieve the audience's appeal and desire to recognize this application. In order to recognize the potential contained in this application, it can be detailed into several meanings, namely memorable, happiness, optimistic, discipline.

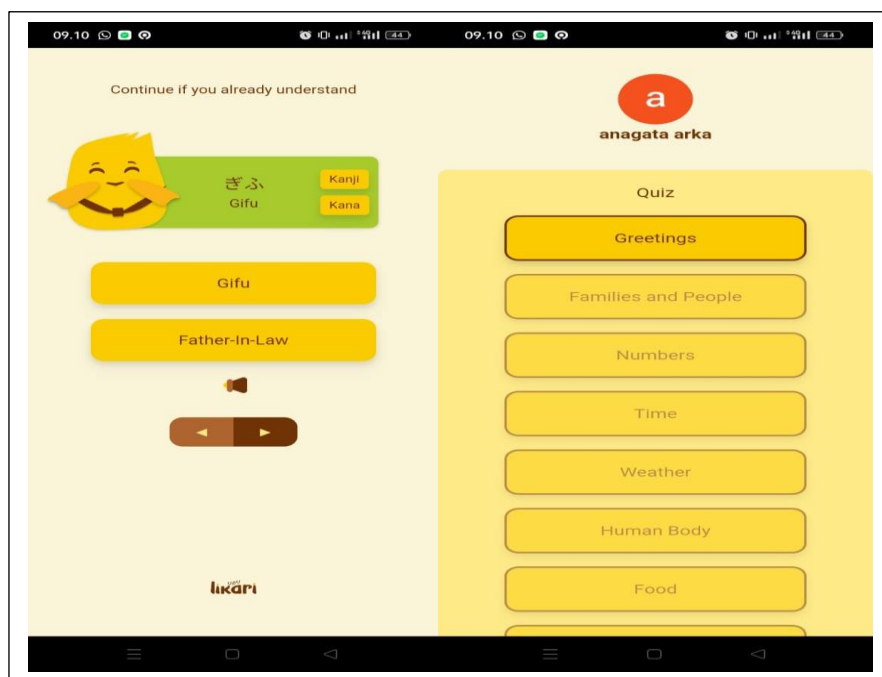
Logo component in this application uses logogram and logotype. The use of this logo is the two components must not be separated, except to change the colour of the specified logo type. Exclusive space is an empty space that must not be filled by any

component, use space outside the exclusive zone and the logo must not be reduced. The view of Likari Application can be seen on the following picture.



Picture 1. The View of LIKARI Application on Mobile Devices

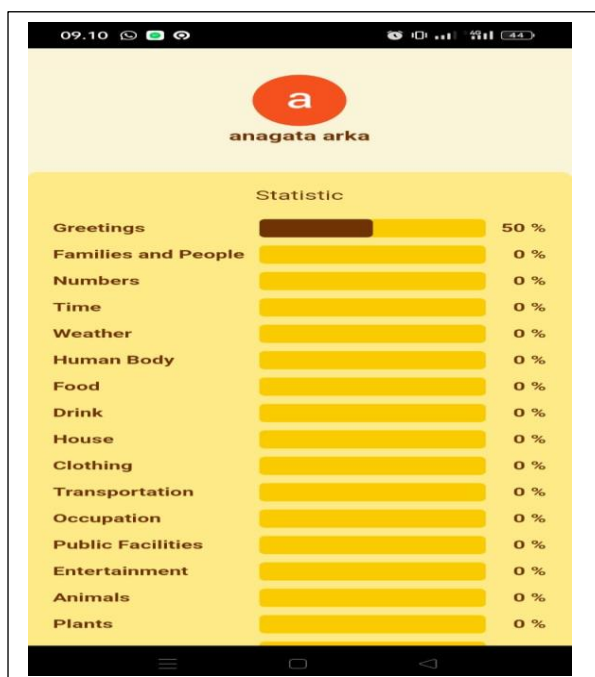
Likari Application offers an interactive and interesting method where it allows the students to enjoy their learning activity anytime and anywhere. Although there are many language applications are available, Likari Application brings a different performance that focuses on learning vocabulary. However, it still needs to be studied more about how the effectiveness of the use of the Likari application in improving the Japanese vocabulary for Senior High School students. It can be seen on the following picture where Likari Application give a personal view for the students as the users where it serves various topics of vocabularies that can be learned by the students independently.



Picture 2. The Personal View of LIKARI Application on Mobile Devices

The *Likari* application primarily focuses on enhancing Japanese vocabulary, with a structure built around learning five words each day. It can be seen that covers a wide range of topics, each designed to enhance students' understanding of specific vocabulary. The number of topics depends on the curriculum and the level of the learners, but the app typically includes topics from various subject areas such as greetings, families and people, numbers, time, weather, human body, and more. Each topic is broken down into manageable sections to ensure students can focus on mastering one set of words before moving to the next. The application constantly updates its content to align with evolving educational standards and student needs. It means to ensure that the topics remain relevant for the students' need.

Likari application provides detailed statistics or percentages that show students' progress in understanding vocabulary topics they have learned. It tracks each student's performance and visualizes their achievements, making it easy to identify areas of strength and weakness. The application generates insights into how well students comprehend the specific vocabulary sets, offering a clear overview of their learning progress. Teachers can use this data to adjust lessons and provide targeted support where needed. It can be seen on the following picture.



Picture 3. The Statistical View of LIKARI Application on Mobile Devices

This study aimed to explore about the effectiveness of Likari Application as solution to improve students' Japanese vocabulary at Senior High School in Padang City. Through understanding the impact of using this application, it is expected can provide the insight for educators and application developers in designing more effective learning strategies. This study used a quantitative approach which measured the increase of students' vocabulary before and after using the Likari application. This study also aimed to identify factors that influence the effectiveness of the use of Likari application. Therefore, this study does not only contribute to the development of language learning methodology, but also provides practical recommendations for the use of technology in Japanese language learning.

One of the important components in learning a foreign language, especially Japanese, is vocabulary. Mastering a larger vocabulary can help the students to speak, write, and understand Japanese better. Learning applications are an interesting and interactive tool that help students in learning Japanese as foreign language. In the era of globalization, the use of information-based technology is increasing along with the needs of human life. This technology influences the modern lifestyle of humans by helping them do more things more easily and efficiently. The field of education is one that uses a lot of technology in its implementation [1]. The world of education faces challenges with various changes of existing learning, so that it is necessary to make adjustments on the implementation [2]. The development of technology that occurs makes education more advanced and developed in order to make the society become more creative and educated [3] [4].

The development of technology also requires mastery of foreign languages. Language is the most effective way in communication where people can learn about the language more by using it [5]. To overcome this problem, many higher education institutions in Indonesia offer foreign language majors and programs to help students acquire foreign language skills. Several educational institutions in Indonesia are very affectionate about Japanese as one foreign language. Japanese is high on demand and loved by the Indonesian people, especially among the young [6]. The number of Japanese language learners in Indonesia beats South Korea by ranking second after China, even though Indonesia is not a country that has Kanji letters like in Chinese or Korean [7].

There are significant differences between Japanese and Indonesian, particularly when it comes to their writing systems [8]. Japanese employs four distinct scripts: Hiragana, Katakana, Kanji, and Romaji, each serving different functions in the language. In contrast, Indonesian relies solely on the Alphabet or Latin letters in everyday communication. As a result, learning Japanese can be more challenging, especially for beginners or those at the basic level, due to the complexity of its writing system.

Japanese is taught in elementary schools, high schools, and even in universities in Indonesia. In learning this foreign language, students should master the four language skills: speaking, listening, reading, and writing [9]. In addition, students must master four skills that usually become main point in learning a foreign language such as reading, listening, speaking, and writing where all of which are expected to be developed simultaneously to enhance their language proficiency. [10] Vocabulary is one of the most important components to be mastered. A quite understanding about vocabulary is essential can make a person communicate fluently [11]. Vocabulary mastery is important in learning a foreign language, because the better someone's vocabulary, the better he speaks [12]. Improving students' vocabulary mastery will have a positive impact on all four language aspects which help them in mastering Japanese as foreign language. Having a wide vocabulary can also help written and oral communication can be done smoothly [13].

However, there are some difficulties for students and college students in understanding and remembering Japanese vocabulary. They still have not found the right and interesting vocabulary learning method to increase their vocabulary and apply it appropriately in speaking or talking [14]. Related to the use of learning media, many teachers still do not use the latest technology to support the teaching and learning process. For example, some teachers still use letter cards and presentations to teach vocabulary and the basics of Japanese script, like hiragana and katakana. These traditional media often fall short in helping students truly master Japanese vocabulary. Furthermore, these media fail to actively engage students in the learning process, leading to a bored and unattractive classroom environment [15]. There are many mobile applications that can be installed on smartphones which are technology-based can be used in learning vocabulary solutions that are closer to students' lives [16]. However,

the use of smartphone or Android-based learning media that is not interactive will makes students uninterested in learning vocabulary independently [17].

In recent digital revolution era, teachers should be able to use technology as well as that make the students become more interested in learning [18]. Creativity can help to solve the problem in learning Japanese vocabulary. One way to do this is through creating new methods for a better teaching and learning process. The development of technology-based learning media can help improve students' vocabulary skills [19]. Interactive media is one of the learning tools that can help students learn. Interactive multimedia can help students learn the foreign languages independently because they are allowed to have a direct interaction with the applications [20]. In addition, they can make the learning process more interesting and interactive because they can be used anytime and anywhere [21]. Therefore, it has been proven that interactive media can improve vocabulary learning, especially learning Japanese as foreign.

The use of instructional media is an essential component of the teaching and learning process, as it helps to enhance the effectiveness of education. By incorporating various media, educators can present material in more engaging and accessible ways, which supports different learning styles [22]. The success of learning often depends on how well educators are able to select and use these tools to create an interactive and efficient learning environment. Proper use of instructional media not only helps clarify complex concepts but also accelerates the learning process. This allows students to achieve their learning goals more effectively and makes the overall learning experience more enjoyable and impactful.

This study aimed to develop an interactive learning media based on Android-based smartphones called "Likari", which is an abbreviation of "Five Words in One Day". This application can help students and college students in learning Japanese vocabulary. Students can increase their own vocabulary by using Likari. Likari application has a feature to remember five vocabularies in one day. It is accomplished with level options for users to choose. In order to measure the level of user's understanding, this level option has a choice of days equipped with a mini quiz or a kind of game. This application also offers a statistical feature on the level of user vocabulary understanding. In addition, Likari application has a menu for hiragana and katakana letters. The Japanese vocabulary learning tool created in this study has an updated concept of learning. The method of mastering five vocabularies in one day is expected can improve the students' understanding as the user of the application. This application is also included with images and audio which make it easier to understand if compared with previous language learning media.

METHOD

The design of this study was development research which was based on Borg and Gall's (2003). In this development research, after the product was designed, it was validated by two groups of experts: Japanese language teachers who teach at the high school level (material experts) and university lecturers who specialize in learning media (media experts). Furthermore, an pre-test was carried out by giving 100

objective questions to the Senior High School students. After the initial data was obtained, the students were asked to install the Likari application on their mobile devices. They had to use the application for 2 months to engage their vocabulary mastery in learning Japanese. After that, a post-test was taken after the students used Likari application. Therefore, it can show the effectiveness of using Likari application in improving students' Japanese vocabulary mastery. The data analysis techniques included normality and homogeneity tests, Wilcoxon signed-rank tests, Mann-Whitney U tests, and tests for differences in average values, all conducted at a significance level of 0.05.

RESULTS AND DISCUSSION

a. Product Validity Test

Based on the results of the validation test from media expert data, the percentage of validity can be obtained at 92.5%. Based on the data interpretation, included in criterion A with the percentage of 76% - 100%, the use of Likari application is included in very valid criteria level. Furthermore, from the material expert, the percentage of 93.3% can be obtained. Based on data interpretation, included in criterion A with a percentage of 76% - 100%, the material contained in the Likari application is included in very valid criteria level.

b. Practicality Test by Teachers and Students

After the application has been validated, a trial usage test is carried out by the teacher with the aim of improving students' Japanese vocabulary mastery, it can be seen in the following explanation:

1. Data on the Results of Practical Product Testing in the Form of the Likari Application by Teachers

Based on the results of the practicality questionnaire regarding Likari application that has been designed, the following practicality results were found:

No	Rated aspect	Practical Value	Category
1	Attractiveness	86%	Very Practical
2	Usage process	92%	Very Practical
3	Ease of Use	95%	Very Practical
4	Time Efficiency	90%	Very Practical
Average practicality		90,75%	Very Practical

The results of the practicality questionnaire regarding the Likari application reveal high levels of practicality across multiple aspects. The application was evaluated based on four key factors: attractiveness, the process of usage, ease of use, and time efficiency. The practicality scores were impressive, with attractiveness receiving an 86% score, the usage process at 92%, ease of use at 95%, and time efficiency at 90%. This resulted in an overall average practicality score of 90.75%, which falls into the "very practical" category.

The data collected from teachers through the questionnaire indicates that the

Likari application is highly effective and engaging. Teachers noted that the application's features and visual design, including the colors, were particularly appealing to students. These elements helped make learning more interactive and enjoyable, which in turn motivated students to actively participate and stay engaged while learning Japanese vocabulary on their own.

Furthermore, the ease of use and efficiency of the application contributed significantly to its high practicality rating. Teachers highlighted that the application spontaneous design made it simple for students to navigate, while the time efficiency of the learning process allowed for faster progress. This combination of factors suggests that Likari application effectively addresses the students' needs by providing an easy and time-saving method for mastering Japanese vocabulary.

Therefore, the Likari application has been proven to be a highly practical tool for learning Japanese vocabulary. Its engaging design and user-friendly interface encourage independent learning, making it an ideal solution for students looking to improve their vocabulary skills efficiently. Teachers also see it as a valuable resource that can enhance student motivation and learning outcomes.

2. Practical Product Data in the Form of the Likari Application by Students

The practicality questionnaire given to high school students, who participated in experimental classes using the LIKARI application, revealed highly positive results. The analysis showed that the application scored a 91% practicality rating, placing it in the "very practical" category. This high score indicates that students found the application extremely useful and effective in supporting their independent learning of Japanese vocabulary.

The high practicality rating suggests that the LIKARI application successfully simplifies the learning process for students. By making vocabulary learning more accessible and manageable, the app motivates students to engage more deeply with the Japanese language. As a result, students are not only able to expand their vocabulary more easily but are also encouraged to explore the language further, fostering a deeper interest in Japanese language studies.

c. Likari Application Product Effectiveness Test

In order to determine the effectiveness of the use of Likari Application, a large-scale usage trial was conducted on Senior High School students in Padang City who were studying Japanese subject. In order to see how Likari application was used, it was conducted a pre-test before using the application and a post-test after using the application to 200 students. The test was conducted by distributing pretest and posttest questions, each totaling 100 Japanese questions. The test results were analyzed using the SPSS application with the following results:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	68.24	200	4.074	.288
	Post test	92.68	200	6.572	.465

From the data analysis above, it can be seen that the descriptive statistical results of the two samples studied are the Pre-test and Post-test scores. For the Pre-test score, the average learning outcome or mean was 68.24. Meanwhile, the average score was 92.68 for the Post-test score. The number of respondents or students used as research samples was 200 students. Because the average score in the Pre-test results was 68.24 < Post-test 92.68. It means that descriptively there is a difference in the average learning outcomes between the Pre-test and Post-test results. Furthermore, in proving whether the difference is truly real (significant) or not, the results of the paired sample t-test were carried out which we can see in the following data analysis results:

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre test & Post test	200	-.020	.775

The results of the correlation test or relationship between the two data or the relationship between the pre-test variable and the post-test variable based on the output data, the correlation coefficient value (correlation) is 0.020 with a significance value (Sig.) Of 0.775. Because the Sig. value of 0.775 > probability 0.05, it can be said that there is no relationship between the pre-test variable and the Post-test variable.

Furthermore, in order to find the answer to the question in this study regarding whether or not the use of the Likari Application has an effect on the learning outcomes of Senior High School students in the Japanese subject, a paired sample t-test analysis was carried out as follows:

Paired Samples Test

		Paired Differences		95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper		
Pair 1	Pre test - Post test	-24.435	7.802	.552	-25.523	-23.347	-44.292	.000

Based on the output results of the "Paired Samples Test" above, it is known that the Sig. (2-tailed) value is 0.000 < 0.05. Consequently, it can be concluded that there is an average difference between the learning outcomes of the pre-test and post-test, which means that there is an effect of using the Likari Application in

improving learning outcomes for Japanese subjects in Senior High School students. If it is also compared it through looking at the results of the t-count analysis with the t table, it is known that the t-count is negative, which is -44.292. The negative t-count value is because the average value of the pre-test results is lower than the average value of the post-test. So, the negative value can have a positive meaning where the t-count value becomes 44.292.

Moreover, in order to find the t-table, it is analyzed based on the df value/degrees of freedom, namely N-1 so that the df value = 200-1 = 199 with a significance value of $0.05/2 = 0.025$. So, the t table value is obtained based on the distribution of the t table value of 1.97196. Thus, because the calculated t value is $44.292 > t \text{ table } 1.97196$. Then, as the basis for decision making, it can be concluded that the use of the Likari Application has an influence on improving the learning outcomes of Senior High School students in the Japanese subject. After knowing the influence of the use of the Likari Application in improving student learning outcomes for the Japanese subject, the N-Gain Score analysis was carried out to see how effective the use of the Application is in the learning process. In calculating the N-Gain Score, the following formula is used:

$$N \text{ Gain} = \frac{Skor \text{ Posttest} - Skor \text{ Pretest}}{Skor \text{ Ideal} - Skor \text{ Pretest}}$$

In order to see the frequency of distribution of pre-test and post-test data, it can be seen on the following analysis results:

Statistics

		Pre test	Post test
N	Valid	200	200
	Missing	0	0
Minimum		60	80
Maximum		75	100
Sum		13648	18535

From the formula, it is known that the post-test score is 18535, the pre-test score is 13648, the ideal score is 100, and the N-gain result is 0.769 (77%). Based on the category of N-gain value acquisition, it can be determined based on the N-gain value in the form of a percentage (%) by referring to the following table:

Table 1. Interpretation Category of N-Gain Effectiveness

Percentage (%)	Interpretation
< 40	Ineffective
40 – 55	Less Effective
56 – 75	Quite Effective
> 76	Effective

Based on the results of the N Gain analysis, it can be seen that the effectiveness of using the Likari application in the learning process is in the effective category. Therefore, it can be concluded that the use of the Likari application is effective in the process of improving Senior High School students' learning outcomes for Japanese subjects.

CONCLUSION

Likari is an application that can support students' Japanese vocabulary mastery by using more interesting and interactive media. It aims to prevent boredom in learning and enhance students' memory with its appealing design and sound features. The students' vocabulary mastery can be improved well if they regularly study and review vocabulary through the application habitually. Therefore, it can be said that Likari application is designed to make vocabulary learning more interesting and effective for students.

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