

Android Studio-Based Learning Media in Basic Bunpou Learning

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Abstract

This study aims to determine the effectiveness of using Android Studio-based learning media in basic Bunpou learning. The method used in this study is pre-experimental, with one group pre-test post-test design. The population in this study were students of the Japanese Language Education Study Program, Jakarta State University, 2017/2018 academic year with a sample of 20 students from beginner level. The instrument used were tests, in the form of a pretest-posttest, and questionnaire. From the statistical data calculation based on the results of the pretest and the posttest show that the t_{table} value at the 5% significance level is 2.02, while the $t_{calculate}$ value in this study is 4.86. Since the $t_{calculate}$ is higher than the t_{table} , it shows that the hypothesis alternative (H_a) of this study is accepted, which proved the using of Android Studio-based learning media in Bunpou learning is effective. And from the questionnaire known that the using of Android Studio-based learning media can overcome student difficulties (65%), which makes it easier to understand vocabulary (85%), grammar (85%), and auxiliary word (80%). In addition, this media is proven to also help overcome Basic Bunpou learning outside the classroom (90%).

Keywords : *Basic Bunpo, Android Studio-based learning media*

A. Introduction

In this era of industrial revolution 4.0 so many learning innovations are coming up around us, especially in the field of language learning such as vocabulary games, hiragana-katakana-kanji learning method, grammar learning, and culture introduction which are packaged attractively in only one hand, namely a smartphone. Smartphone seems to be an essential need in nowadays. Why not? All information can be easily and quickly received or shared only by using this item.

As we can see there are almost no student doesn't have a smartphone. Tragically, they prefer to pay off textbooks rather than not being able to buy this magical stuff. In addition, in terms of economics and practicality, smartphone with Android operating system (OS) is the most owned rather than iOS or the other OS.

So from that point of view, as a teacher this condition can be considered as an opportunity to improve the quality of learning by making their smartphone to be an interesting learning media. Android Studio application is chosen to improve the media in this study, because its flexibility to create the learning concept and content.

The Japanese Grammar (*Bunpo*) subject was used as an object in this study because *Bunpo* is one of the subjects that underlies learning other language skills such as *Choukai*, *Kaiwa*, *Dokkai*, and *Sakubun*. And it is expected that the use of media in the initial semester can minimize the level of anxiety of beginner students in learning Japanese.

Based on the mentioned above background of these problems, this study aims to determine the effectiveness of using Android Studio-based learning media on learning outcomes of Basic Bunpou.

B. Learning Media

Learning media in present can be understood as a channel or system of communication, information, or entertainment (Chan, Chin, Nagami, & Suthiwan, 2011). In relation to technological improvement in the era of industrial revolution 4.0, the presence of smartphones is an effective medium that can be utilized in the world of Japanese language education. In the field of education, this is closely related to the development of Information and Communications Technology (ICT). ICT-based teaching media is an alternative for teachers to facilitate students in the learning process.

UNESCO defined ICT as a combination of information technology with other related technologies, especially communication technology (Unesco, 2009). The teacher's role that was previously as a learning source itself, is now being a person who manage that learning source. In consideration of supporting the learning process, ICT has developed computer-based learning media which in field of language learning it is known as Computer Assisted Language Learning (CALL), and now the phenomena of smartphone has delivered a Mobile Assisted Language Learning (MALL).

C. Mobile Assisted Language Learning (MALL)

Mobile-Assisted Language Learning (MALL) deals with the use of mobile technology in language learning (Miangah & Nezarat, 2012). MALL considered as an ideal solution to support the language learning in term of time and place. Based on previous researches, MALL is used to deliver learning material as well as a facility to communicate among students or between student and teacher. Existing studies also utilize mobile phones to access information related to language learning such as learning videos or to send and receive e-mail using the language being learned (Kukulkska-Hulme & Shield, 2007). But with the presence of more sophisticated mobile phones, which called smartphones, MALL has developed into a more sophisticated learning media.

Miangah and Nezarat (2012) in their study show the advantages and disadvantages of MALL as shown below.

1. Advantages of MALL
 - a. The learning process can be conducted at anywhere in anytime,
 - b. Portable to carry out without any worries being left out of learning material,
 - c. Students become more independent in their learning activities.
2. Disadvantages of MALL

The small screen causes reading difficulty on such a screen, data storage and multimedia limitations, and the like. Especially, many of them are not designed for educational purposes.

Therefore, this study aims to provide a learning application which can be used in their mobiles and help them to make the *Bunpo* learning closer and more interesting for the beginner level of students.

D. Barriers in Learning Japanese Grammar

Based on a survey conducted on 28 elementary level students regarding the difficulty in learning *Bunpou* with the chance given to choose more than one choice of answers, the following results were obtained:

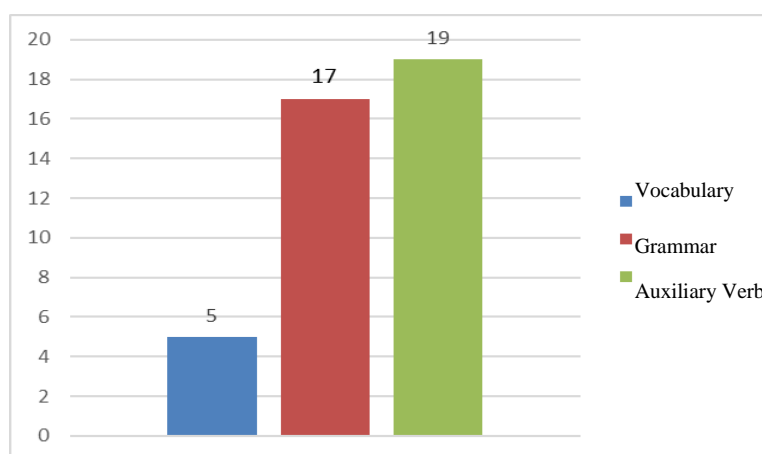


Chart 1. The Difficulty in Learning Basic Bunpou based on Survey of Beginner Level Students

As shown in the chart that most students find it difficult to understand how to use auxiliary verbs, followed by sentence patterns, and finally vocabulary.

Whereas from the syllabus or Program Plan for Semester Learning Activities (RPKPS) at the Bunpou subject in the Japanese Language Education Study Program at the State University of Jakarta it is known that the goal in this subject is the competency for using a limited and simple sentence structure based on the sentence patterns and vocabulary learned. Since the auxiliary verbs are the part that can't be ignored from the grammar lesson, it becomes a task for the teacher to help them to overcome the difficulties.

E. Android Studio

Based on IntelliJ IDEA, Android Studio is an Integrated Development Environment - Integrated Development Environment (IDE) for Android application development. Android Studio was chosen by Google as its official IDE because it has many features that make it easier for program makers, especially for early level programmers. In addition, Android also has many libraries that are ready to use. Here are the advantages of Android Studio:

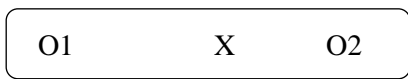
1. Instant Run,
2. New features owned by Android Studio can make the program run quickly,
3. Auto Completion,
4. Android Studio is a smart IDE code editor because it will automatically display the suggested code you want to type,
5. Flexible Build System,
6. Developers can build Android applications,
7. Able to make applications for all Android devices such as Smartwatch, tablets, Android TV and even Auto Android,
8. More powerful Layout Editor,
9. Has a powerful and reliable layout editor.

That's why in this study Android Studio was chosen because it can create the application learning system easier in terms of application concepts, content material, design and others, in order to make learning more interesting.

F. Method

The method used is pre-experiment with one-group pre-test post-test design. In this design, before treatment the students carried out a pre-test (O₁) and after the learning using the improved media they carried out a post-test (O₂). This design is used in order to find out the effectiveness of the use of Android-based application media on learning Bunpou.

The following is a one group pre-test post-test design research design :



Notes :

O₁ : Pre-test before treatment is given.

O₂ : Post-test after treatment is given.

X : Treatment of the experimental group.

(Emzir, 2008)

Furthermore, from the results of the pretest and posttest then a t-test was conducted to find out whether learning with the media developed was effective or not in the subject of Basic Bunpo.

The results of this t test are the t values sought by the following formula:

$$t_0 = \frac{Mx - My}{SEM_{xy}}$$

Notes :

t₀ : t_{value}

M_x : Mean of X variable
 M_y : Mean of Y variable
 SEM_{xy} : Standard error difference of mean X and Y
 (Sudijono, 2007)

And to find out students' responses more clearly about the use of this media, the questionnaire was also distributed.

G. Population and Sample

The population of this study is the semester 2 students of Japanese Language Education Study Program at Jakarta State University. And the samples are 20 beginner level students in 2018/2019 academic year Japanese Language Education Study Program, Jakarta State University.

H. Result and Discussion

The media developed in this study is the Basic Bunpo learning application named “Bunpo Benkyou” which is basically the material contained in the Minna no Nihongo II book (Tanaka, 2004) with modifications to make it easier for students to review material outside the classroom. The following is the display and content contained in the Bunpo Benkyou application.

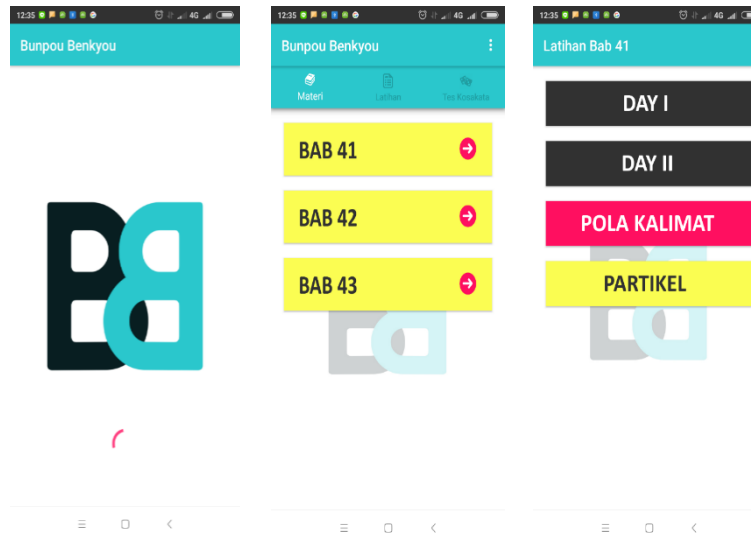


Figure 1. Display of Bunpo Benkyou Application (1)

When the experiment was conducted, chapters 41, 42, and 43 became learning objects. Each chapter contained material, exercises, and games. And for the material and training section consists of Day I and Day II, that is because each chapter is given in 2 sessions at UNJ. In the game section, because of the limitations of the researchers, the game can only be developed in the level of the vocabulary game. At the end of the exercise and the game, students can find out their scores so that they can evaluate their own learning progress.

The following is a vocabulary list, sample of game and scores on the Bunpo Benkyou application.

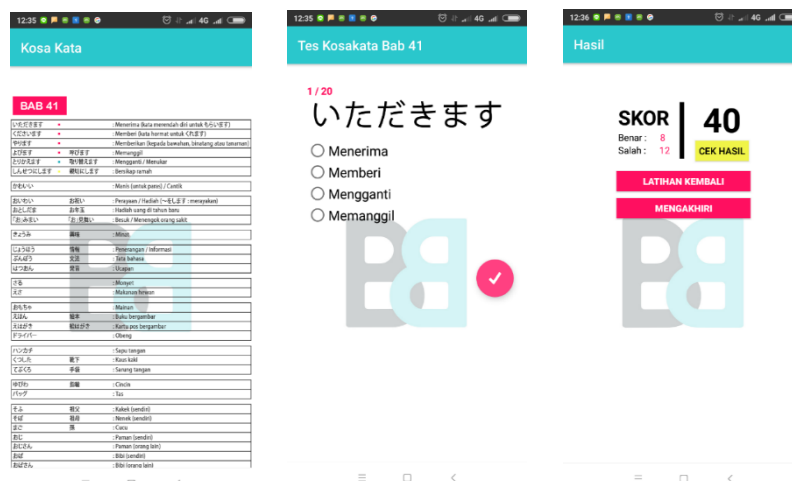


Figure 2. Display of Bunpo Benkyou Application (2)

As shown in the figure above, students can see the vocabulary list whenever they need it. This feature makes it easy for students to remember vocabulary anywhere, especially because in our course vocabulary test is always carried out every time you learn a new chapter. Then they can train their memories through practicing vocabulary in the game section.

The experiment was conducted on May 7, 2018 until May 21, 2018. In the first session or Day I students conducted vocabulary test, after that the teacher explains a new grammar and its usage and discuss it with student. In the end of the lesson, they did the exercises, both of grammar and auxiliary verbs ones. While in the second session or Day II students were asked to work on vocabulary games first, then continued with discussion of sentence patterns and ending with training sentence patterns and auxiliary verbs.

While conducting the experiment found some advantages and disadvantages of using this media. The advantages are that this media is interesting and joyful because students feel more relaxed in working on practices, and also practical because they can review material that has been or will be learned at any time. This is consistent with the statement of Kemp and Dayton (Arsyad, 2007) that the positive impact of using media as classroom learning is to make learning more interesting, can be done anywhere and anytime, and improve students' positive attitudes in the process of learning. While the disadvantages are because the explanation of the sentence pattern is exactly same as the one in the textbook, students do not feel a significant difference especially the small screen of mobiles makes them prefer to read it in a textbook. Besides that, there are some smartphones that are not compatible with the application which caused the screen cannot be enlarged.

From the results of the pretest and posttest, the results are as follows:

Table 1. Comparison of Pretest and Posttest Results

| No. | Sample | Posttest (X) | Pretest (Y) |
|-----|----------|--------------|-------------|
| 1 | Sample 1 | 80 | 75 |
| 2 | Sample 2 | 90 | 25 |
| 3 | Sample 3 | 75 | 55 |
| 4 | Sample 4 | 90 | 75 |
| 5 | Sample 5 | 85 | 60 |
| 6 | Sample 6 | 90 | 40 |

| | | | |
|------|-----------|-------|------|
| 7 | Sample 7 | 85 | 35 |
| 8 | Sample 8 | 90 | 85 |
| 9 | Sample 9 | 75 | 45 |
| 10 | Sample 10 | 70 | 55 |
| 11 | Sample 11 | 40 | 10 |
| 12 | Sample 12 | 85 | 45 |
| 13 | Sample 13 | 75 | 35 |
| 14 | Sample 14 | 75 | 70 |
| 15 | Sample 15 | 85 | 75 |
| 16 | Sample 16 | 60 | 75 |
| 17 | Sample 17 | 60 | 35 |
| 18 | Sample 18 | 65 | 30 |
| 19 | Sample 19 | 85 | 50 |
| 20 | Sample 20 | 75 | 35 |
| Σ | | 1535 | 1010 |
| Mean | | 76.75 | 50.5 |

From these results, the standard deviation is sought to determine the standard error and the following results are obtained:

Table 2. Standard Error Difference of Mean X and Y

| | <i>Posttest (X)</i> | <i>Pretest (Y)</i> |
|-------------------|---------------------|--------------------|
| <i>Mean</i> | 76,75 | 50,5 |
| Standar Deviasi | 12,58 | 19,93 |
| Standar Error | 2,89 | 4,57 |
| SEM _{XY} | 5,40 | |

Then the SEM_{XY} value is inserted into a formula to find out t_{value} as follows:

$$t_0 = \frac{Mx - My}{SEM_{xy}} = \frac{76,75 - 50,5}{5,40} = \frac{26,25}{5,40} = 4,86$$

The t_{value} is then compared with the t_{table} . t_{table} on db 38 with a significance level of 5% is 2.02 , so it shows that $t_{\text{value}} > t_{\text{table}}$, or $4,86 > 2,02$ so that it proved that the media using this Android Studio based application is effective in Basic Bunpo learning.

I. Conclusion

Although this media has several weaknesses but from the results of statistical calculations, it is found that the use of Android Studio-based application as learning media on Basic Bunpou course is effective for second semester students of Japanese Language Study Program, Jakarta State University 2017/2018 academic year. And from the questionnaire known that the using of Android Studio-based learning media can overcome student difficulties (65%), which makes it easier to understand vocabulary (85%), grammar (85%), and auxiliary word (80%). In addition, this media is proven to also help overcome Basic Bunpou learning outside the classroom (90%).

Based on the results of experiments and observations in the field, this application is more suitable to be used as a supporting media, especially the exercises sections. For further study, there is necessary to design more practical and interesting explanation of grammar content section.

J. Reference

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