ANDROID APPLICATION FOR ENHANCING JAPANESE JLPT N5 KANJI ABILITY

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Abstract

This study aimed to create a medium for learning and memorizing Japanese kanji using an Information and Communication Technology by developing an android application. The level of Japanese Kanji contains in this application is equivalent to Kanji standard on Japanese Language Proficiency Test Level 5 (N5). Different from other media, the media designed as user friendly for students who were willing to learn independently using smartphones. Further, this medium was technology-based software equipped by some features such as 'Kanji' feature as a learning step, and 'Quiz' as an exercise step. In the learning step, there are N5 Kanji lessons containing 105 kanjis, including its *kunyomi* and *onyomi* reading. The result showed that the software is easily used and understood by Indonesian student. Other than kanji list and its reading feature, this media also has Indonesian translation, vocabulary examples and its Indonesian translation. The exercise step is equipped with questions and multiple choice of answer, and also equipped with a count-down timer. Hence, by only using this application user can learn independently not only about Kanji and its reading, but also its meaning and its using in vocabularies. Indeed, the existence of this software will give advantages for learners in learning independently, specifically Indonesian learner.

Keywords: Japanese language, Language education, Indonesian student, Software technology.

1. Introduction

According to the worldwide 'Survey on Japanese Language Education Abroad' conducted by the Japan Foundation, Indonesia is put in the 2nd rank for the most populous Japanese learners in the world after China, in which the number of

learners reaches near to 880 thousand [1]. The main reason is because understanding Japanese language gives a good prospect in business requirement. Further, student thinks that this language has intellectual stimulation, personal challenge, and cultural attraction [2].

One of the Japan's most recognized language proficiency tests is the Japanese One of the Japan's most recognized language proficiency tests is the Japanese Language Proficiency Test (JLPT), called in Japanese as Nouryoku Shiken. JLPT consists of five levels, in which the 5th level (N5) is the lowest level for understanding Japanese, and the 1st level (N1) is the highest. This test consists of four main parts, including "Kanji and Vocabulary" (Moji Goi), "Grammar" (Bunpo), "Reading Comperehension" (Dokkai), and "Listening" (Choukai). From those tests, one of the most difficult parts is Kanji. This Kanji is not only found in the "Kanji and Vocabulary" part only but also integrated in all tests and questions, meaning that mastering kanji is inevitable. But, kanji is quite difficult to learn especially for students who use Roman letters in daily life. Thus, every learner agrees that kanji is one of the most challenging subjects in learning Japanese [3]. However, in Japanese learning application, especially for learning Kanji even if there are some media developed, most of the methods utilized only Power point or Adobe [4]. Furthermore, conventional methods such as dictionaries and textbook, are still mainly used in learning Kanji in school or university. For that matter, in order to learning, memorizing and exercising Kanji more properly, a greater effort and supporting effective media are required.

To meet the above demand, some researchers have developed media to help and improve ability in Japanese Kanji, including: (1) media image picture, (2) smart card, (3) the quartet card, and (4) interactive media [5,6]. Although these media are attractive for enhancing student motivation, several limitations are persisted. Specifically, the suggested methods are not user friendly for student who want to learn independently. Moreover, these Kanji media mainly consist of Kanji list and its reading, without translation, its examples in vocabularies, nor exercise feature.

Based on our previous studies [6], the purpose of this research was to develop an application running on the smart phone operating system (Android) for learning Kanji more comprehensively. This media was a technology-based software equipped with some features including Indonesian translation, vocabularies examples and kanji exercise. Android operating system (OS) is an open source system that is easily developed for beginning programmers. In addition, since Android than IOS have been well used in Indonesia, the present designed media can be accessed by students at any time and used independently only by downloading into their smartphones. Moreover, this application has some features including the meaning of kanji in Indonesian, the example of its use in vocabularies, as well as the meaning of those vocabularies in Indonesian. Latter features are still hard to find or even cannot be found in another Kanji applications. Indeed, this will give strong advantages of this application to be used broadly.

2. Research Methodology

2.1. JLPT N5 application Kanji material

The Kanji material contained in this application were 105 Kanji characters which are included in the JLPT Level 5 kanji list. All Kanji featured in this application is as shown in Fig. 1. In addition to the Kanji, the material also includes how to read the kanji in *onyomi* reading (the Chinese style pronunciation) and *kunyomi* reading (the original Japanese style pronunciation). Moreover, this application included the meaning of kanji in Indonesian as well as the example of its use in vocabularies.

一	父	本	下	大	車
二	母	休	左	長	国
三	友	語	右	半	円
四	女	午	北	分	話
五	男	前	南	学	聞
六	人	後	東	校	食
七	子	時	西	生	読
八	日	間	外	山	来
九	月	毎	名	川	書
十	火	先	高	白	見
百	水	今	小	天	行
千	木	何	中	雨	出
万	金	上	年	電	入
土	会	気			

Fig. 1. List of kanji used in this media.

2.2. Application of kanji media

The Kanji N5 application was developed using the "Construct 2" development program (See Fig. 2). Construct 2 is a Java Script based application. Construct 2 has a set of tools that covers the whole basic need to create an application on android. The media has development tools, tools for drawing, debugging tools, and basic converter to convert applications to various platforms/medias. In addition to Construct 2 as the main development program, we used Adobe Photoshop to create the illustration for the application displays. The "Kanji N5" application making process is as seen on Figs. 3-4.

The process of scaling of home screen's menu is shown in Fig. 3(a). All buttons that will appear on home screen's display is saved on the off-screen part (outside of the application's view) with a predetermined position. Thus, when

running the application, the button will move to the position (coordinates x, y) that have been determined. The menu does not only move but also interact with user. As a menu (button) is selected or touched, the selected menu will get enlarged as its response, making user can see the menu better (see the 'Kanji' menu on Fig. 3(b)).

In the "Quiz" feature making process (See Fig. 4), development program and questions as its contents are stored in one place or special folder. "Quiz" section is formed by two parts, which are 'timer' and 'question'. In timer part, timer is created by counting backward per second starting with the time that already set previously (15 seconds). If the counting reaches 0 (zero) and there is no answer selected by user, the program will automatically calculate the score as 0 (zero) and continue to the next question. In 'question' part, first we made question lists and those variables with specified number and codes. Along with this, we provide the information about which answers are right and which answers are wrong.
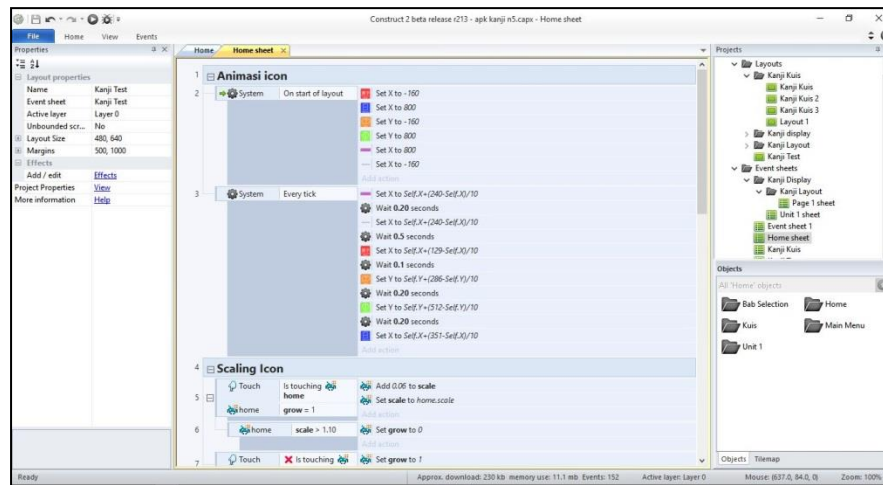

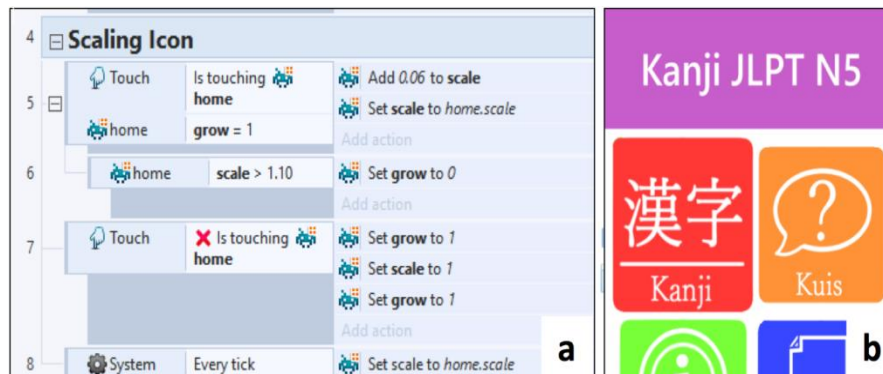**Fig. 2. The script code for developing opening menu or home screen's display.**

Fig. 3. The scaling process of opening menu or homescreen's display. (a) is a script code for scaling methods, (b) is the display as the result of the scaling in (a).
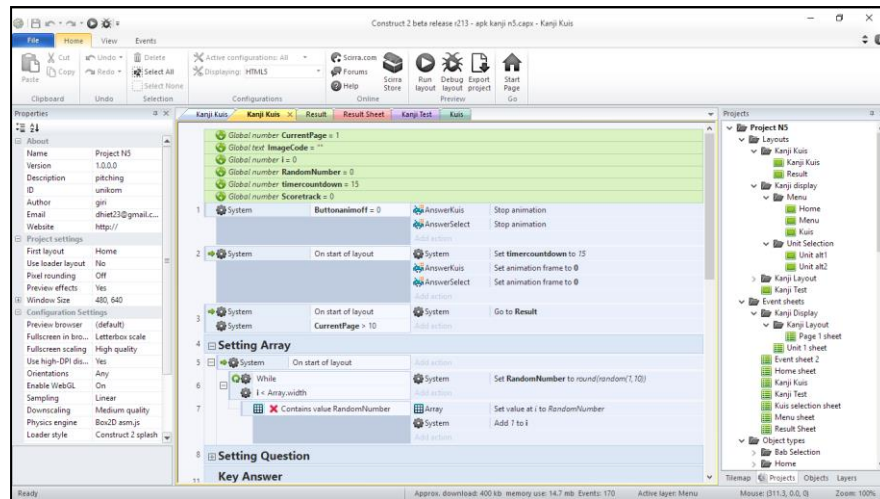
Fig. 4. The developing process of "Quiz" feature.

3. Results

3.1. Starting Kanji JLPT N5 application

The appearance of the media when users use them is presented in Fig. 5. The first appearance is a Construct 2 image, shown in Fig. 5(a). Then, after several seconds, the screen changed into selection buttons, displayed in Fig. 5(b).
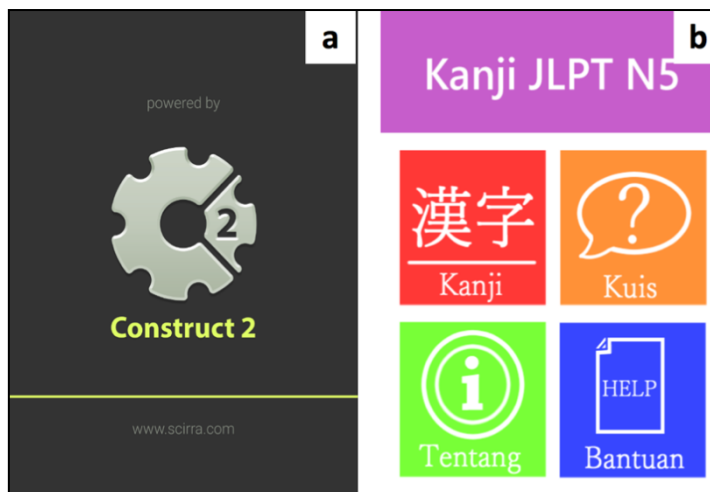

Fig. 5. The photograph images of 'Kanji JLPT N5' application display. (a) is the view when user first opens the application. This opening screen shows program name's display (Construct 2) that had been used to make this application. (b) is the main menu display showing 4 features of the application.

The main menu on this Kanji JLPT N5 applications contains 4 features which are "Kanji" (Kanji), "Kuis" (Quiz), "Tentang" (Information about application), and "Bantuan" (Help). "Kanji" menu contains all the N5 Kanji lesson's material, containing 105 kanji characters. In the "Kuis" section, exercise for users to challenge their kanji ability after learning takes place. These "Kanji" and "Quiz" sections are the main menu of this application, and other sections such as "Tentang" and "Bantuan" are complimentary menus to help user understand how to use the application (see Fig. 5(b)).

3.2. Kanji lesson's contents

When user selects Kanji menu from home screen (shown in Fig. 5(b)), user will enter the display of Kanji as shown in Fig. 6(a). On the Kanji menu, the initial display shows 9 lessons; each lesson has different kanji contents and levels of difficulties. When user selects one of the lessons (for example, 1 lesson is selected), the kanji list will appear in the lesson (displyed in Fig. 6(b)). In this section, kanji and its meaning is displayed briefly, making easier for users to find out what kanji is available on the section along with its meaning by just looking at the kanji list before going into the complete kanji's description. When the user selects one of the kanji in the list, it will appear as shown in Fig. 6(c). Kanji shown in Fig. 6(c) is number two (二), and the description can be viewed in in detail in Fig. 6(c). This section contains "Kanji", "Cara baca" (how to read), "Arti" (definition), "Contoh kata "(example in vocabulary). On the "Cara baca", there are two reading styles, which are onyomi and kunyomi. The kunyomi reading style is written in hiragana, while onyomi is in katakana. Other than that, this application also contains kanji's meaning in Indonesian, and the example of kanji's use in vocabularies. These two features are the main strong and superior points from this application compared with other media since there is no Kanji application that has Indonesian translation, and contains vocabularies examples along with its Indonesian translation until now.
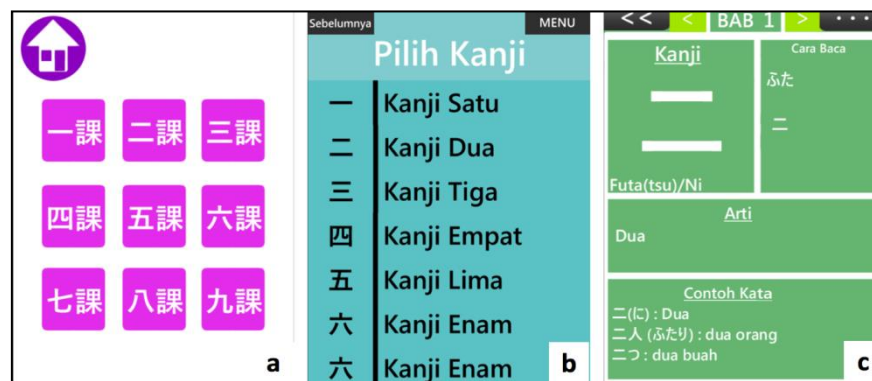

Fig. 6. Kanji lesson content. (a) shows the display when user click the "Kanji" feature. This display shows 9 lessons containing 105 kanjis overall. (b) is the view when user opens one of the lesson (1st lesson in this case). (c) is the complete display of Kanji's explanation when user click one of the Kanji list shown on the previous display.

3.3. Kanji quiz's contents

After finishing learning kanji through the lesson features, or when user wants to test their kanji's ability, user can use the "Kuis" (Quiz) feature, a question will appear as soon as user opens "Quiz" menu from home screen (shown in Fig. 7).

Fig. 7. Kanji Quiz's content. (a) display that appears on screen as soon as user open the "Quiz" menu. This display shows Kanji that learned in each lesson. (b) view when user tried to choose one of the answers. The one without streak is the correct answer, and those with streaks are the incorrect ones. (c) display of total score when user finished their quiz.

In this section, a question will appear as soon as user selects the "Quiz" menu on the home screen. The question coming up in this feature is all about kanjis that have been learned in each lesson (see Fig. 7(a)). The form of this quiz is multiple-choice problem. Each question appears with three choices of answers, where one of them is the right answer and the other two choices are wrong. Also, as soon as the question appears, automatic countdown timer appears. This timer will start counting from 15 to 0 seconds. If user cannot answer the question until the time is out (0 second), then next question will appear automatically. If user answered correctly, the answer turns green, and one strike appears on the wrong answers (see Fig. 7(b)). When all questions have been answered, the result appears on the next page. For example, if the correct answer is only 2 (two) of 10 (ten) questions, then the display will be "2/10" for the total score (see Fig. 7(c)).

4. Discussion

The first part that must be discussed in this study is explaining the main reason for the development of Kanji software media in android application. Although many supporting media have been introduced equipped with portable audio-video and computing devices, the learning process will easily occur if we found good carrier device that is popular. Computer-related technology has proven itself to be generally useful in the field of education, in particular, as teaching and learning tools [7]. And, one of the best strategies in the media using computer is the smart phone [8]. smartphone is used due to its convenience. Indeed, infiltrating this media into the smart phone promotes that the user can use the media itself with no limitations to time and place. However, to make broader user, although there are

many types of smartphones, analysis of the number of users for smartphone types must be done. Then, since android has the most number of users [9], applying this media in Android will boost the more user than other apps.

The second part in this study is how to get users understand and learn faster about the language. Many media and tools regarding the smartphone have been reported. However, since the objective of this media is for Indonesian learners, application must be supported with their languange. Supporting media with their mother languange will give benefits for making faster in understanding foreign languange [10]. Indeed, different from other kanji media containing list with its reading feature, the present media will give more positive impacts due to additional Indonesian translation for each kanji. Vocabulary combination, examples, as well as quiz supported by Indonesian translation will also give benefit for user to learn independently.

In the case of quiz, each question is assigned with the countdown timer with score feature. This makes the student need to enter their responses quickly. (Schlegel). The first benefit from this type of quiz is a good source of motivation since the students have to prepare more learning processes [11]. In addition, by applying countdown timer, there are many factors being involved, including improving physical motoric, cognitive, psycology, and demographic skills. All of these factors will improve physical perspective (vision, hearing, hand, etc), attention/focus of control, and memory [7]. Indeed, when learners can optimize these factors, the present media will be interesting. To support this factors, the media is also created with some interesting design to decrease the stress factor. Finally, the appearance of score after the quiz is also presented, in which this is used for self-evaluating the learner's skill after remembering the kanji [11].

5. Conclusion

We have successfully developed our Kanji application for beginners, especially for Japanese language learners who wants to learn Kanji that appears on Japanese Language Proficiency Test level 5 (N5). This application consists of some features such as Kanji Lesson and Quiz. The Kanji lessons do not only contain list of Kanji and its reading, but also include kanji's meaning in Indonesian and vocabulary examples. This application also has Quiz feature with multiple choice of answers and timer to motivate learners as well as making the quiz more interesting. The total score after quiz is displayed in the end of the quiz. This application is one of the best Kanji applications since this application is more comprehensive than the other applications, especially since the application has Indonesian translation and vocabulary examples. Moreover, this application uses an Android application that is user friendly and convinience. Indeed, this application can be used by teacher as either learning or evaluation tool. Interestingly, this kanji can be used for Japanese students as a learning media or even for common people who wants to learn Japanese Kanji independently without taking classes. Finally, with its vocabulary examples and its translation, Japanese learners from Indonesia specifically could not only learn Kanji but also understand on Japanese vocabularies only by using this application.

Acknowledgements

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