The Development of Interactive E-book of Teaching Indonesian for Speaker of Other Language (TISOL) Containing Local Wisdom with Scientific-Thematic Approach

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Abstract. TISOL learning definitely needs to notice planning, processes, evaluations, learning materials, media, and methods used. However, selecting the media and learning material should give foreign students the description about Indonesia condition so that can lead them to be more interested in learning Indonesian language. This study was a developmental research aiming to apply a model of the local wisdom-based interactive book for TISOL students in Indonesia. The research stages are applied 4 stages, namely (1) preliminary study or exploration, (2) prototype development, (3) prototype test, and (4) dissemination or product implementation. The location of this study was institutions which organizing TISOL in Indonesia. This study was planned to be conducted in 3 years to get data as a reference for the product development and implementation in term of the interactive e-book. Sources of data were (1) TISOL students, instructors, organizers and persons in charge; (2) TISOL teaching-learning activities in TISOL institution; (3) data which obtained through questionnaire containing questions to emphasize the result of the exploration, and (4) textbooks used by BIPA institutions and also learning curricula. After passing some assessment, such as expert assessment, small-scale and wide-scale tests, and experiment class test, interactive e-book for TISOL learning conducted in high level score. Therefore, it can be said that the use of TISOL interactive e-book on learning process as a variation in giving learning materials in TISOL. It can be also considered as an input for TISOL learning developers to give innovation on their products developed.

Keywords: Development, Interactive E-Book, TISOL, TISOL Learning, Local Wisdom, Scientific-Thematic Approach

1. Introduction

TISOL learning in Indonesia increasingly develops [1]. This indicates that Indonesian language attracts people’s interest, and TISOL program is also opened in some universities in Indonesia [2]. TISOL learning definitely needs to notice planning, processes, evaluations, learning materials, media, and methods used. However, selecting the media and learning material should give foreign students
the description about Indonesia condition so that can lead them to be more interested in learning Indonesian language. Besides, the appropriate learning materials can affect the success in achieving the goals of Indonesian language learning. This is in line with previous studies [3] [4] [5].

The huge interests of foreign speakers to learn Indonesian language are not accompanied with good textbooks [6] [7]. A study conducted by Mustakim [8] claims that not all BIPA books provide materials about social and culture of Indonesia because only 23 from 43 books or 56% BIPA books provide those materials. Besides, another study by Subektiningisih [9] also focuses on analyzing BIPA Lentera Indonesia textbooks from Book Center indicating that books can slightly train foreign speakers’ communication skills, for integrating speaking and listening skills is limited on comprehensive training. In addition, the introduction of all training programs is provided in English language.

The weakness of textbooks separated from cultural contents is that instructors need time to introduce culture [10]. Hence, developing culture and local wisdom-based textbooks provided for BIPA students needs to be carried out. Books must contain local wisdom themes to reinforce language materials and to improve students’ communication skills. Each theme is emphasized by video related to cultural events, so students get the intial knowledge to learn language skills [11].

In general, this study aims to develop the local wisdom-based interactive e-book for foreign students. In specific, it is objected to describe TISOL e-book conditions in Indonesia, to investigate the need of TISOL e-book development, and to implement the android-based e-book containing local wisdom, which can be used in BIPA institutions in Indonesia.

This study is very significant and urgent to increase the competitiveness of Indonesia in International level as a realization of the soft diplomatic relationship. With its cultural wealth, Indonesia is able to compete with other countries and become the cultural reference in the world. In a consequence, information technology-based interactive BIPA textbook or e-book needs to be provided for foreigners to make them closer to Indonesia. The result of this study can contribute to the development of BIPA and give the impact to culture-based tourism. In the cultural development, this study is able to be a pioneer of Indonesian culture preservation because many people learn and develop it.

2. Method
This study was a developmental research aiming to apply a model of the local wisdom-based interactive book for TISOL students in Indonesia. It is used to design a new product or to modify the existed product equipped with its procedure in use [12]. Before massively used, the product developed must pass through the test and revision until the expected effectiveness is achieved. This is in line with the definition above proposed by Borg and Gal [13]. The research stages are 10, but this study applied 4 stages, namely (1) preliminary study or exploration, (2) prototype development, (3) prototype test, and (4) dissemination or product implementation. The location of this study was institutions organizing TISOL in Indonesia. This study was planned to be conducted in 3 years to get the information, as much as needed as a reference for the product development and implementation in term of the interactive e-book. Sources of data were (1) research subjects, including TISOL students, instructors, organizers and persons in charge; (2) events, referring to TISOL teaching-learning activities in TISOL institution; (3) research instruments, obtained through questionnaire containing questions to emphasize the result of the exploration, and (4) documents, in terms of textbooks used by BIPA institutions and also learning curricula.

Technique of data collection included (a) in-depth interview, in which the informants were instructors, students, BIPA program organizer, and policy-maker focusing on textbooks; (b) class observation conducted passively (participant observation) to understand the use of BIPA textbooks; (c) questionnaire, to obtain perception data of instructors, students, organizers, and policy-makers. Data validity was obtained through triangulation, member checking, and colleague checking through discussion and focus group discussion (FGD). Technique of data analysis was the interactive analysis model. The procedures were (1) data collection (focusing the collection data); (2) data reduction
3. Results and Discussion

The initial stage is conducting the identification on potentials and problems. The information is obtained through questionnaire and informal interview to BIPA instructors in observation locations. The result shows that the development of local wisdom-based interactive e-book with STA for TISOL affecting foreign students’ learning activities and results. Out-door learning is a learning strategy prioritizing the use of media surrounding the class with scientific thematic approach. An assessment for the quality of foreign students’ activities is clasically conducted by confirming the presentage of foreign students’ activeness with certain parameter, namely (1) learning materials or media used, (2) facilities, (3) perception on electronic learning materials, (4) material characteristics, and (5) instructors’ and foreign students’ conditions.

The learning material in terms of slide presentation is a material outline that will be taught and compiled by making the essential materials from the book. The use of book and slide presentation is still in complaint because material visualization is still limited. The material visualization is needed to stimulate students’ interests. It is in line with Ristanti [16] who stated that visual media can increase students’ learning motivation [17]. Moreover, the required data to develop interactive e-book materials is collected from various sources. List of the need are (1) software, (2) hardware, and (3) learning equipments.

After fulfilling those needs, designing interactive e-book development that is appropriate with learning materials is conducted. They are designing media in terms of interactive e-book and designing the test for interactive e-book product. Besides, in the designing process, some variables are added in learning process to achieve the optimal result. This is based on local wisdom in Indonesia and uses scientific thematic approach in its implementation. The combination of these various variables aims to conduct the optimal TISOL learning in Indonesia and makes foreign students able to learn Indonesian language individually with the employment of this interactive e-book.

The implementation of assessing interactive e-book qualification uses the book qualification assessment instrument established by National Education Standard Institution [18][19]. This assessment consists of material and media qualification assessments. The result in material assessment indicates 225 score or 95% (really qualified) from the validator I in material and 210 score or 90% (really qualified) from the validator II in material. Besides, there are some suggestions from validators in media, including the effort to use the appropriate video, to use the video that is easy to understand, and to use the interesting display of pictures in the interactive e-book.

The small-scale test is conducted to know the readability of the interactive e-book for foreign students. The samples are 12 students from 12 TISOL institutions in Indonesia. They are obtained from clever students from each class in TISOL program because they have gotten materials before. This small-scale test indicates the positive response as much as 90% implying that the interactive e-book is qualified. In this test, there is only a small amount of revision needed.

In addition, the wide-scale test is conducted to know the effectiveness of the interactive e-book in learning activities and its impact toward learning results of foreign students in Indonesia. It is conducted in four TISOL institutions including Universitas Negeri Padang (UNP), Universitas Sebelas Maret (UNS), Universitas Negeri Makassar (UNM), and Universitas Udayana (UNUD) with total sample as mush as 100 foreign students. The obtained data include students’ learning results (pre-test and post-test scores), students’ activities in using the product, psychomotoric scores, students’ responses, and instructors’ responses on the use of interactive e-book as the learning material. The data of students’ learning results are drawn in the following Table 4.
Pretest aims to know the initial condition of foreign students. The analysis of pre-test scores includes normality, homogeneity, and average score similarity tests [20]. The normality test is conducted for each experimental TISOL program by searching the value of x2test for each experimental class and comparing it to the value of x2table. The values of x2table indicate UNP of 3.5, UNS of 7.5, UNM of 2.8, and UNUD of 2.1. These values are then compared to the value of x2table with 5% significance level as much as 11.1, referring to that experimental classes are distributed normally because the values of x2test are smaller that the table one. In addition, the homogeneity test with α 5% suggests that all experimental class samples are homogeneous. The value of x2test of -1.65 is smaller that x2table of 7.8. It means that all experimental class samples are homogeneous. Moreover, two-tailed t-test with α 5% shows that there are no significant differences in the average score among each experimental class. Hence, samples in the similar initial condition continue the next steps. In the last stage, students are following the post-test. The data of post-test scores are then compared to pre-test scores to know the increase of students’ learning results. This increase score is reflected by the gain value [20].

The effectiveness level of product is obtained by analyzing the gain score using one tailed t-test with α 5%. It aims to compare the gain score obtained with the expected reference, a high gain score [21]. Experimental classes in UNP, UNS, and UND show t-test of 1.1, 0.4, and 3.2, which are higher than ttable as much as -1.7. Consequently, Ho is rejected, and Ha is accepted. It means that the class gain is more than or equal to 0.70 (high gain score). Meanwhile, UNM obtains t-test of -4.1, which is smaller than ttable. Hence, Ho is accepted, and Ha is rejected because experimental class in UNM cannot fulfill the high gain score. However, one tailed t-test classically obtains table of -1.7 with ttest of 12.8 so that Ho is rejected, and Ha is accepted. This indicates that the average gain score of all experimental classes is more than or equal to 0.70 (high). Based on this result, it can be concluded that the use of TISOL interactive e-book positively affects students’ learning results with reference to the increase of students’ learning results. It is supported by Perdana (2014) who stated that the use of interactive digital book was really qualified to be used as the learning material and gave the positive impact to students’ learning results.

Adding multimedia content in interactive e-book is claimed that it makes foreign students easy to understand the concept being learned. The use of interactive media can give the significant impact to students’ learning results [22]. In connection to multimedia contribution on the cognitive development, multimedia gives foreign students opportunities to simultaneously utilize the function of pictorial (visual) and verbal (auditory) canals. Multimedia can decrease students’ cognitive loads by minimizing extraneous cognitive load [23]. The extraneous cognitive load refers to that multimedia offers more interesting material packaging rather than the usual one.

Motivation is the factor causing, accommodating, and supporting human behavior that makes human willing to work hard and enthusiastic to achieve the optimal result [24]. There is a significant impact between motivation and students’ learning achievements. In this case, students’ motivation is affected by some aspects including students’ conditions and learning environments. Students’ conditions affect their motivation in learning. Foreign students in Indonesia generally have feeling, attention, intention, memory, and thought that occasionally change in terms of strong and weak, during learning process. These conditions can either strengthen or weaken students’ motivation in learning. Some certain physical, phycollogical and environmental conditions will make students’ moods stronger and really influential their learning activities [25]. Students’ desires and emotion are extremely affected by the internal condition of students. The good physical and psychological condition will ideally support students in learning. The health physical condition, having sufficient energy, and having no fatigue will make student’s mood more stable.

Students’ learning environment conditions also affect their motivation levels. The good physical and psychological environments will strengthen students’ motivation. Besides, the comfortable and conducive physical environments also take a part in determining the construction of students’ good
psychological conditions [26]. These correlations are represented by students’ behavior who tends to be bored and not to paying attention to the lesson given in the class. The conducive learning environment atmosphere is certainly required since it gives the positive impact toward students’ learning results.

The product developed is the e-book with local wisdom-based multimedia content in Indonesia. In a consequence, reading and enjoying provided contents must be in the digital form with using electronic devices. Compiling the book in the digital form is slightly familiar in the community culture. The e-book has both strengths and weaknesses that seem to be difficult to be minimized, namely people’s habit in reading printed book and more expensive price of electronic devices to be used in reading it [27]. The product developed is the e-book with pdf format. The pdf documents generally have static displays. However, video contents in the multimedia e-book give a dynamic sense. It indicates that the weakness in term of display causes this product attractiveness still be able to meet students’ expectation. Nevertheless, this product is superior in terms of the ease to operate.

The data of this study in terms of non-cognitive data such as product usage activities, psychomotoric, and affective are analyzed in the descriptive percentage [28]. The lack of interaction decreases foreign students’ interests in terms of their responses to the product of the local wisdom-based interactive ebook. Instructors give ‘very qualified’ responses on the use of this interactive e-book. It is reflected by the score of instructors’ responses as much as 59 points (92%). According to the instructors, this interactive e-book can help foreign students in more easily understating the local wisdom-based material of Indonesian language. The interactive e-book contributes to ease instructors in teaching and to get the better competency achievement target.

4. Conclusion
Local wisdom-based interactive e-books are reasonable to be developed as learning materials in TISOL after passing through the assessment from the experts, small-scale and wide-scale tests. The interactive e-book developed can help foreign students to understand materials about Indonesian language taught. It is represented by the increase of high learning result (gain scores) classically for all foreign students in experimental classes. Their activities related to the use of interactive e-book is significantly high so that this e-book is reasonably considered to be developed since it affects positively toward foreign students’ learning results and activities. Regarding the result of wide-scale test on the product, this interactive e-book can be recommended its usage in learning activities as a variation in giving learning materials in TISOL. It can be also considered as an input for TISOL learning developers to give innovation on their products developed. Hence, widely socializing the product is required. Sampling techniques are also required to be adjusted more accurately so that can fulfill the quantity sufficiency and representation. Besides, a control samples is also needed as a comparison to give the information about the effectiveness of interactive e-book product effectiveness while compared to learning without using this product.

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