Developing electronic bahasa Indonesia (E-BIPA) 2.0 version media to improve critical literacy of foreigner students

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Abstract. In this era of industrial revolution 4.0, technology is growing rapidly with the emergence of high-tech electronic goods equipped with internet facilities to further speed up the communication process. The objective of this research was to develop Electronic Bahasa Indonesia (E-BIPA) 2.0 Version to improve critical literacy of foreigners’ student. This study is Research and Development (R&D) using ADDIE model. The data of this study were obtained through observation, interviews, questionnaires, and scale. The feasibility of E-BIPA 2.0 Version media was obtained from assessments by media and material experts. The results of the validators indicate that the E-BIPA 2.0 Version is very feasible to be seen from the media aspects with score is 85 and from material aspects with score is 87. Based on the results, the E-BIPA Version 2.0 media is very feasible for Indonesian lecturer to be used in teaching foreigner students. The E-BIPA 2.0 Version media was expected to support critical literacy of foreigner students in learning Indonesian language.

1. Introduction

During the 4.0 revolution era, technology have been far developed as indicated by the innovation of many high-tech electronic devices equipped with internet facility as the means to ease communication process. This surely brings some changes on every aspect of the human’s life that, currently, is being integrated with technology and information, including in education. Learners, as part of the digital society who utilize internet and social media in daily basis, are also caught in confusion in selecting the correct information as for their learning references. Any inaccurate information that they obtain may influence their knowledge and skill on a certain subject since they consider the information as correct, without critically read and think of that many from many different perspectives.

Critical literacy is people’s ability to not only focusing on the text or passage presented for them but also their ability to think it through [1]. During the language practice for the teachers and learners, critical literacy could help to strengthen the curriculum of Bahasa Indonesia learning for foreign speakers and also improve our comprehension on the interest competitiveness to attend to the BIPA learning session [2]. It is important to motivate and help students, as consumers of information, by providing texts to think critically and to reconstruct the students consistently using their own personal experience. Along with the development of information and technology, the development process of critical literacy ability is integrated with high-tech modern learning media.
E-BIPA 2.0 Media is the developed version of android-based E-BIPA that was developed using Adobe Flash CS 6. The media was developed on the content of the material, making it more thorough and comprehensive for foreigner students to learn Bahasa Indonesia. The use of technology as learning media allows the students to seek for and analyze information, solve problems, communicate, and collaborate [3]. There were some studies presented that android-based media supports the learning process. The finding of those researches shows that the application of android-based media result to a significant improvement, improve motivation, better learning outcome, critical thinking and problem-solving ability [4,5,6].

Based on the explanations above, this study focuses on developing E-BIPA Version 2.0 Media and identifies the feasibility of E-BIPA Version 2.0 for foreign speakers. The finding of this research is expected to provide contribution that may help lecturers or teachers to gain some more additional concerning the technology-based learning media of Bahasa Indonesia for foreign speaker. It expected to help them to improve their critical literacy in order to have better comprehension on texts prepared in Bahasa Indonesia through a practical and interesting media.

2. Methods
This research used the development model of ADDIE that has five stages in the product development. All the five stages in developing the media used the model of: analyzing, designing, developing, implementing, and evaluating. However, in this research, the stages are limited to only the third stage, developing, because the research only focused in scoring the feasibility of the media developed, seen from the product and the materials inside. The subject of this research is the expert of content and media, practitioners of education and students. The feasibility of the E-BIPA Version 2.0 media is scored by the expert of media and content. The data for need analysis is gained from teachers and students. The data collecting technique used are the observation, interview, questionnaire, and scaling. The observation and interview used on need analysis stage. Meanwhile, on the development stage, the data collecting technique used is the scaling. The instrument used is the validation sheet from the expert of content and media. The data is analyzed using the descriptive qualitative analysis technique that contained the result of the development and the product scoring by the expert of media and content.

3. Results and Discussion

3.1. Analyse Stage
In the initial observation stage and interview in gaining information upon the problem faced in learning activity, as well as the needs of the foreign students and the lecturers in supporting the learning activity. The researcher gained the information that there are still a lot of foreign students who faced the difficulty in learning Bahasa Indonesia. The Lecturers also experienced the difficulty in delivering the learning materials also have not found the proper learning media to be used. Therefore, it is decided that the researcher will develop the android E-BIPA Version 2.0 media. It is expected that the development of this E-BIPA Version 2.0 media can help them in mastering the literacy in Bahasa Indonesia.

3.2. Design Stage
In the designing stage, the structural framework for the content is constructed by paying attention to the major guidelines of learning materials existing in E-BIPA Version 2.0 media. The design of the media construction is based on the storyboard which made as the guideline in the media development, so that the media construction will become more directed and according to the needs of the users.

3.2.1. Learning Materials. The learning materials is that inserted to the E-BIPA Version 2.0 media. Besides, the materials are emphasized with the concrete picture that supports the material so that the students can understand the materials easier and it will be more interesting for the students in reading the E-BIPA Version 2.0 media. On the final learning process, there will be tasks for the students to do individually in finding out the understanding of the students upon the materials learned.
3.2.2. Learning Media. The learning media developed in this research is android based E-BIPA Version 2.0 media that is developed using the help of Adobe Flash Player application. E-BIPA Version 2.0 media is developed like the existing E-BIPA media, containing texts and pictures. However, the difference between this one and the pre-existing media is that this media contains the learning material of Bahasa Indonesia for foreign speakers on the level of A2 that can be used as the supplementary learning media in school.

3.3. Development Stage
The development stage of the media is based on the interview and questionnaires result that is given on the stage of need analysis. The systematics in presenting the existing material in this media is according to requirement described in the indicators for the foreign speakers. The making of this media is based on the design of media construction in the storyboard and flowchart. The E-BIPA Version 2.0 media consists of three main parts, the opening part, the main part, and the closing part.

3.3.1. The Results of Media Development. The opening part consists of title, the team of media construction, and the institution that facilitate the development of the E-BIPA Version 2.0 media. The next page is the main menu that presents the units of learning media. The opening page contains the learning level provided in the E-BIPA Version 2.0 media that is level A2. Besides, the opening page also contains the mapping of Graduate Learning Outcomes (CPL), list of content, and concept maps. The display of the home page, main menu, and opening page can be seen on Figure 1.

![Image](a) ![Image](b) ![Image](c)

**Figure 1.** The display of home page (a), main menu (b), and opening page (c) of E-BIPA 2.0 Media.

The first page of the material unit contains the information about the title of the material, learning objectives, pictures that interpret the material learned. On this page, there are also two navigation buttons, the one with home picture, and next button to go to the following page. The material page contains the detailed material learned according to the title mentioned. There is a speaker’s button that is used for the materials that need audio. On this page, there are also three navigation buttons, home button, next button to the following page, and back to return to the previous page. The final part is the closing part. This part is designed as the way to quit from the E-BIPA Version 2.0 media.

3.3.2. Media Validation E-BIPA 2.0 version by Media and Material Experts. The feasibility of the E-BIPA Version 2.0 media that has been developed is then scored by the experts of media and contents. The scoring of the E-BIPA Version 2.0 media is done using the product validation scaled scoring sheets. The comments and suggestion by the validators are also used as the reference for revision for the E-BIPA Version 2.0 media. E-BIPA Version 2.0 media is announced as valid if gained the total score with the qualitative criteria of “valid”. Here is the validation result by the experts of content and media. After the E-BIPA Version 2.0 media is announced to be valid by the experts, then the media can be tested on the implementation and evaluation phase. The scoring from the content experts is done by giving score.
to five aspects. The scoring result for the feasibility of E-BIPA Version 2.0 media by the content experts can be observed on the Table 1 below:

| No. | Indicators     | Score | Category     |
|-----|----------------|-------|--------------|
| 1   | Conformity     | 23    | Very Feasible|
| 2   | Importance     | 15    | Very Feasible|
| 3   | Learnability   | 25    | Very Feasible|
| 4   | Attractiveness | 14    | Very Feasible|
| 5   | Benefit        | 10    | Very Feasible|
|     | Total Score    | 87    | Very Feasible|

Based on Table 1, it can be inferred that the total score gained from the scoring of the E-BIPA Version 2.0 media is 87 with the category of “Very Feasible”. The minimum score of feasibility of the product established is 68 with the category of “Feasible”. The scoring result of the E-BIPA Version 2.0 media by the content expert can be observed through diagram below.

![Figure 2. Scoring Result by Content Expert](image)

The scoring result by the content expert upon the E-BIPA Version 2.0 media is announced to be feasible to be used as the media in increasing the critical literacy of the competence level of A1 and A2 of the foreign speakers on learning Bahasa Indonesia with several revision based on the suggestion given by the content expert. Several suggestions given are the following: 1) Evaluation for the learning is ought to be presented online. 2) There are materials shared twice, on fourth unit, so one of them should be erased. 3) There are some writing error (typo) found in the material.

The scoring by the media expert is done by giving score on five scoring aspects. The result of feasibility score of the E-BIPA Version 2.0 media by the media expert can be observed on Table 2 below:

| No. | Indicators      | Score | Category     |
|-----|-----------------|-------|--------------|
| 1   | Navigation      | 25    | Very Feasible|
| 2   | Aesthetic       | 30    | Very Feasible|
| 3   | Integration     | 15    | Very Feasible|
| 4   | Technical Quality| 15    | Very Feasible|
|     | Total Score     | 85    | Very Feasible|

Based on Table 2, it can be inferred that the total score gained from the scoring of E-BIPA Version 2.0 media is 85 with the category of “Very Feasible”. The minimum score of the product feasibility that has been established is 68 with the category of “feasible”, then it can be concluded that the E-BIPA Version 2.0 media in term of quality is feasible to be used based on the scoring of the media expert. The
scoring result of the product of E-BIPA Version 2.0 media by the media expert can be observed in the following diagram.

![Figure 3. Scoring Result by Media Expert](image.png)

On figure 3, it can be observed that the scoring result of the E-BIPA Version 2.0 media by the media expert gained the score that passed the minimum score set. The scoring result by the media expert upon the E-BIPA Version 2.0 media is announced feasible to be used as the media in increasing the critical literacy of competence level for A2 students of foreign speakers in learning Bahasa Indonesia with several revision based on the suggestion given by the expert media. The suggestions given are: 1) the opening page should be distinguished from the button of material unit. 2) background of the media is ought to use a contrasting color with suitable theme. 3) the quit button of the E-BIPA Version 2.0 media should be provided in the main menu of the media.

Based on the result of the research, the E-BIPA Version 2.0 media developed in learning Bahasa Indonesia for foreign speakers is announced as feasible to be used in the learning process. There are several reasons to support the development of E-BIPA Version 2.0 media as the media in improving the critical thinking of students in learning Bahasa Indonesia for foreign speaker.

E-BIPA Version 2.0 media that is developed contains the illustrated picture and text that ease the students in understanding the learning material. The learning media has the visual element that has influence upon the learning process [7]. The use of pictures that contained in the learning media can motivate and attract the attention of the students. The picture can help the students in understanding abstract concepts [8]. Furthermore, it is mentioned that the visual element on the learning media can ease the students in understanding the learning materials[9,10]. Picture or illustration has a function as the messenger from the text on the media.

The second element of the E-BIPA Version 2.0 media is the audio that gives example on how to pronounce words, sentences, and dialogues. The use of the media with the audio element can help the students in improving their skill in listening to foreign language [11,12]. The next is the element of video that is included in E-BIPA Version 2.0 media. Video can be utilized as the media in improving the skill of the students especially in speaking and listening[13].

The materials presented on E-BIPA Version 2.0 media is a material that is close to the daily of the students or is contextual. Besides, the E-BIPA Version 2.0 media also gives examples that are easy to understand for the students. The learning developed through the materials that are close to daily life of the students can create a more meaningful learning experience[14]. Meaningful learning can push the students in building knowledge and concept, so that the can help the students in remembering and understanding the learning materials more easily [15,16]. Besides, the learning materials of E-BIPA Version 2.0 media are also arrange in stages, from the simpler material to a more complex one. That is in line with the principle of learning material development that are arranged in increasing stages with the purpose to ease the students in learning [17]. In every end of the material, there will be exercises that can be done by the students so that it will ease the students in learning something.[18].

4. Conclusion
Based on the findings in this research, it can be concluded that the E-BIPA Version 2.0 media as the learning media can be used as the support in learning Bahasa Indonesia for foreign speaker. The
development of E-BIPA Version 2.0 media in the learning of Bahasa Indonesia for foreign speaker has passed the feasibility test by the media and content experts. Based on the scoring result from the content expert, the score gained is 87 that is categorized as “Very Feasible” and the scoring result from the media expert is 85 that is also categorized as “Very Feasible”. The teacher as well as the students really need the development of this media in supporting the learning of Bahasa Indonesia for foreign speakers in the class. Therefore, the E-BIPA Version 2.0 media is very recommended for the students and also lecturers to be used in the learning of Bahasa Indonesia for foreign speaker, especially in improving the critical literacy of the students. This research is only limited on the stage of the media development only, so that on the further research, it is expected that it can develop the materials of Bahasa Indonesia for foreign speakers in the higher level with more complexity. The further research will also have the chance in gaining the data of effectiveness of the E-BIPA Version 2.0 media in improving the critical literacy level of the students.

References
[1] Gaber S and Hassan M 2015 *Int. J. Humanit. Soc. Sci.* 5 170
[2] Fajardo M 2015 *Univ. Sydney Pap. TESOL* 10 29
[3] Lim C P, Zhao Y, Tondeur J, Chai C S, and Tsai C C 2013 *Educ. Technol. Soc.* 16 59
[4] Yang J Y and Che P C 2015 *Turkish Online J. Educ. Technol.* 14 101
[5] Shabrina and Kuswanto H 2018 *Int. J. Instr.* 11 287
[6] Hediansah D and Surjono H D 2019 *Anatol. J. E.* 4 1
[7] Yang C-H, Cheng J-C, and Chou M-J 2016 *Eur. J. Res. Reflect. Educ. Sci.* 4 15
[8] Aukerman M and Chambers Schuldt L 2016 *Read. Res. Q.* 51 267
[9] Kasmainezhadfard S, Pourrajab M, and Rabbani M 2015 *Multi Discip. Edu Glob. Quest* 2 83
[10] Dallacqua A K and Peralta L R 2019 *Read. Teach.* 73 111
[11] Hardiah M, 2019 *Al-Lughah J. Bhs.* 7 39
[12] Kewalin A and Mike W 2018 *Teach. English with Technol.* 18 48
[13] Yükselir C and Kömür S 2017 *Eur. J. Educ. Stud.* 3 12
[14] Uge S Neolaka A and Yasin M 2019 *Int. J. Instr.* 12 375
[15] Sung H Y, Hwang G J, and Chang H S 2015 *Educ. Technol. Soc.* 18 299
[16] Vallori A B 2014 *J. Educ. Hum. Dev.* 3 199
[17] Aydin A and Aytekin C 2018 *Int. Educ. Stud.* 11 27
[18] Paolini A 2015 *J. Eff. Teach.* 15 20