The Development of Telegram BOT Through Short Story

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Abstract—**This study aimed to determine the validity of Telegram BOT as a learning medium, combined with blended learning method for *Bahasa Indonesia* Course, especially in Equality Program Package C in *Sanggar Kegiatan Belajar* (SKB) Kabupaten Sleman and SKB Kabupaten Bantul. The type of the research was Research and Development (R&D), by using ADDIE models. The data were collected by using questionnaires. The results revealed that the use of Telegram BOT on teaching Short Story in Equality Program Package C of SKB Kabupaten Sleman and SKB Kabupaten Bantul had been validated with the percentage as much as 88% by material expert, 73% by the media expert, and students' responses with the percentage as much as 83%. The findings of this research in the developing of Telegram BOT utilization can assist the blended learning process, so it can be useful for the learners to obtain the materials despite their limited learning time, and they have discussion forums out of school learning hours.**

Keywords—blended learning, learning media, Telegram BOT, Program Equality Package C

I. INTRODUCTION

Education is necessary for humans' life since by obtaining education, everyone can have adequate knowledges, insights, and skills. Education also can help us to achieve a decent life. [1] Education makes life better since it becomes our life's guidelines, plans for a bright future, forming humans' character, and helps us in managing our time appropriately. In addition, education makes people think more effectively before doing the action. The era of globalization makes significant changes in humans' life, so everyone should be able to follow the education development. It is explained on UU Number 20 of 2013 which states "The implementation of education is conducted through informal and formal channels. Therefore, for those who cannot enter formal education, the government prepares nonformal education as stated in the National Education System Law Number 20 of 2003, article 26, paragraphs 3 and 4 which mentions that "Nonformal education consists of life skills education, early childhood education, youth education, women's empowerment education, literacy education, skills education, and job training, as well as other educations which aim at developing students' abilities; Meanwhile, nonformal education units consist of course institutions, training institutes, study groups, community learning centers, and *majelis taklim*. Equality program is one of nonformal education programs that consists of package A which is equivalent to SD / MI, Package B is equivalent to SMP / MTs, and Package C is equivalent to SMA / SMK / MA. Equivalence education is organized by nonformal educational unit institutions, such as Community Learning Centers, Learning Centers, Islamic Boarding Schools, Home Schools, Campus Class, etc.

Sanggar Kegiatan Belajar (SKB) Kabupaten Sleman and SKB Kabupaten Bantul are located in Special Region of Yogyakarta. One of the programs in SKB Kabupaten Sleman and SKB Kabupaten Bantul is the equality program. Based on the results of the preliminary study, the learning process in these SKB had not been optimal. Based on the teaching and learning process, especially Program Equality Package C, the frequency of students' attendance was so low, only around 6-7 students. It is caused by the distance from their houses or their offices, their work cannot be abandoned, and so on. The lack of motivation makes the students become not independent in learning. The students of Package C Equality Program have different age and characteristics which encourage the teachers to choose the learning media appropriately. [2] Learning media are tools to transmit or send messages, or in learning contexts, media are used to convey the materials to students, in order to achieve effective instruction. Teachers in SKB Kabupaten Sleman and SKB Kabupaten Bantul only use the whiteboard, books, or modules as the learning media, while the method used in teaching is conventional or lecture method. Students in Equality Program Package C need a learning medium that can be accessed anytime and anywhere. This obstacle should be solved appropriately since technology development has been increasing. [2] 21st Century technology has been very important, especially for the education field. Hence, the teacher can take advantages of the development of information and communication. A learning system that uses technology is a process of transferring knowledge between teachers to students with the help of media that connect to the internet such as websites, facebook groups, WhatsApp groups, telegrams, forums, and others. The use of information and communication technology can help students to follow the learning without attending the class directly. Blended learning is an innovative learning concept that covers traditional teaching in the classroom and learning supported by information and communication technology (ICT), such as offline learning and online learning [3]. Blended learning focuses on two scopes such as education and educational technology [4].

Learning by using technology will make students easier in accessing the knowledge since it can be accessed anytime and

anywhere. [5] The fact is when students are familiar with technology, they will learn better in a technology-based environment. The use of technology in education contributes a lot in the pedagogical aspects where the application of ICT will lead to effective learning, by the support of ICT elements and its components. This kind of learning system makes everyone possible to learn without considering the distance, time, age, and other limitations, so learning is truly opened to anyone who has the willingness. One of the information and communication technologies that can be used to support the learning process is Telegram.

Telegram is a messenger application that has many advantages (besides chatting or messaging). Telegram provides speed and security, and also free and easy to use. In addition, this telegram application can also be used on all devices at the same time, while the messages can be synchronized properly in a smartphone, tablet, computer or laptop. The facilities offered by telegram applications are: the messages can be sent in the form of chat, photos, videos, and various types of files (doc, zip, mp3, etc.) to other people whose contacts are in telephone contacts and also telegrams. Telegram BOT is a program that exists on Telegram created or developed by using the API on the Telegram BOT. Bots are a kind of interactive agent, a computer program designed to simulate intelligent conversations with one or more human users through voice recognition and chat interfaces. In a telegram, bot is a special telegram account that is designed to respond to the messages automatically, which does not require additional telephone numbers. Users can interact with Bots by sending command messages through private or group messages. Bots are usually programmed to be able to interact like someone in general. Bots can be used to remind something (reminder), play, broadcast, and can even send commands to other devices. [6] As a learning medium, telegram bot can help students in learning, and the materials can be distributed easily and can be accessed anytime, anywhere. Learning activities and evaluations can be conducted by utilizing the sophistication of the features in this application.

Researchers chose Telegram application since it is lightweight, free, and multiplatform. Furthermore, API on telegram is complete and has innovation, and can respond to the messages automatically, so it provides easy access and help students of Equality Program Package C of SKB Kabupaten Sleman and SKB Kabupaten Bantul, especially in accessing material anytime and anywhere. The learning process on *Bahasa Indonesia* in 2013 curriculum is aimed at four skills, such as listening skills, speaking skills, reading skills, and writing skills. Writing skills are necessary for students to help them expressing their ideas, thoughts, feelings, and also to enhance students' creative thinking skills. Short story is one of the *Bahasa Indonesia* materials which can be used to enhance students' creative thinking skills through writing. By learning how to write appropriately, the students can be a professional writer in the future. Based on the preliminary study, in writing short story, there are several students who still cannot be able to express their ideas, especially in writing. It is caused by the connventional method applied by the teacher, since it is only centered to one side, or the teacher only gives lectures. In adition, the students only listen to the teacher. It makes the students become not active. Therefore, by using Telegram BOT as the learning medium, hopefully this medium can be used anyti... able to discuss the materials with the teacher, even outside of the school. The menu on Telegram BOT consists of materials, video links, questions, assignments, task collection, list of values, and suggestions. The materials are presented by using graphic design, in order to make students can learn new display materials. The video link is a link that contains a short story material in the form of video. From the video, students can write short story elements and main ideas in the short story. Listening and writing skills are interrelated, for example when the studens need inspiration, information, or ideas, so their listening skills are useful for the development and other language skills or skills. Examples of the questions are related to the short story material, on the menu, the teacher can send assignments to students on this menu, and it provides several facilities for students to collect or send assignments that have been finished. Meanwhile, the grades list menu contains students' scores, and the criticisms and suggestions for the application. These criticisms and suggestions are intended to support the improvement of blended learning by using Telegram bot. This study aimed to determine the validity of Telegram bot as a learning medium combined with blended learning methods for *Bahasa Indonesia* course, in Equality Program Package C in SKB Kabupaten Sleman and SKB Kabupaten Bantul, based on the assessment of material experts, media experts, and students' responses.

This research was conducted based on previous researches by Febrian Ramadhan and Setya Chendra Wibawa, entitled "The Development of Interactive Mathematics Learning Media with BOT API Telegram Social Media at Surabaya Pharmacy Academy in 2018" [7]. The other one was the research conducted by YS Rahayu, SC Wibawa, Y. Yuliana, E. Ratnasari, and S. Kusumadewi, entitled with "Development of the BOT API social media Telegram about Hormones by Using Black Box Testing in 2018" [8]. The differences between this research and previous research were shown from the menu, subject matter, and research subjects.

II. METHOD

This study implemented R&D research, while the product was adopted based on ADDIE research and its development procedures. ADDIE has five stages to develop a product, such as Analysis, Design, Development or Production, Implementation or Delivery, and Evaluations, developed by Dick and Carry [9]. The analysis was conducted in order to identify the purpose of development, analysis of subjects, and several design phases such as making telegram bots, display menus (custom commends), design the maps of subject matter concepts and videos which were appropriate, and conducted test which was suitable with the material. The phase of this research was the pilot phase of the user, for example, students of the Program Equality Package C in SKB Kabupaten Sleman and SKB Kabupaten Bantul. Therefore, an evaluation was conducted for product improvement.

A. Population and Sample

The populations of this study were the students of the Equality Program Package C of SKB Kabupaten Sleman dan SKB Kabupaten Bantul with the total numbers 67 students, 1 material expert, and 1 media expert. The samples of this study were 1 material expert, 1 media expert and 35 students of SKB Kabupaten Sleman and SKB Kabupaten Bantul. The samples were selected by using a purposive sampling technique. [10] Purposing sampling or judgment technique is

a selection of samples determined intentionally by researchers since it has certain considerations.

B. Data Collection Techniques

The data were collected by using a questionnaire. This questionnaire was used in order to determine students' responses to the product that was developed. Assessment of product eligibility by material and media experts and students' responses were analyzed by using the following percentages:

$$P = \frac{F}{N} \ 100\% \qquad (1)$$

P is defined as the percentage of the answer, while F is defined as the frequency of the answer, and N is defined as the number of the frequency [11].

TABLE 1. THE ASSESSMENT CRITERIA BY USING GUTTMAN'S SCALE

Score of Assessment/Questionnaire	Criteria
81%-100%	Very Good
61%-80%	Good
41%-60%	Average
21%-40%	Bad
0%-21%	Very Bad

Source: Arikunto dan Cepi, (2014-35)

III. RESULTS AND DISCUSSION

Telegram bot in this study was developed by implementing ADDIE stages. After that, the product was tested for its eligibility by the material expert and media expert. In addition, the product was tested based on students' responses, after the product was used.

A. Results of Analysis Phase

The analysis phase was conducted in order to determine the needs which support the product development and analysis of subjects in SKB Kabupaten Sleman and SKB Kabupaten Bantul. The analysis phase can be seen in table II.

TABLE II. THE RESULTS OF NEED ANALYSIS AND COURSE ANALYSIS

NEED	RESULT
The students cannot always follow the learning process in the classroom, which requires a learning medium that can be accessed anytime and anywhere.	By utilizing the technology which can be accessed with low cost, such as blended learning by using an application which can be accessed in smartphone or PC.
The students' are still lack of motivation, which enables them to learn independently.	Telegram bot has a platform which can be a medium for conducting discussion between students and teachers.
In the learning process, the teacher still uses conventional media instead of technology-based media. The method implemented by the teacher is only lecturing method.	Telegram bot can be designed as a learning media, and the material is designed creatively and innovatively. In addition, the learning materials can be accessed anywhere and anytime, out of the school hours.

B. Expert Assessment of Materials and Media Results

Evaluation of media experts was viewed from the relevance of the material, organizing the material, the relevance of the questions, and language aspects, as many as 26 statements. Meanwhile, the total score was 23, with a percentage of 88%, categorized as very good. Assessment from media experts can be seen from language aspects, learning strategies, robot, and its visual appearance, as many as 19 questions, while the total score was 14 with a percentage of 73%. Hence, it was categorized as good. Based on the results of the assessment of material and media experts, it can be concluded that the Telegram BOT is suitable to be used as a learning medium.

C. Students' Response Results

Students' responses were analyzed based on the learning aspect, contents, programs, and attendances, as many as 24 items, such as Telegram BOT helped the students to learn independently, as much as 77% subject matter can be accessed anytime and anywhere, 80%; discussion facilities in groups provide an opportunity to ask questions about material that is hard to be understood, 86%; the accuracy of language use, 91% current subject matter, 83% use of graphic design on learning material with illustrations that were easily understood, 80% use of examples that correspond to the material; material compatibility with the reality of life, 66%; concept accuracy and definition, 83%; sentence structure, 86% the effectiveness of sentences in the material 89%; accuracy in the use of language rules 80%; the language used is communicative 91% example problems easily understood 86% the accuracy of the example problems is 80% validity of sample problems with 83% material; applications can be accessed anytime and anywhere during the availability of internet and network quota, 83% simple operation, 80% unpaid Telegram BOT, 89% attractive material design, 83% color gradient, 80% letters that use fonts that are readable, and 86% of the graphic design layout match the design. The total percentage was 83%, which belonged to a very good category. Based on the results, the students were feasible to use Telegram BOT as a learning medium.

The education system is currently in a transition phase, in order to face challenges of expansion, educational institutions such as nonformal education, which needs to adopt technology and explore new ways to achieve a qualified education. Educational Media and Technology have become integral parts of the teaching and learning processes [12]. The use of technology in learning makes distance becomes no longer an obstacle, and can be conducted anywhere, since technology-based media will facilitate the students in the learning process [13]. By utilizing technology in educational practices, it becomes a positive step that becomes a solution to the distance and other obstacles [14]. Students' views on blended learning and face-to-face learning have been different since they stated that blended learning is more effective [15]. Blended learning supports learning experiences that are more flexible, interactive, efficient, and accessible for teachers and students, while the superiority of blended is based on the adaptation of technology rather than conventional learning [16].

The blended learning system by using a telegram bot makes the learning process become more interactive. The assessment of the percentage of this telegram application bot according to experts was considered as valid, and the students

strongly agreed to use telegram application as a learning medium [7]. The distribution of learning materials can be run easily since it can be accessed anytime and anywhere. This learning activity can also be conducted by utilizing the features which are available in the Telegram application. [8] Telegram bot has good visual and auditory perception which makes it easy to be interacted, and easy to be learned.

Students can access the short story by using Telegram BOT anywhere and anytime, so in case several students are absent, they still able to learn the materials. In addition, Telegram BOT can also be utilized as the forum to discuss their assignments, between the students and the teachers. Therefore, by using Telegram BOT, the students will not only listening passively to the teacher, but also they can give comments, advices, so they will be more critical. Their short stories also can be submitted more flexibly, based on the situations and conditions, in order to make their writing better. The menu also enables the students to send the file in the form of .doc, .pdf, .mp4., etc. Telegram BOT can give the students new learning experience which is no longer monotonous, and the students will learn enthusiastically. The Telegram BOT also helps the students of Equality Program, since some of them might have many businessess, jobs, and the responsibility to take care of their children.

IV. CONCLUSION

Based on the assessment of material experts, media experts, and students' responses, it can be concluded that Telegram BOT is suitable to be used as a learning medium, with the percentage of subject matter experts as much as 88%, media experts as much as 73%, and students' responses as much as 83%.

ACKNOWLEDGMENT

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