Developing E-learning Module by Using Telegram Bot on ICT for ELT Course

Rasyidah Nur Aisyah[1*], Dewi Masitho Istiqomah[2], Muhammad Muchlisin[3]

[1,2] *English Education Study Program, Universitas PGRI Wiranegara Pasuruan*
[3] *SMK Negeri 4 Malang*
Corresponding author. Email: ocicyah@gmail.com

ABSTRACT

Pre-service teachers who are taking undergraduate education after graduating will face generation z students, where students are already facing the 21st century and gadgets have become their playmates. Using gadgets that only for playing games and social media has been deemed less useful. It needs to facilitate teaching how to make learning media using smartphones to equip pre-service teachers to be proficient in utilizing technology, which is called MALL. The objective of this study is to produce a product of teaching materials based e-learning by telegram bot application. The materials are about ICT in English language teaching course. This course is for the seventh-semester students in the English education study program Universitas PGRI wiranegara pasuruan. The method is research and development (RnD). The steps are finding the problems. Collecting data, product design, design validation, design revision, product try out, product revision, utility testing, final product revision, and dissemination. the product has been not only validated materials and media but also testing usage. the materials validation expert shows that the average percentage is 94% and the media expert validation shows that the average percentage is 72%. The tryout result shows that the average percentage is 82%. The dissemination product shows that the average percentage is 87%. Based on the results shows that this e-learning materials product includes an invalid category.

Keywords: E-learning module, Telegram Bot, ICT for ELT

1. INTRODUCTION

Educators have a responsibility to prepare the necessary teaching materials in learning activities. Thus it takes innovation in packaging interest materials by utilizing technology and facilitate learners to find and comprehend the materials more quickly and accurately. Pre-service teachers who are taking undergraduate education after graduating will face generation Z students, where students are already facing the 21st century and gadgets have become their playmates. Using gadgets that only for playing games and social media has been deemed less useful. it needs to facilitate teaching how to make learning media using smartphones to equip pre-service teachers to be proficient in utilizing technology, which is called MALL (Mobile Assisted Language Learning). The development of science and technology is increasingly pushing for renewal efforts in the use of technological outcomes in the learning process. Besides, to be able to use the available tools, lecturers are also required to be able to develop skills in creating instructional media that will be used. Ongoing learning certainly cannot be separated from the general components of learning planning, one of which is the use of media and learning resources. Learning is an effort to organize the environment as a source of learning so that the learning process occurs in students themselves. Learning media is everything that can be used to deliver messages or information in the teaching and learning process so that it can stimulate student attention.

Online learning enables the learning process that can achieve in the form of "complex skills" needed in the global era while enabling student-centered learning[1]. Meanwhile, according to[2] mentions some potential that can be developed from online learning resources in the learning process, it enables the learning process that can achieve achievements in the form of "complex skills" needed in the global era while enabling student-centered learning [3]. Meanwhile, according to [4] mentions some potential that can be developed from online learning

resources in the learning process namely: *(1) drawing on web-based material to be used by students both within and outside lesson time, (2) teachers modifying and adapting web-based resources for use with their students, (3) teachers using the Internet to support their professional needs.* According [5] showed that learning science-based online learning resources must still be followed by an informal face-to-face communication model with students to obtain more optimal results.

The utilization of technology in the learning process bears the new concepts in IT-based learning or better known as e-learning [6]. In e-learning, many online learning media can be chosen by teachers as learning media, one of which is the Telegram bot. Telegram bot Program is a Learning Management System (LMS) that provides a variety of features that can be used by teachers in learning activities.

Alternative solutions to these conditions are assisting in teaching staff or teachers to facilitate students who have learning characteristics with different learning speeds, and have the shame of expressing opinions in conventional classes through electronic modules [7]. The application of the use of modules can codify learning activities that are better planned, independent, complete and the outputs are clear. Besides, through e-learning materials (Modules) the teacher will be easier to carry out learning and students will be more helped and easier to learn [8].

Furthermore, the use of online learning in the electronic module is one of the innovations to improve the quality of learning in the classroom. This step is used to provide an effort to experience learning in the 21st century, where learning in this environment must take place in the context of developing interactions and communication that enables formal and informal learning [9]. Based on the above problem, the researchers intended to offer alternatives to produce electronic modules that are equipped with online-based learning with telegram bot programs so that they can be used by teachers to improve student competencies, as well as to be additional alternatives as media and learning resources for students.

1.1 Module

A Module is defined as a complete teaching unit designed to be used by a learner or a small group of learners without the presence of a teacher because the overall objective of the Module is to facilitate learning without regular supervision, all elements of the subject given by the teacher usually must be formed into a collection of printed, audiovisual or computer-based material [10] [11].

1.2 Electronic Learning (E-Learning)

An electronic learning system or e-learning is a new way of teaching and learning. E-Learning is a learning system that utilizes electronic media as a tool to assist in learning activities. E-learning is an aggregation of all types of learning that use computers as a medium to support the learning process [12] E-Learning is the basis and logical consequences of the development of information and communication

Electronic learning is also referred as learning that uses electronic devices, mainly through online communication. E-Learning does not only accesses information (for example, laying out web pages) but also helps learners with specific results (eg achieving goals). In addition to delivering teaching, e-learning can monitor learners' performance and report on learning progress [13].

1.3 Online Learning by using Telegram bot Program

Online learning (also known as e-learning) is the result of teaching delivered electronically using computer-based media. The material is accessed through a network including a website, internet, intranet, CD, and DVD, [14]. Then according to [15] *Although all four interactions were necessary for an online environment, learner-content interaction was consistently identified as the most important construct throughout this study.*

Telegram bot is a global education network that helps connect all students with the people and learning resources needed to reach their full potential [16]. Telegram bot is an online network application for teachers and students. Telegram bot is a social network platform that created educational studies [17].

2. METHOD

2.1 Research and Development Model

According to [18] development is research in the form of developing certain products by the needs of today's society. In developing the Module, research and development refer to the Blended Learning-Based Design Model for Problem Solving Learning Outcomes [18]. The design steps are as follows: (1) Analysis of problem-solving needs, (2) Identification of learning resources and problems in applying to learn based on blended learning, and (3) Identification of student characteristics, (4) Establishing learning objectives, (4) Establishing learning objectives, (5) Choosing and, (6) Establishing learning strategies, (7) Trials, (8) Revisions, (9) Learning Prototype Based on Blended Learning.

In steps 1 to 3 the analysis phase, Steps 4 through 6 are the design stage. While steps 7 through 9 are the evaluation stages. The procedure above is certainly not a standard procedure that must be done as a whole. "Development research implementation procedures are not standard steps that must be followed by standards. Of course, each developer can choose and determine the steps.

2.2 Teaching Method

The teaching method is everything that can be used to deliver messages or information in the teaching and learning process so that it can stimulate the attention and interest of students [19].

According to [20], [21] states that the media are all things that can be used to share messages from the sender to the recipient to stimulate the thoughts, feelings, concerns and interests, and attention of students in such a way that the learning process occurs. According to [22] media is all forms and channels that are used to send messages from the sender to the recipient of the message. The most appropriate for him based on the special conditions he faced in the development process "(Ardhana 2002: 09). So that in the development of online-based electronic modules with the Telegram bot program, only 9 steps are used until formative evaluation, not to the summative evaluation step.

2.3 Research and Development Procedure

In developing online-based electronic modules using Telegram bot program. Researchers used a conceptual model namely a design model based on blended learning for problem-solving learning outcomes [18]. Because of time constraints so that later it does not take a large subject and does not reach the summative evaluation stage.

The procedure taken in this research development consists of 9 steps described as follows: (1) In the analysis of problem-solving needs include activities: (a) analyzing the existing conditions, namely looking for the root problems of the needs to be solved by learners (learners) who is the goal of problem-solving learning outcomes; (b) identify what needs to be mastered (knowledge, attitudes, and skills) to solve problems and follow up on possible new problems that need to be solved; (c) identify the difference between the expected goal condition and the existing condition; (d) determine and document the strengths that exist related to performance, and (e) determine what are the priorities to overcome the existing problems. The needs analysis is done by observation, interviews, and questionnaires, (2) In the analysis of learning resources includes activities analyzing the sources of people and media, namely: (a) Identification of learning resources includes the ability to

teach staff, other teaching staff, computer technicians to develop online learners, offline, and mobile both owned by schools and outside the school, (b) identification of learning resources available include print, audio, audio-visual, computer, internet, and smartphone learning resources at school, (c) identification of learning resources There are printed learning resources, audio, audiovisual, computer, internet, and smartphone that are outside the school (WEB and other accesses. (3) At this stage, an analysis of the initial abilities and characteristics of students will be conducted, (4) Formulating learning objectives have been identified based on the previous steps, then arranged in order of the most important things. The learning objectives include ran ah cognitive, affective, and psychomotor (based on Bloom's taxonomy) or include verbal information, intellectual skills, cognitive strategies, attitudes, and psychomotor (Gagne's taxonomy), (5) Selecting and Establishing Learning Strategies, (a) Content organization: Organizing learning content namely to describe the steps in achieving learning objectives or in other words describe learning objectives into sub-abilities and expertise to be achieved. To describe general learning objectives to specific learning objectives, an analysis of learning is carried out, (b) Delivery of learning: The delivery of learning content is a variable component of the method for implementing the learning program, at least there are 2 functions of this strategy, namely: (1) delivering content learning to students, and (2) provides information/materials needed by students to display the performance (such as exercises and tests). The delivery strategy includes the physical environment, lecturers, learning materials, and activities related to learning. Or in other words, media is an important component of learning delivery strategies. That is why learning media is the main area of study of this strategy, (c) Management Strategy. This strategy is related to decision making about organizing strategies and delivery strategies which are used during the learning process, (1) scheduling, (2) making learning progress notes, (3) managing motivation, and (4) learning control. (6) Learning resources to facilitate learning for students on learning based on blended learning consists of face-to-face offline, and online, (7) Evaluation is a formative evaluation that aims to improve. In this research, formative, small, and field evaluations will be conducted. For the number of subjects in the trial phase adapting the format of individual tests (3 or more subjects), small group trials (8-12 Subjects), and large (field) trials 30 Subjects. (8) Based on trials conducted both expert tests and individual, small group, and field tests, the information will be obtained on which parts at each stage of the learning design still need to be improved, learning development then improves and is reconfirmed to those who advise improvement, (9) After the improvement process is carried out and reconfirmed, the results of the design are prototypes that can be implemented for the

benefit of learning based on blended learning for problem-solving learning outcomes.

2.3.1 Product Trial

Product trials are intended to collect data that is used as a basis for determining the feasibility and attractiveness of the product. In this stage, the proposed ones are the design of the trials, test subjects, types of data, data collection instruments, and data analysis techniques.

2.3.2 Trial Design

The trial design is to obtain and conclude data that can be used as a basis for improving the product more fully. This design is carried out in 4 stages, namely expert evaluation, individual group test, small group test, field test.

The individual trial was conducted on 5 English study program students. Taking the subject of this study was conducted by a random sampling method. A small group trial was conducted on 12 English study program students. Taking the subject of this study was conducted by a random sampling method. A large group trial was conducted on 30 English subjects. Taking the subject of this study was conducted by a random sampling method.

The results of the individual and small group tests were analyzed and then used as a reference to revise the product development of electronic modules for online-based subjects with the Telegram bot program before being tested for large groups. A large group trial was conducted on 30 English subjects.

The type of data obtained consisted of qualitative and quantitative data. Qualitative data were obtained from expert reviews in the form of advice, input, and evaluation. Quantitative data obtained from the initial research (observation and analysis of needs) to determine the needs of the product to be developed as well as from individual test data, small group trials, and field tests (large groups).

The data collection instruments used in the research and development of electronic modules were based online with the Telegram bot program using a qualitative and quantitative approach in the form of a questionnaire. This questionnaire is used to collect quantitative data from initial research (observation and analysis of needs). Whereas to collect data from expert evaluations in the form of suggestions, input, and responses about product plans using instruments in the form of questionnaires for four media experts, one learning expert, one practitioner, and one evaluation expert.

The data analysis technique used in the development of online-based electronic modules with the Telegram bot program and the evaluation of experts for product testing was the percentage descriptive analysis technique.

3. RESULTS AND DISCUSSION

3.1 Small-Group Trial Data

The individual test consisted of 10 student subjects, obtained data from the aspects of attractiveness, presentation of material, convenience, and benefits. Average of all criteria (aspects) obtained. Thus, the classification results were included in the valid product quality criteria with a percentage of 70.00-85.00%.

3.2 Large Group Trial Data

The individual test consisted of 36 student subjects, obtained data from the aspects of the attractiveness of the display, presentation of material, convenience, and benefits. To find out the attractiveness of the display 85.6% results were obtained, aspects of the presentation of the material obtained 83% results, aspects of ease obtained 85.7% results, aspects of the benefits obtained 83.5% results. The average for all criteria (aspects) was 8266%. Thus the classification results included in the product quality criteria are very valid with a percentage of 85.00-100.00%. Thus the classification results included in the product quality criteria were very valid with a percentage of 86.00-100.00%.

4. PRODUCT

The results of the development products are in the form of electronic modules. Online-based ICT and ELT courses with Telegram bot program with 12 Module materials. The electronic module is packaged in the form of interactive multimedia equipped with online learning with the Telegram bot program. To use the Telegram bot program, it can be accessed by installing telegram application. The name used in the Telegram bot is @ICTforELT_bot.

Product development in the form of an online-based module with a telegram bot program. The advantages of electronic modules produced are: (1) This development product is easily controlled or operated according to the user's wishes, (2) This product is equipped with music, video, and slide show learning objectives. Module 1-Module 12 in the form Flipbooks are equipped with videos according to the sub material studied, online learning with the Telegram bot program, and evaluation of questions with the Quiz Creator application program. 4) The material of this product can be opened on mobile phones with Android features by downloading the Telegram program from Play store, (5) This product can be used as a learning resource for students who want to learn without time limits and for the general public who are still unfamiliar with electronic modules based online with the program telegram bot, (6) This product can be used in a classroom or outside learning as learning media. Electronic Module products based online with the

Telegram bot program, in line with the understanding Module, is interpreted as a teaching that is a complete teaching unit designed for use by a learner or a small group of learners without the presence of a teacher, because the overall objective of the Module is to facilitate learning without supervision regularly, all elements of the subject given by the teacher must usually be formed into a collection of printed, audiovisual or computer-based material (or any combination thereof), [11]. Besides, the role of the electronic module can encourage students to go through learning events. As revealed by [23] states that learning events are learning phases that tend to: get attention, inform students of the goals, stimulate recall of prerequisite learning, present stimulus material. Providing tutoring, Performing the performance, Providing feedback about performance accuracy, Assessing performance, Improving retention, and transfer called online instructional events [13].

E-Learning module, besides being a source of learning, is also used as a medium to stimulate the learning process in cultivating students to read and learn independently. Based on the results of research, [24] reports that online teaching is not only with oneself, but to equalize the quality of learning. Even though sometimes there are limitations to the use of technology such as the need for maintenance and loss of connectivity, but online teaching (web-based) empowers students and maximize their learning. Students in the study report their preference for being able to continue with their steps, and the time adjusted to their abilities, downloading teaching material, they repeat with the Module as many times as needed. Seven principles of good practice with an emphasis on technology provide a cohesive framework for quality online instruction [1].

Researchers realize that a quality product requires many factors to be more optimal. Many things emerged in the field when the research was carried out, this has further optimized that the product being developed. From this variety, researchers expect that this development can be useful and can be developed further.

5. CONCLUSION

After implementing the development of online-based electronic modules with the Telegram bot program, it can be concluded that the development can answer the problems caused by the lack of teaching materials used, the creativity of using online technology with the Telegram bot program, as innovations in classroom learning as learning media in the 21st century, and help instructor to facilitate students who have different learning characteristics and learning speeds, and have the shame of expressing opinions in conventional classes.

So that the teaching staff can utilize the learning media as an alternative to building blended learning by

the characteristics and needs of the learning environment that can be used anywhere and anytime.

Electronic Module product with Telegram bot program is expected to be a source of learning. It is possible that this product can be used by the wider community as an innovation or additional reference in providing media and learning resources. For further development, further research is expected to measure the effectiveness of the online-based electronic Module with the Telegram bot program.

REFERENCES

[1] Y. Arifani, F. N. M. Khaja, S. Suryanti, and A. Wardhono, "The Influence of Blended In-service Teacher Professional Training on EFL Teacher Creativity and Teaching Effectiveness," *3L Lang. Linguist. Lit.*, vol. 25, no. 3, pp. 126–136, 2019, doi: 10.17576/3L-2019-2503-10.

[2] T. Sušánka and J. Kokeš, "Security analysis of the telegram im," 2017, doi: 10.1145/3150376.3150382.

[3] K. Anwar and A. Wardhono, "Students' perception of learning experience and achievement motivation: Prototyping English for academic purposes (EAP)," *Int. J. Instr.*, vol. 12, no. 3, pp. 271–288, 2019, doi: 10.29333/iji.2019.12317a.

[4] M. A. Heidari-shahreza and S. Branch, "Effect of MALL on the Acquisition of Word Stress Patterns of English by Iranian EFL Learners : The Case of Telegram," *J. Appl. Linguist. Lang. Res.*, vol. 5, no. 1, pp. 40–55, 2018, [Online]. Available: https://www.researchgate.net/publication/3224884 15%0AEffect.

[5] U. Perlis *et al.*, "Teaching and learning enhancement based on telegram social media tool," *J. Intelek*, vol. 11, no. 1, pp. 7–11, 2016.

[6] H. Saribekyan and A. Margvelashvili, "Security Analysis of Telegram," vol. 1, no. 5, pp. 1–12, 2017.

[7] F. Ghaemi, "The Impact of Telegram as a Social Network on Teaching English Vocabulary among Iranian Intermediate EFL Learners," *Int. J. Inf. Commun. Sci.*, vol. 2, no. 5, p. 86, 2017, doi: 10.11648/j.ijics.20170205.15.

[8] R. S. Yudar, "Movie as a Helper for Students' Pronunciation in Speaking Skill Class," *ELSYA J. English Lang. Stud.*, vol. 2, no. 1, pp. 15–19, 2020, doi: 10.31849/elsya.v2i1.3684.

[9] A. Wardhono, "Connecting Generations through Technology and Education," in *Prosiding Seminar Nasional Hasil Penelitian dan Pengabdian kepada Masyarakat III Universitas PGRI Ronggolawe*

Tuban, 2018, no. September, pp. 1–7, [Online]. Available: http://prosiding.unirow.ac.id/index.php/SNasPPM/ article/view/134/135.

[10] K. J. Graziano, M. C. Herring, J. P. Carpenter, S. Smaldino, and E. S. Finsness, "A TPACK Diagnostic Tool for Teacher Education Leaders," *TechTrends*, vol. 61, no. 4, pp. 372–379, 2017, doi: 10.1007/s11528-017-0171-7.

[11] T. H. Wang, "Developing an assessment-centered e-Learning system for improving student learning effectiveness," *Comput. Educ.*, vol. 73, pp. 189–203, 2014, doi: 10.1016/j.compedu.2013.12.002.

[12] Z. H. Iksan and S. M. Saufian, "Mobile Learning: Innovation in Teaching and Learning Using Telegram," *Int. J. Pedagog. Teach. Educ.*, vol. 11, no. 1, pp. 19–26, 2012, doi: http://dx.doi.org/10.20961/ijpte.v1i1.5120.

[13] A. Wardhono and S. Stephen, "Assessing English Speaking and Listening Skilss with the Mobile Application Telegram," *Indones. EFL J. J. ELT, Linguist. Lit.*, vol. 4, no. 2, pp. 147–174, 2018, doi: 10.4324/9781315175522-43.

[14] F. Ramadhan and S. Chendra Wibawa, "Pengembangan Media Pembelajaran Interaktif Matematika Dengan Bot Api Media Sosial Telegram Di Akademi Farmasi Surabaya," *It-Edu*, vol. 2, no. 02, 2017, [Online]. Available: file:///C:/Users/user/Downloads/22520-26529-1-PB.pdf.

[15] Z. A. Abu-Ayfah, "Telegram App in Learning English: EFL Students' Perceptions," *English Lang. Teach.*, vol. 13, no. 1, p. 51, 2019, doi: 10.5539/elt.v13n1p51.

[16] G. Sastrawangsa, "Pemanfaatan Telegram Bot Untuk Automatisasi Layanan Dan Informasi Mahasiswa Dalam Konsep Smart Campus," *Konf. Nas. Sist. Inform.*, pp. 772–776, 2017.

[17] I. Xodabande, "The effectiveness of social media network telegram in teaching English language pronunciation to Iranian EFL learners," *Cogent Educ.*, vol. 4, no. 1, 2017, doi: 10.1080/2331186X.2017.1347081.

[18] Y. H. Rayanto and P. N. Rusmawan, *Model in Teaching and Developmental Research*, 1st ed. Pasuruan: ARI Publisher, 2020.

[19] S. Wahyuni, "Student' Perspectives on Using Telegram Messenger as a Learning Media," *ELT-Lectura J. Pendidik.*, vol. 5, no. 1, pp. 45–52, 2018.

[20] J. W. Creswell, *Reseacrh Design: Qualitative, Quantitative, and Mixed Methods Approaches Third Edition*. London: Sage, 2009.

[21] J. W. Creswell and C. N. Poth, *Qalitative Inquiry Research Design: Choosing Among Five Approaches Fourth Edition*. California: Sage Publisher, 2018.

[22] F. Rostami and F. Khodabandeh, "a Comparative Study of Language Style Variations in E-Mail and Telegram Messages By Non-Native Intermediate Learners of English," *J. Teach. English with Technol.*, vol. 19, no. 4, pp. 69–89, 2016.

[23] M. A. M. Al Momani, "The Effectiveness of Social Media Application 'Telegram Messenger' in Improving Students' Reading Skills: A Case Study of EFL Learners at Ajloun University College/Jordan," *J. Lang. Teach. Res.*, vol. 11, no. 3, p. 373, 2020, doi: 10.17507/jltr.1103.05.

[24] S. Morsali, "The Effect of Storytelling on Iranian EFL Learners' Vocabulary Retention," *Stud. English Lang. Teach.*, vol. 4, no. 4, p. 416, 2016, doi: 10.22158/selt.v4n4p416.