Development Of Electronic Module Writing Biographic Text
Based On *Project-Based Learning* in Class X High School Students

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ABSTRACT. This study aims to describe the process of developing a valid project-based writing e-module (in terms of content, presentation, linguistic, and graphic), practical (in terms of presentation, ease of use, readability, and timeliness), and effective (seen from student activities, learning outcomes, and students' affective) . This type of research is research and development (*research and development*). The development model used is the 4D model, namely the definition phase, the design phase, the development stage, and the deployment stage. This research dataconsists of qualitative data and quantitative data. Qualitative data were collected through filling out the e-module validation questionnaire, e-module practicality questionnaire , student activity sheet observation , and observation sheet. Quantitative data were obtained from student learning outcomes in learning to write biographical text. The results of this study indicate that the e-module write text biography are project-based Air kateg ori very valid. Practicality of e-modules by teachers and students with very practical categories. The effectiveness of e-modules is based on the value of aspects of attitude with the title A and categorized as very effective.

Keywords : development, electronic modules, *project based learning* , writing biographical text.

1. INTRODUCTION

Based on Minister Regulation No. 19 of 2005 concerning National Education Standards explains that the learning process in educational units is held interactively, inspiring, pleasing, challenging, motivating students to actively participate and providing sufficient space for innovation, creativity, and independence according to their talents, interests, and physical development and psychological learners. Therefore, the learning process must be designed, carried out by teachers as educators in order to fulfill the mandate of government regulations. One of the media used to support student learning is the presence of electronic modules. Learning to use electronic modules helps students study independently. In addition, the use of electronic modules can motivate students to learn and improve learning outcomes [1].

The interactive electronic module presents material displayed by multimedia such as videos, animations, simulations, and questions with direct feedback. Electronic modules (e-modules) are good development choices because conventional ones (print modules) are less interactive and have static or monotonous images, while e-modules can present interactive material displayed by multimedia such as videos, animations, simulations, and questions with direct feedback [2]. The electronic module is one of the teaching materials that demand students' independence in finding the concept of learning [3], [4]. The effectiveness of the use of electronic modules is supported by several domestic and foreign research results in the past few decades. The results of the Serevina et al. from Indonesia, published in Turkish international journals, shows that electronic modules can improve students' scientific skills. Furthermore, a study from Indonesia published in the *International Journal of Science and Applied Science: Conference Series* proves that electronic modules can improve students' critical thinking and increase learning motivation [5]. From abroad, many electronic module studies are also carried out such as in Kenya, Slovakia, Saudi Arabia, England, and Palestine [6−10].

The development of electronic modules can be done in various ways or strategies that can trigger students to be more active in the learning process. One way to develop these electronic modules is to use a project-based learning model. Learning using a project-based model enables students and teachers to plan to learn easily, collaborate collaboratively and successfully complete the project on time [11]. Project-based learning involves teachers, students, class activities, and group activities [12]. Project-based learning not only encourages students to complete learning based on learning steps but can also develop critical thinking skills and develop knowledge. Project-based learning is a broad model of instructional learning and can be adapted for all fields of knowledge and various types of learning [13].

The selection of project-based electronic module development models is motivated by several previous studies. *Project-Based Learning* (PjBL) which is used as the basis for compiling electronic modules is arranged based on seven steps. Therefore, the seven languages are used as a basis for compiling electronic modules on biographical material. The seven steps include, (1) determining fundamental questions; (2) project determination; (3) preparing project planning; (4) preparation of project implementation schedules; (5) project implementation with facilitation and monitoring of teachers; (6) preparation of reports and presentations; and (7) project evaluation and project results. *Project-based learning* (PjBL) can be applied in various fields, one of which is in Indonesian learning.

The application of PjBL is intended so that students can produce products. In this study, the product is in the form of biographical text. PjBL is assumed to be right for use in the development of electronic modules in biographical text material.PjBL learning is expected so that students are able to produce a product in the form of a collection of text. T ex that written that is if made into something product set text biography could motivate students for writing. Writing that is too could be read by students others. Besides that, PjBL gives away chance students manage own activities or activity settlement assignments so as to train students to be independent.

This electronic module development research is based on the composition of the X grade high school syllabus in the even semester 2013 curriculum with KD 3.15 which is analyzing aspects of meaning and linguistics in biographical text and KD 4.15 namely compiling biographical text.

Facts in the field show that students' ability to understand and produce biographical text is still low. This information was obtained from the results of interviews conducted with one of the Indonesian language subject teachers in class X Padang 10 Public High School. Based on

the high benchmark value for completing Indonesian language learning, many students have not been able to achieve a score above the determined KKM of 80.

Furthermore, information was also obtained about the limitations of learning resources used by teachers. Teachers only use sourcebooks provided by the Ministry of Education and Culture so that learning resources are also less varied. The limitation of class time learning is also one factor in the development of e-modules. In addition, research on the development of electronic modules for writing biographical text has never been carried out at the location of the research subjects. Besides, information is also obtained that, in learning to write biographical text, students more often copy biographical text that is available on the internet. So, students do not develop their own creativity by going directly to the field interviewing leaders or sources. In writing biographical text, students also have not been able to sort the events experienced by characters.

The use of the learning model is also one of the factors in learning to write biographical text. In learning activities, students tend to be more passive, relying solely on resources and direction from the teacher. Therefore, researchers chose e-module basis with project-based learning model *(project-based learning)* which has never been adopted by teachers in teaching writing biographical text. With project-based learning, the ability to think creatively as well as the activities of students in learning can be improved, so is the skills of students. Understanding and learning activities of students increase with the implementation of project-based learning. Project-based learning not only improves student learning outcomes but also teacher professionalism [14-15].

So, based on this description, it is necessary to develop an electronic module to write PjBL-based biography text (*project-based learning*) for class X high school students. This electronic module is expected to help teachers and students in the learning process that is creative, innovative, and independent by applying the seven steps of the project-based learning model. The seven steps are as follows. *First*, determine the basic question. *Second*, determine the project. *Third*, develop project planning. *Fourth*, arrange a schedule for implementing the project. *Fifth*, project implementation. *Sixth*, compile reports and presentations. *Seventh*, evaluation and process and results of the project.

2. RESEARCH METHOD

The type of research used is *research and development*. Research is the development of research methods used to produce a specific product and test the effectiveness of these products [16]. Research development is the activity of specific products and to test the effectiveness of such products [17]. In conjunction with education, education research and development is a process used to develop and validate products in development. In this case, development research is used to develop e-modules to write a valid project-based biographical text for students to use in learning Indonesian.

This development study uses a 4-D (*four-D Models)* model which is carried out in four stages, namely (1) *define*, (2) design (*design*), (3) *develop*, and (d) spread (*disseminate*) [18].

The development model used is the development model suggested by Thiagarajan, et al, namely the 4-D model. The product developed in this study is a project-based electronic module. The 4-D development model consists of four stages of development, namely (1) *define*, (2) design (*design*), (3) develop (*develop*). And (4) dissemination (*disseminate*).

3. RESULTS AND DISCUSSIONS

3.1 Defining Phase (*Define*)

Based on the results of the initial preliminary analysis, we found deficiencies related to writing biographical text, namely learning resources. Therefore, students need to have practical learning resources to support learning to write biographical text. Thus, students can understand the material and do the exercises to write biographical text well. Students need learning resources that are by their characteristics, both in terms of material, use of language, images, and the attractiveness of presentation of material. Therefore, the researcher designed the e-module as one of the learning resources that were easy to understand, interesting, and by the students' needs to complete the textbook used. For learning to be interesting, the e-module developed is an e-module based on *project-based learning* (PjBL). Through this *project-based learning* (PjBL) model students can produce a product based on the steps specified. These steps start from determining the basic questions, determining the project, arranging the project plan, arranging the project implementation schedule, implementing the project, preparing reports and presentations, and evaluating the process and results of the project.

3.2 Design Stage (*Design*)

The *design* stage is the stage that is carried out to prepare the e-module prototype. There are two activities carried out at this stage, namely (a) designing the e-module framework, and (b) designing the draft module.

Table 1. The e-Module Framework for Writing Biographical Text

Preliminary Framework	Fill in the Introduction Framework
Core Competencies (KI) and Basic Competencies (KD)	Core competencies and basic competencies are used as references to compile the contents of e-modules.
Time	The amount of time needed to study e-modules
Instructions for using e-modules	Guide to studying e-modules
Learning Activities	**Fill in the Learning Activity Framework**
A. Indicators of Competency Achievement	Competencies that students must achieve at each learning activity.
B. Learning objectives	Objectives or demands that must be achieved by students in each learning activity
C. The benefits of studying each learning activity	Usefulness to learn every learning activity
D. Material Description	Material or concepts related to learning indicators
E. Summary	Knowledge Summary
F. Exercise	Questions that aim to provide students with an understanding of the concepts learned.
Evaluation Framework	**Contents of the e-Module Evaluation framework**
A. Performance test	Instructions for performance tests that students will work on

B. Performance test assessment rubric	The table contains aspects assessed, weight, level of performance, and a brief description of the score
C. Guidelines for evaluating performance tests	The way students assess performance tests

3.3 Development Stage (*Develop*)

Validity test

e-Modules that have been compiled will be validated by validators/ experts to find out the feasibility of e-modules. This E-Module will be validated by two validators/ experts. The two experts are experts in the field of learning Indonesian language and literature and experts in the field of educational technology. Aspects assessed in the validation of the e-learning module consist of four aspects, namely content, language, presentation, and graphics.

Table 2. Description of Data Validity of e-Modules by Experts

No.	Rated aspect	Score Gain	Validity (%)	Category
1.	Feasibility of the contents of the e-module	97, 50	97, 50	Very valid
2.	Language e-module	31, 50	98, 44	Very valid
3.	Presentation of e-modules	76	95	Very valid
4.	Kegrafikaan e-module	43	89, 58	Very valid
Validate the e-module as a whole		**248**	**95, 13**	**Very valid**

Based on the analysis of the data, obtained the validity of e-module *Skilled in Writing Biographical Text is* 95.13 % with a very valid category. The description of the validity values of each validated aspect is as follows. *First*, the validation of the feasibility aspect of the e-module content is 97.50 % with a very valid category. *Second, the* validation of the language aspects of e-modules is 98.44 % with very valid categories. *Third*, the validation of the e-module presentation is 95 % with a very valid category. *Fourth,* validation graphic aspects e-modules by 89, 5 8% with a very valid category.

Practicality Test

The practicality of e-modules is useful to find out whether the e-module designed is a practical e-module used by teachers and students.

Table 3. Data Description of Teacher Practicality e-Modules

No.	Assessment Aspect	Total score	Percentage
1.	Ease of use	49	81, 67%
2.	Time used	11	91, 66%
Total		60	
Practicality Value			86, 65%

After analyzing the practicality questionnaire of e-modules filled by practitioners, it was found that the practical value of 86.65 % with categories was very practical. This value is obtained from the calculation of the score of each indicator of practicality. *First*, the ease of

use has a practicality value of 81.67 % with a very practical category. *Second*, the time used has a practical value of 91.66 % with a very practical category.

Table 4. Description of e-Module Practicality Data by Students

No.	Assessment Aspect	Total score	Percentage
A.	Ease of use	1220, 52	87, 18 %
B.	Time used	267, 31	89, 10 %
Total		1487, 83	
Overall Practicality Value			88, 14 %

After analyzing the e-module practicality questionnaire filled in by students, it was found that the practical value of 87.18 % with categories was very practical. This value is obtained from the calculation of the score of each indicator of practicality. *First*, from the convenience of users, it has a practicality value of 89.10 % with a very practical category. *Second*, the time used has a practicality value of 88.14 % with a very practical category.

Effectiveness Test

The effectiveness of e-modules is the final stage of development. The effectiveness of e-modules is done in two ways. *First*, assess students' biographical knowledge. *Second*, after learning to write biographical text is complete, students take a performance test writing biographical text.

Data on the assessment of knowledge in writing biographical text can be seen in the following figure.
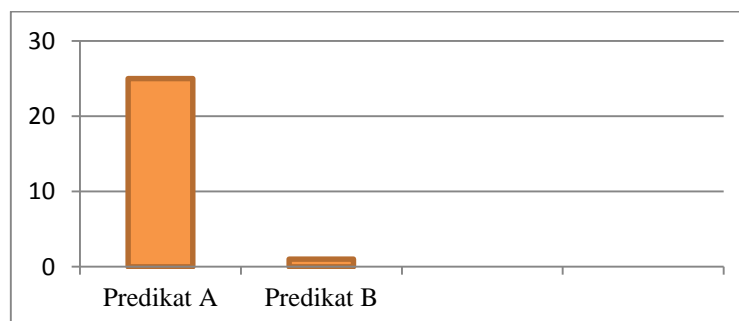

Figure 1. Diagram of the Result of Assessment of Biographical Text Cognitive Tests

Furthermore, overall the average value of the knowledge obtained by students is 90.67 % with a change in the value of A. So, it can be concluded that through biography text learning using effective e-modules to achieve student learning outcomes hin can meet the standards above KKM .

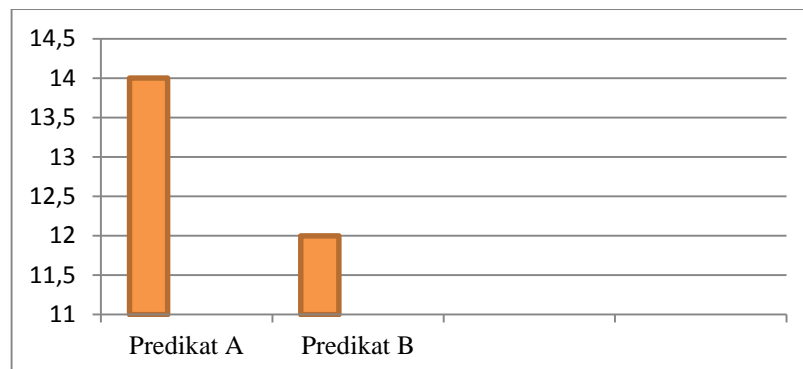Data on the assessment of procedure text writing skills can be seen in the following figure.

Figure 2. Diagram Results of Assessment of Biography Text Performance Tests

Furthermore, overall the average knowledge value obtained by students is 86.43 with a change in the value of A.

Deployment Stage (*Disseminate*)

The deployment stage is the end of the e-module development process write project-based learning biography text based on grade X students at Padang Public High School 10. Before doing the development, the e-module is revised based on suggestions on the practicality test and module effectiveness. The revised E-Module is shared in the form of master/ softcopy. The distribution was carried out according to the advice given by the teacher collaborator in the trial class.

Furthermore, the spread of e-modules to students is also done by distributing master/ *softcopy* e-module on main individual students in a way to *copy* the right *softcopy* device using a data cable to each of the students to other than student test subjects. In addition to the distribution carried out in research schools, the distribution was also carried out with friends. The distribution was carried out by distributing e-module *files* to post-graduate students in Indonesian language and literature education programs at the UNP. Students who get the module are Indonesian language teachers in high school who teach in class X.

The aspects examined at the e-module deployment stage are the benefits provided by e-modules to teachers and students. *First*, e-module writing biography text based on *project-based learning* is a practical learning solution related to biographical text writing material. *Second,* e-modules can complement students' learning resources because they have learning activities that are relevant to text-based learning and scientific approaches. *Third*, e-module is assumed to support learning activities in writing biographical text of high school students. *Fourth, this* e-module is an alternative companion learning resource must be owned by students. *Fifth, this e*-learning module facilitates teachers to achieve Indonesian language learning objectives in the 2013 Curriculum.

4. CONCLUSIONS

Based on the results of research and discussion in this study, it can be concluded as follows. *First*, the project-based module for learning to write biographical text in high school class X students is very valid. The validity of e-modules is seen from four aspects, namely the aspects of feasibility of content, language, presentation, and graphics. Aspects of content

feasibility can be seen from the modules made by the KI and KD 2013 curriculum in learning to write biographical text. The aspects of language feasibility can be seen from e-modules that are made by Indonesian spelling, easy to understand and stimulate students' enthusiasm in learning. The presentation aspect can be seen from the e-modules that have been made using a project-based learning approach. The graphic aspects can be seen from e-modules that have been made easy to read and can increase student motivation in learning.

Second, the project-based module for learning to write high school biography text in class X is very practical. The practicality of e-modules can be seen from two aspects, namely ease of use and compatibility with time. The ease of use aspect can be seen from e-modules that have been made easy to use by teachers and students. The material contained in the module is clear and easily understood by students. Students can study independently without help from teachers and students can study anywhere. The aspect of time suitability can be seen from the e-module that is made by the set time.

Third, project-based e-modules for learning to write high school class X biographies are very effective. The effectiveness of e-modules can be seen from three things, namely attitudes, activities, and student learning outcomes. Judging from the observations made by observers, students showed polite, caring, and appreciative attitudes in learning. Judging from observations made by observers, students look active when learning to use e-modules. Student learning outcomes are obtained from knowledge tests (cognitive) and performance tests (psychomotor). From the results of the assessment, it was concluded that students had mastered biographical text material and were skilled in writing biographical text

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