Development of housekeeping learning module based on e-learning

I D A M Budhyani¹, and M D Angendari²

¹,²Family Welfare Education Study Program, Faculty of Technology and Vocational, Universitas Pendidikan Ganesha, Jalan Udayana No. 11 Singaraja, Bali, Indonesia, 81116

Email: ayu.budhyani@gmail.com

Abstract. Learning module is needed because the use of a learning module can make learning activities more well planned. This study aims were (1) to describe the development of Housekeeping learning module based on e-learning, (2) to determine the feasibility of Housekeeping learning module according to the responses of content experts, (3) to determine the feasibility of Housekeeping learning module according to the responses of media experts, (4) to determine the feasibility of Housekeeping learning module according to the responses of students as a target test. This research is a development research using the ADDIE model. The research variable was the Housekeeping learning module and the data collection technique used a questionnaire. The analysis used was descriptive quantitative analysis. The results of this study are: (1) Housekeeping learning module based on e-learning using the ADDIE development model, (2) the content expert’s test showed that the learning module were in a very good qualifications with a percentage of 98.34%, (3) the media expert's test showed that the learning module were in good qualifications with a percentage of 88% (4) the target test showed that the learning module were in a very good qualifications with a percentage of 90.44%.

1. Introduction

Education is one of the factors that need special attention. This is because education is one of the steps to improve the quality of human resources. Through education, students will get very broad hopes, opportunities, knowledge, and insights to be able to live better. The higher the level of education, the higher the welfare of life that can be achieved. Education can also be a force for change in the face of globalization which is marked by the development of science and technology.

In an educational environment, the teaching and learning process cannot be separated from the creativity and persistence of educators to improve the quality of learning. Therefore, an educator in the learning process must have creative ideas to achieve learning goals well according to expectations. An educator in carrying out the learning process must prepare learning materials such as a syllabus and a learning implementation plan that includes learning objectives, teaching materials, teaching methods, learning resources, and assessment of learning outcomes [1].

Learning resources is one of the important things in preparing a complete and integrated learning module. Educators are expected to be able to develop learning modules that can be used by students as a learning resource in supporting learning activities. Learning modules are materials in the form of information, tools, and text, which are arranged systematically by displaying competences that students
must understand in the learning process [2]. According to I’anah and Raharjo, learning modules are materials or subject matter that are systematically arranged, written or unwritten, used by educators to achieve predetermined competency standards [3].

The learning module can be used as a learning resource for students to be able to learn independently [4]. Learning modules must be designed in accordance with the desired learning outcomes such as the abilities, attributes, skills and attitudes of graduates as stated in the learning objectives and learning outcomes [5]. The learning module provides structured and systematic learning that can help educators and students understand the entire course [6]. This can save educators time in teaching the material if face-to-face meetings cannot facilitate the discussion of the entire learning material.

The 21st century as a digital era makes all information easily obtainable. This is of course also very influential in the world of education. One of the characteristics of 21st century learning is that educators are required to be able to use technology in learning, such as computers, internet, videos, e-mail, teaching materials (e-books) and so on [7]. Technology in learning becomes a medium that is used in helping the learning process to be more effective, and can be easily observed by students [8]. Thus, communication and interaction between students and students will be easier both in class and outside the class.

E-learning is one of the learning methods currently used to fulfill 21st century learning demands by utilizing information technology, so that learning activities become flexible according to the time availability of students [9]. Students can participate in teaching and learning activities without having to meet face to face in class. Educators can also upload material, provide practice questions, quizzes, assignments, discussions through a website-based platform that can be accessed by students. In addition, by using e-learning, students can manage their own learning time so that they can improve their time management skills and the ability to coordinate their study time [10].

Housekeeping course in Family Welfare Education Study Program, Universitas Pendidikan Ganesha is a course that studies the basic concepts of house management such as management and utilization of household resources. The material studied in this course emphasizes household management in the form of flower arrangement and young coconut leaves arrangement (known as janur) that elevate the local culture of Bali. Therefore, students need a learning module that contains all material that is relevant to the learning objectives for this course. The learning module should not only be in the form of printed books but also electronic books, so that students can study it anytime and anywhere. So far, Housekeeping course in Family Welfare Education Study Program, Faculty of Engineering and Vocational Studies, Universitas Pendidikan Gane has experienced several obstacles, such as (1) there is no learning module in accordance with the learning objectives for this course that can be used as a learning resource for students, (2) the demands of 21st century learning have not been fulfilled, namely the use of technology in learning activities, (3) limited face-to-face time, where practical material must be demonstrated step by step, (4) learning resources for Housekeeping course are not well documented. This gives a less than optimal impact on learning to improve the quality of learning.

Efforts that can be made to deal with problems related to learning this Housekeeping course is to develop a learning module based on e-learning that are in accordance with the learning objectives for this course. Learning module is made based on e-learning so that students can also discuss or share learning materials outside the class [11]. This developed learning module can be fully utilized both as a medium for disseminating learning information and as a substitute for face-to-face meetings. Communication activities can also be carried out freely by students and educators regarding related subjects, so that learning activities are not limited to meetings every week. The learning module can be used as a reference for students to be able to learn independently when using e-learning. The content applied in e-learning can be varied according to learning needs, so that e-learning provides a good understanding for students regarding the material that students must understand.

The development of Housekeeping learning module based on e-learning is carried out using the ADDIE model. The ADDIE model is one of the programmed learning design models with systematic sequences to solve learning problems related to learning resources [12]. Development research using the ADDIE model can produce a product in the form of an interactive learning module that is suitable
for students [13]. Based on the explanation, it is necessary to develop Housekeeping learning module as a learning resource for students. The purpose of this study are (1) to describe the steps in developing Housekeeping learning module using the ADDIE model, (2) to determine the feasibility of Housekeeping learning module according to the learning content expert’s responses, (3) to determine the feasibility of Housekeeping learning module according to learning media expert’s responses, (4) to determine the feasibility of Housekeeping learning module according to the responses of students as a target test.

2. Research Method
This research is classified into development research. The Research and Development method is a research method used to produce certain products and to test the effectiveness of the products that have been produced. Research and Development is also used to develop and produce products in the world of education. The development of Housekeeping learning module in this study uses the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation).

This research’s variable is learning modules based on e-learning in Housekeeping course. This course is one of the subjects that must be taken by students of the Family Welfare Education Study Program, Faculty of Engineering and Vocational Studies, Universitas Pendidikan Ganesha. Data collection technique is a process carried out to obtain information or research conditions in accordance with the scope of research. In this study, the development of learning module used an instrument in the form of questionnaire to collect data.

Quantitative descriptive analysis technique was used to process the results of the assessment of content experts and media experts. The target test analysis in this study was students who have taken the Basic Housekeeping course. The target test was carried out to determine the responses of students who already have experience following basic housekeeping courses and have not understood some of the material in these lectures. This test aimed to test the module that has been developed in terms of module reading interest, material developed, and in terms of language. The assessment for expert testing, learning media testing and target testing are calculated by the following formula [14].

\[
\text{Percentage} = \left( \frac{\text{total score}}{(\text{the highest number of scores}) \times (\text{number of items})} \right) \times 100\% \tag{1}
\]

To see the level of achievement of the learning module development based on the percentage calculation, the criteria are set according to the achievement level table as in Table 1.

| Achievement Level | Qualification | Description |
|-------------------|---------------|-------------|
| 90% - 100%        | Very Good     | No need to be revised with a few notes |
| 75% - 89%         | Good          | No need to be revised with notes and suggestions |
| 65% - 74%         | Enough        | Revised |
| 55% - 64%         | Less          | Revised |
| 0% - 54%          | Very Less     | Revised |

3. Result
This study is the development of a learning module based on e-learning in Housekeeping course at the Family Welfare Education Study Program, where the learning module is developed as a module to support learning activities. Learning content is packaged according to the syllabus of Housekeeping course in the Family Welfare Education Study Program, Faculty of Engineering and Vocational Studies,
Universitas Pendidikan Ganesha. So that it can be used as a learning resource in learning activities. The development of this learning module is carried out based on the ADDIE model steps.

The first is the analysis stage. The analysis stage is the stage of identifying problems in learning housekeeping subjects and then being appointed to a study to find problem-solving solutions. Problems in the Housekeeping course are (1) there is no learning module that can be used as a learning resource for students, (2) the demands of 21st century learning have not been fulfilled, namely the use of technology in learning activities, (3) limited face-to-face time, where practical material must be demonstrated step by step, (4) learning resources for Housekeeping course are not well documented which can later be applied in e-learning.

The characteristics of the target test, namely students, are generally accustomed to use technology to support the learning process. If learning activities are supported by media that can be accessed by students, learning activities can take place anywhere and anytime. The development of this learning module is to be applied in e-learning so that students can use the media to continue learning which cannot be done due to the limited learning time in class. The use of this media is also one of the steps in applying technology in learning activities.

The solution needed are: (1) appropriate content is needed in the learning module so that it can be applied to e-learning and can also be used optimally to help learning activities, (2) the use of technology is needed to assist learning activities and familiarize students to use technology in learning activities, (3) learning module that are in accordance with the learning objectives for this course is needed to help students understand the entire material during the learning process, (4) in order for students to learn independently, learning module based on e-learning is needed where educators do not have to guide students one by one, but fellow students can also help each other. The things that are done at the analysis stage are determining the modules to be developed, analyzing the core competencies, analyzing the basic competencies, analyzing the indicators, and analyzing the materials to be developed.

The second stage is the design stage of the learning module. In the design stage, it begins to make an initial design in the form of a learning module framework that will be developed. Thus, this makes it easier to create a learning module. At this stage, the feasibility questionnaires were also designed to be tested on content experts and media experts. In addition, it also designs student response questionnaires to the learning modules that will be developed.

The third stage is the development stage. The development stage is the stage of realizing concepts that have been previously designed at the design stage. All designs, tools, and products are prepared so that they can be used at the implementation stage. Overall, the development stage is the stage of creating learning content in Housekeeping learning module. After the learning module has been developed, then it is carried out a feasibility test by content experts and media experts.

The fourth stage is the implementation stage. The implementation stage is the stage of implementing the product after testing of content experts and media experts. At this stage, the limited trial was carried out simply on 9 students. The implementation was carried out on the target test, namely students who have taken the Housekeeping course. This is done to determine the comparison between conventional learning activities that have been passed and learning modules that have been developed based on e-learning. After calculating the overall learning content in the Housekeeping learning module, an average percentage of 90.44% is obtained and this showed that the learning module that has been tested on the target test is in the very good category.

The fifth stage is the evaluation stage. The evaluation stage is carried out according to the results of the assessment by the experts and target test. Overall, according to content experts and media experts, the learning content applied to the e-learning platform is in good quality and it is feasible to be used in helping learning activities in Housekeeping course. At this stage, revisions are made after receiving suggestions, comments, and input from content experts, media experts, and students.

Content testing is carried out to determine the quality of the material content in the learning module and the suitability of the existing material with the syllabus and the needs of learning activities. Content testing was carried out by lecturers who have been taught the Housekeeping course.

The results of the testing by content experts are as follows.
The average percentage of the feasibility assessment on Housekeeping learning module based on e-learning by content experts is 98.34% and is in the very good category. Based on the results of the assessment by the learning content experts presented, it can be concluded that the level of achievement of the learning content that has been made is in "Very Good" category. This indicates that the learning content that will be implemented in e-learning is feasible to be continued and is suitable to use in learning activities for the Housekeeping course.

The content development that has been created will be applied to e-learning as a learning medium that can overcome problems encountered during learning activities in the Housekeeping course. To find out the feasibility of the media that has been made, testing is carried out by appropriate experts who have competence in the field of learning media.

The results by media expert testing are as follows.

\[
Percentage\ content\ expert\ 1 = \frac{total\ score}{(the\ highest\ number\ of\ scores) \times (number\ of\ items)} \times 100\% \quad (2)
\]
\[
\frac{30}{5 \times 6} \times 100\% = 100\%
\]
\[
Percentage\ content\ expert\ 2 = \frac{total\ score}{(the\ highest\ number\ of\ scores) \times (number\ of\ items)} \times 100\% \quad (3)
\]
\[
\frac{29}{5 \times 6} \times 100\% = 96.67\%
\]

The average percentage of the feasibility assessment on Housekeeping learning module based on e-learning by content experts is 98.34% and is in the very good category.

Furthermore, the limited target test was carried out simply by testing it with 9 students. The target test are students who have taken Housekeeping courses before. This test is conducted to determine student responses to learning modules that can be accessed using e-learning.

The results by students target testing are as follows.

\[
Percentage\ media\ expert\ 1 = \frac{total\ score}{(the\ highest\ number\ of\ scores) \times (number\ of\ items)} \times 100\% \quad (4)
\]
\[
\frac{45}{5 \times 10} \times 100\% = 90\%
\]
\[
Percentage\ media\ expert\ 2 = \frac{total\ score}{(the\ highest\ number\ of\ scores) \times (number\ of\ items)} \times 100\% \quad (5)
\]
\[
\frac{43}{5 \times 10} \times 100\% = 86\%
\]

The average percentage of the feasibility assessment on Housekeeping learning module based on e-learning by media experts is 88% and is in the good category.

Furthermore, the limited target test was carried out simply by testing it with 9 students. The target test are students who have taken Housekeeping courses before. This test is conducted to determine student responses to learning modules that can be accessed using e-learning.

The results by students target testing are as follows.
\[
\text{Percentage target test} = \frac{\text{total score}}{(\text{the highest number of scores}) \times (\text{number of items})} \times 100\%
\]

\[
= \frac{813.45}{5 \times 11} \times 100\%
\]

\[= 90.44\%
\]

The average percentage of the feasibility assessment on Housekeeping learning module based on e-learning by target test is 90.44\%. This shows that the learning module tested on the target test is in the very good category.

Based on the results of testing by content experts, media experts, and target test it can be concluded that the achievement level of the development Housekeeping learning module based on e-learning is in the very good category. This indicates that the content in the learning module applied to e-learning is feasible to continue and it is suitable to use in learning activities for the Housekeeping course.

4. Discussion

The development of Housekeeping learning module based on e-learning for students of the Family Welfare Education Study Program aimed to solve several problems that arise in the implementation of learning activities. These problems are; there is no learning module in accordance with the learning objectives for this course that can be used as a learning resource for students, 21st century learning requires the use of technology in learning activities, limited face-to-face time, where practical material must be demonstrated step by step, and learning resources for Housekeeping course are not well documented.

The development of Housekeeping learning module based on e-learning used the ADDIE development model, because this model is the most effective to use. The ADDIE model is very suitable for developing learning products with an online learning model because it is more effective and efficient with systematic and clearly defined stages [15]. The ADDIE model is a learning design model that is based on an effective and efficient system approach and an interactive process, namely the results of the evaluation of each phase can bring learning development to the next phase [16].

The steps for developing Housekeeping learning module used 5 steps, namely Analyze, Design, Development, Implementation, and Evaluation [17]. In the first stage, the analysis determines the problems that exist during the housekeeping learning and then determines the solutions that must be taken. Furthermore, the second stage is designing solutions that have been determined at the analysis stage. At this stage, several things were done including designing the learning content, designing the implementation to be carried out, and designing a questionnaire that will be used to test the feasibility of the learning module that has been made.

The third stage is development which is the stage of making the product. At this stage the product realization was made in the form of a learning module. Learning module that was made are adjusted to the existing syllabus. In the learning module, it is also equipped with assignments as an evaluation of each material that must be done by students. In addition, making questionnaires to assess the content of learning materials and learning media and questionnaires for students' responses to teaching materials was also carried out at this development stage.

The fourth stage of implementation went according to plan, specifically described in the evaluation stage. In the fifth stage, an evaluation was carried out on the quality of the learning modules that have been developed. The learning module was evaluated by content experts, media experts and also the responses of several students as target tests to the learning modules that have been developed.

The test results were carried out by two content experts in the Housekeeping course through closed and open questionnaires. The results of the content expert's assessment through a closed questionnaire obtained an average percentage of 98.34\% and this shows that the material that has been developed is in the very good category. In the open questionnaire, there were several entries such as (1) there were
several sentences that needed to be revised, (2) the explanation of the material needed to be added with more examples, and (3) examples with pictures needed to be added.

The media test in the learning module was carried out by two media experts through a closed questionnaire and obtained an average percentage of 88%. This shows that the learning module that has been developed is in the good category. Some of the input given by media experts, such as: (1) there were typos, (2) there were mismatches of spacing in chapters and sub-chapters, (3) some sentences needed to be clarified.

Learning modules that have been developed and tested on content experts and media experts are tested on 9 students as target tests. The target tests are students who have taken the Housekeeping course before. This test was conducted to determine student responses to learning modules that can be accessed using e-learning and compares it with conventional learning modules that have been previously studied. The results of the target test obtained an average percentage of 90.44%. This result shows a very good category. So the learning module that has been developed can be used as a learning resource in Housekeeping course.

The learning module is an important part of the learning process. The distinctive feature of the Housekeeping learning module that was developed is that it raises the local culture of the Balinese area, such as the learning material for arranging janur. The arrangement of janur is an activity that is routinely carried out for the purposes of ceremonial facilities, usually performed by Balinese women, known as the “mejejahitan” culture. Learning modules that contain local wisdom, especially culture, are very important to be developed to introduce cultural values to students so that they can raise their desire to learn or preserve local wisdom values [18].

Overall the test results from content experts, media experts, and students' responses as target tests to the learning module that have been developed have received a very good response so that this module can be used as a learning medium for the Housekeeping course. This learning module is very useful to support the learning process. The learning module plays an important role in improving the quality of learning [19]. In addition, teaching materials have an important role in the teaching and learning process, because they help educators achieve learning goals [20].

5. Conclusion

Based on the results of the research that has been done, it can be concluded as follows (1) The Housekeeping learning module was developed with the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation). After the Housekeeping learning module has been developed, a trial of this module was conducted on content experts and media experts. Target test trials were carried out on 9 students. (2) The results of the content expert’s test of the Housekeeping learning module showed that the average percentage of content test results is 98.34%. This percentage is in the very good category and the learning module does not need to be revised and only gets a few notes from content experts. (3) The results of the media expert test of the Housekeeping learning module showed that the average percentage of media test results is 88%. This percentage is in the good category, without revisions and some notes and suggestions. (4) The test results on students as the target test obtained an average percentage of 90.44% and this is in the very good category. Students are also very enthusiastic when using this Housekeeping learning module based on e-learning.

Based on these conclusions it can be suggested: (1) the development of Housekeeping learning module based on e-learning still needs to be improved according to the development of science and technology (2) the results of the development of this learning module need to be followed up by conducting experimental research, (3) To other researchers, it is hoped that they can develop other content besides the learning modules for the Housekeeping course.

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