

The Development of Module on Subject of Simple Media and Digital Printing at Baturaja University

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Abstract— The purpose of this study was to develop a learning module on simple media and digital printing subjects at the Educational Technology Department of Baturaja University. This was a Research and Development (R&D) study. Data collection techniques gained using questionnaires. From the results of the trial, media experts obtained a score of 77.8% belong to 'good' criteria. Learning design experts obtained 79%, which was 'good' criteria. Material experts obtained 85% and also belonged to 'good' criteria. In one-to-one evaluation, three students involved as respondents and obtained 83.07% belong to 'good' criteria. Small group evaluation with eight respondents obtained 77.68% belong to 'good' criteria. Then a field test was conducted with 23 respondents, and the results showed the level of product feasibility in the criteria of 'very good.'. Hence, it concluded that this learning module is feasible to be used for the Educational Technology Department as a supporting tool in simple media and Digital Printing subjects.

Keywords: *instructional, learning, research and development, module*

I. INTRODUCTION

Instructional is a system, which consists of various components that are interconnected one to another [1]. The components in Learning: curriculum, teacher, students, material, methods, media, and evaluation. If one of these components does not function properly, the learning objectives are feared not being achieved. Not achieving the objectives of learning also occurs in one of the courses at Baturaja University, that is simple media and digital printing. It is one of the subject matter in the Educational Technology Department at Baturaja University. This course applied practice more often than theory. Some problems faced in this course is they often spent much time to explain the material before practicing, this is not in accordance with the learning plan where theory spends 40 percent and 60% practice. After doing some need analysis, the researcher found that the lack of media in the learning process also became one of the reasons. So far, the lecturer used some books or online articles as a learning source. Not every material prepared in one book, so they need separate

books to complete it. This problem made the learning process not to run effectively and take more cost and time. This course needed more practice than theoretical, but the lack of learning media needed more time for teachers and students to build knowledge before practicing them. As we know that the use of media in the learning process could improve the quality of education [2].

This continued problem decreased learning outcomes and affected in not achieving the learning objectives. To solve this problem, necessary to develop a media which can facilitate the learning process. Learning media could be used as an intermediary in bringing information between the teacher and the student in the learning activities [3]. There are so many media for learning, but based on need analysis, learning modules could be an alternative for this course. The module is a book written with the aim that students can study independently without or with the guidance of the teacher [4]. A learning module is an organized collection of the content presented together, which is designed systematically based on the curriculum [5]. Study results in Ireland stated module, providing opportunities for reflection and discussion with peers and mentors [6] because students could be prepared the material before class. The module could be used as an independent learning material and as a complement to learning media [7].

We observed the learning needs in simple media and digital printing course by questionnaire and interview process. Then we concluded that a complete structured module that is made based on the learning objectives in one semester could be a solution to solve the learning problem. So, the aim of this research was how to develop a module for simple media and digital printing course at Baturaja University. Then, the research question of this study is how to develop a valid learning module for simple media and digital printing course at Baturaja University.

II. METHODOLOGY

This study is Research and Development (R&D). Educational Research and Development is a process used to develop and validate educational products [8]. The results of development research are not only the development of an existing product but also to find knowledge or answers to practical problems. This study followed Warsita's model [9]. The procedure of developing a model using the descriptive procedural model. There are three steps in this model; (1) design, (2) Production, and (3) Evaluation.

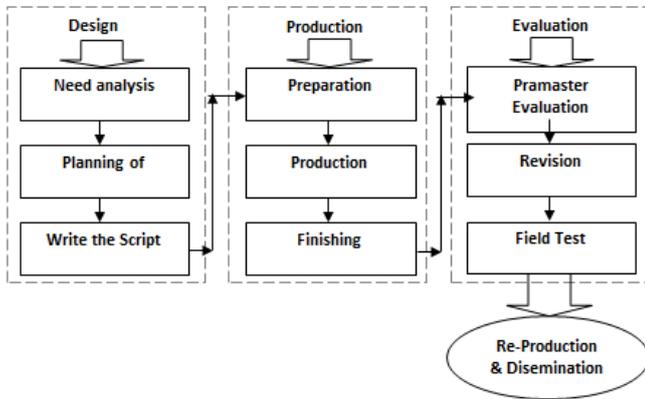


Fig. 1. Step of Warsita's Model

The Validity tests will be carried out by three experts to find out the module validity. They are material experts, learning design expert, and printed media expert. The validation process will be done in the pra-master evaluation. The next trial is doing the one-to-one evaluation, which will be tested to 3 students. The respondents taken must be represented of three different abilities; medium, low, and high. Then followed by small group evaluation, which will be tried to 8 respondents. Then field tests will be conducted with the 23 respondents. Data collection for all of the evaluation will use a questionnaire. So, we prepare six questionnaires for the evaluation step.

III. RESULTS

There are three steps in developing this module:

A. Design

In this step, researchers did some need analysis, collected some information from students and lecturer by spreading some questionnaires. We gained some information about students' character, students' background, learning process, learning objectives, and learning goals, some weaknesses, and strongest in the learning process. All information needed would be the basis for determining what type of media could facilitate the learning process. The result of this research is a manuscript and storyboard of the printed module for simple media and digital printing course.

B. Production

Researcher prepared some material needed to produce the product. Start from the material, exercise and evaluation to complete the module, layout design, color alloy, text and image

needed. We planned it in the storyboard. After well preparation, then produce the product. The product is a printed module which is having 70 pages. In finishing the product, we reviewed and corrected the product before being validated by an expert. Some display of the product shown in Figures 2,3,4, and 5.

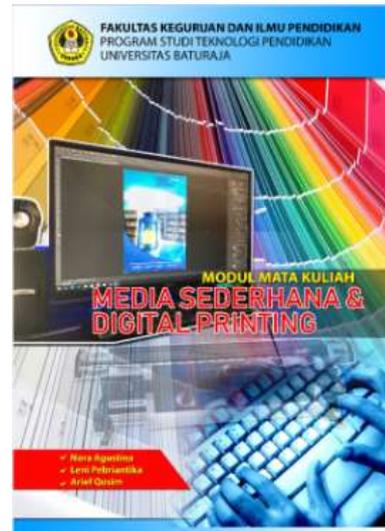


Fig. 2. Cover of the module.

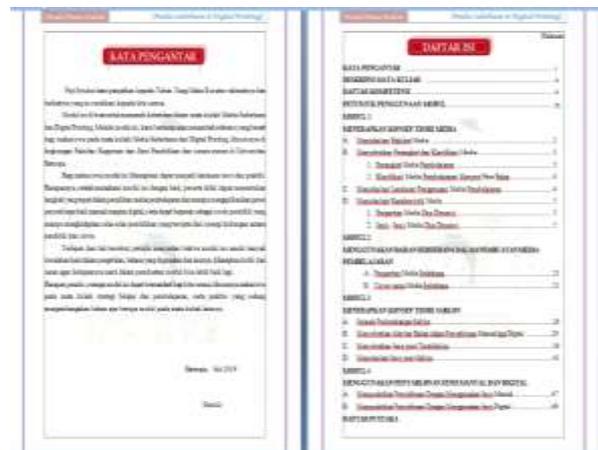


Fig. 3. Preface and table of contents



Fig. 4. Competence and Material

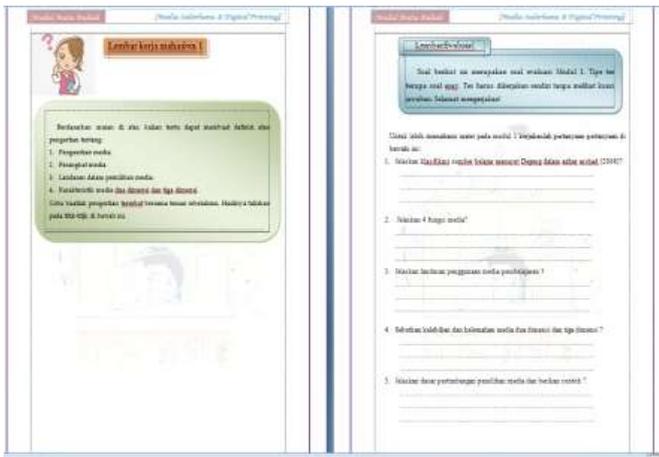


Fig. 5. display of materials and exercises

C. Evaluation

There are three experts involved to validating this module, and the score shown at the table below:

TABLE I. RESULT OF EXPERTS' VALIDATION

Expert	Average Score	Criteria
Media Expert	77,8 %	Good
Material Expert	79,0 %	Good
Learning Design Expert	85,0 %	Good

The experts also gave some revision and recommendation: Learning design experts recommended to the separated module for lecturer and students because the instruction in the lecturer module was more specific. There must be an answer key for each exercise and evaluation. The media expert recommended to change the type of text and did some revision for cover color and layout. The material expert gave revision to add some material at module 2-sub material: Manual Screen Printing.

The resulting trial for students shown at the next table:

TABLE II. RESULT OF EXPERTS' VALIDATION

Trial	Average Score	Criteria
One-to One Evaluation	83,07%	Good
Small-Group Evaluation	77,68%	Good
Field Test	83,14	Good

Overall results indicate that the product belongs to the 'good' category, and it is suitable to be used for the learning process at simple media and digital printing course at Baturaja University.

IV. DISCUSSION

The modules developed had the advantages compared to the previous one, especially the material. It more specific and described detailed step by step in manual screen printing and digital screen printing so Students could follow the instruction freely and clearly. The module helped students more to learn the material independently, as one of the characteristics of the

module is self-instruction [10]. The other strongest of this module was learning design, which is developed by the latest curriculum, so it's appropriate with the course needed in this era. The module also presented a take-home assignment that could be practiced by the group, and there was an easy and complicated assignment. The results of the interview showed that students like to finish complicated assignments by a group using the module as a guide. Complicated assignments were also motivated students to learn [11]. The instructional process in simple media and digital printing runs more effectively since the prepared module. Because they need a short time to deliver the material. The material could be learned outside the classroom so that the lecturers and students have more time to complete tasks and practice the material [12].

V. CONCLUSION

Based on the results of research and analysis of the development of module teaching materials, the researcher concludes that this module product is feasible to be used as teaching material and is applied by its users. Especially for simple media and digital printing courses.

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