

Development of Tutorial-Based Teaching Books in Basic Embroidery Engineering Courses

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Abstract

The lack of availability of teaching materials on basic embroidery techniques means students learn embroidery by relying on examples from previous assignments and searching for assignments on YouTube. Even though this example does not contain detailed steps, students still experience difficulties in understanding embroidery techniques, the art of arranging thread, adjusting and placing the right colors for good, embroidered decoration. Therefore, there is a need for tutorial-based textbooks on learning basic embroidery techniques. The aim of the research is to produce a tutorial-based textbook on basic embroidery techniques courses in the fashion design education study program at Medan State University. The development model uses the ADDIE model. The data collection technique uses a questionnaire and is analyzed using qualitative descriptive analysis. Validation of teaching materials is carried out by material experts and media experts. The validity test of material experts obtained 83.9% and media experts obtained 81.73% in the good category. The results of small group trials obtained 81.8%, medium scale trials obtained 82.87% and large group trials obtained 85.3%. The results of the research show that tutorial-based teaching materials are suitable for use in learning basic embroidery techniques courses. It is hoped that this tutorial-based teaching material can help teachers convey practical material in detail and make it easier for students to understand basic embroidery techniques independently.

Keywords: ADDIE, Basic Embroidery, Teaching Books

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INTRODUCTION

Education is a planned basic effort to create a learning atmosphere and learning process so that students can actively develop their potential (Isnaini, 2023). The success of education is largely determined by its implementation (process). The success of the teaching and learning process can be measured by the success of students participating in learning activities. This success can be seen from the level of understanding of the material and student achievement. One of the determining factors for the success of learning is the existence of media and or learning resources that are easy for students to use (Febrianto & Puspitaningsih, 2020). Creative use of instructional media can expedite and increase learning efficiency so that learning objectives can be achieved (Muhtar, et al. 2020).

Learning media is a learning tool to improve quality learning outcomes (Munib & Utomo, 2022). Limited learning media greatly affect the success of learning. Appropriate learning media really helps

students in the teaching and learning process and assists teachers in providing explanations of the learning material to be delivered (Wulandari, et al. 2023). According to Wiratmojo and Sasonohardjo in Junaidi (2019) the use of learning media at the teaching orientation stage will greatly help the effectiveness of the learning process. In line with this, Zaini (2017) said that with learning media, teachers can divert students' attention, so they don't get bored and bored quickly in the teaching and learning process. This means, the media is very influential on the success of student learning.

The basic embroidery technique is a course that is parallel to the embroidery appreciation course, so it requires learning about basic embroidery stitches earlier before continuing on to the next course. The basic technique of embroidery is one of the arts and crafts that has a lot of diversity including variations of embroidery techniques, having the art of arranging threads, adjusting colors and placing the right ones for embroidered decorations. In the basic embroidery techniques course students are not limited to just understanding the theory, but students must implement the theory in direct practice so that students are able to independently make basic embroidery.

Based on the results of interviews with lecturers in the basic embroidery technique course, basic embroidery techniques courses really need the right media to facilitate the delivery of material. It is known that reading sources or references as well as teaching materials regarding embroidery that can be utilized by students are still few. In the learning process in class, the learning media used by students to learn embroidery is still in the form of examples of previous student assignments. There are also books that are used, but they only explain in general terms about various types of embroidery, not including tutorials according to the needs of students for independent learning. So that the learning process in student classes is still centered on the lecturer in charge of the subject and the results from the practice of student embroidery are not optimal, especially if done independently.

The existence of textbooks as student learning media in lectures is essentially to facilitate learning (Febrianto & Puspitaningsih, 2020). Media can expedite the process of interaction between lecturers and students and help students learn optimally (Istiqlal, 2018). Textbooks are printed materials developed as student learning resources (Oktaviana et al., 2020; Prasetyo & Perwiraningtyas, 2017; Suplemen et al., 2017). Textbooks help students study material systematically and structured so they can increase students' knowledge (Putrantana et al., 2020; Safitri & Nurkamilah, 2020). The development of textbooks that are used as media can significantly improve student learning outcomes if they are developed according to the needs and characteristics of students. The development of textbooks requires a systematic design that refers to learning systems, message designs, methods or strategies and pays attention to student characteristics (Solehudin et al. 2017; Rohmah et al. 2017)

Textbooks act as a guide to the learning process because they have a systematic reference material for teaching and are the substance of the competencies taught to students. The existence of textbooks will help learning programs to be implemented more regularly because lecturers as education implementers and students will receive clear material guidelines. The development of tutorial-based textbooks will provide several benefits, namely: (1) available textbooks that suit the curriculum and students' learning needs; (2) easy to obtain teaching materials because they no longer depend on other textbooks which are difficult for students to obtain; (3) more varied and more specific textbooks are available because they are developed based on needs and from various references; (4) establishing effective learning communication with students. The development of textbooks has a positive impact on students. Students will find it easy to learn each competency they must master. Apart from that, students get the opportunity to study independently

Tutorial-based textbooks are textbooks that contain systematic and coherent work steps for making basic embroidery techniques. Students can follow the work steps according to the instructions in the textbook. The use of tutorial-based textbooks is felt to be able to help in learning basic embroidery techniques. The material in the developed textbook will be packaged in detail with the steps for making basic embroidery techniques. So that tutorial-based textbooks are really needed to help students understand in detail the theory and practice in basic embroidery techniques courses.

METHOD

This research is a Research & Development (R&D). The development model used is the ADDIE development model. The ADDIE model uses a systems approach. Cheung (2016) states that ADDIE is a model that is easy to use and can be applied in curricula that teach knowledge, skills or attitudes. The ADDIE model is the most popular model used for the development of creations from teaching materials (Drljaca, 2017). The ADDIE instructional model is an instructional process that consists of five phases, namely dynamic analysis, design, development, implementation and evaluation (Branch, 2009; Stapa et al., 2019; Jonnalagadda et al., 2022). The following is the flow of research and development steps according to Robert Maribe Branch (2009) in (Sugiyono, 2016).

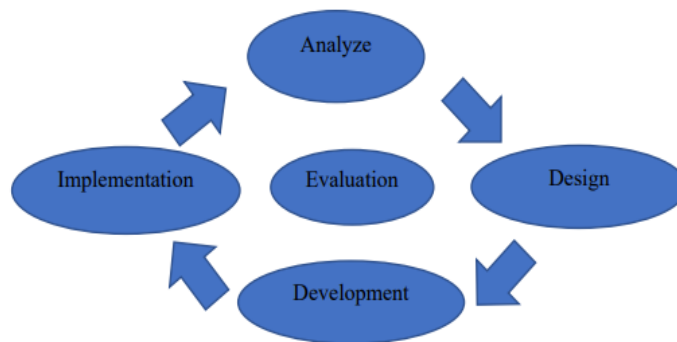


Figure 1. ADDIE development steps

The instruments used were observation, interviews, and questionnaires. Data analyzed descriptively into interval data using a Likert scale. According to Widoyoko (2012) that scale five has more variability than scale four so that it.

$$\text{Intervals (i)} = \frac{\text{Highest Score} - \text{Lowest Score}}{\text{Number of Interval Chasses}}$$

can reveal differences in respondents' attitudes more fully. the five scale criteria used are: Very Good, Good, Not Good, Very Bad, Very Bad. According to Sugiono (2017) On the Likert scale to determine the interval between the attitude levels from very bad to very good, the formula is used:

$$P = \frac{\text{Data Collections Score}}{\text{Total Score}} \times 100\%$$

Description: P = Percentage Number

RESULTS AND DISCUSSION

The basic embroidery technique is a theoretical and practical course that must be understood by students and must implement this theory in direct practice so that students are able to make basic embroidery independently. However, the limitations of learning media are one of the obstacles faced by students to practice independently. The basic embroidery technique textbook was developed using the ADDIE development model. The development steps are analysis, design, development, implementation, and evaluation. At the analysis stage, an initial analysis was carried out, namely identifying potentials and problems, followed by analyzing the needs of lecturers and students. The results of the

questionnaire on the needs of the lecturers were that the lecturers strongly agreed with the development of media in the form of basic embroidery tutorial teaching materials with a percentage of 88.75% strongly agree. The results of the lecturers' needs questionnaire were also supported by the results of the student needs analysis which obtained 84.27% of students supporting the development of tutorial-based textbooks.

At the design stage identification of product planning strategies is carried out, namely gathering the information needed for product development in the form of reviewing the curriculum, syllabus, developing an initial storyboard, and the initial appearance of the media as well as drafts of media content in accordance with the learning competency goals. Media content includes covers, basic competencies, indicators, subject matter and evaluation. The software used is Canva.

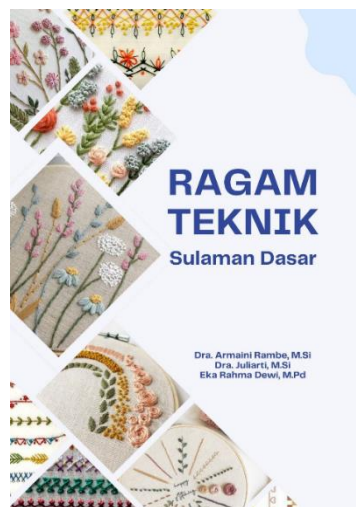


Figure 2. Cover of a tutorial-based textbook

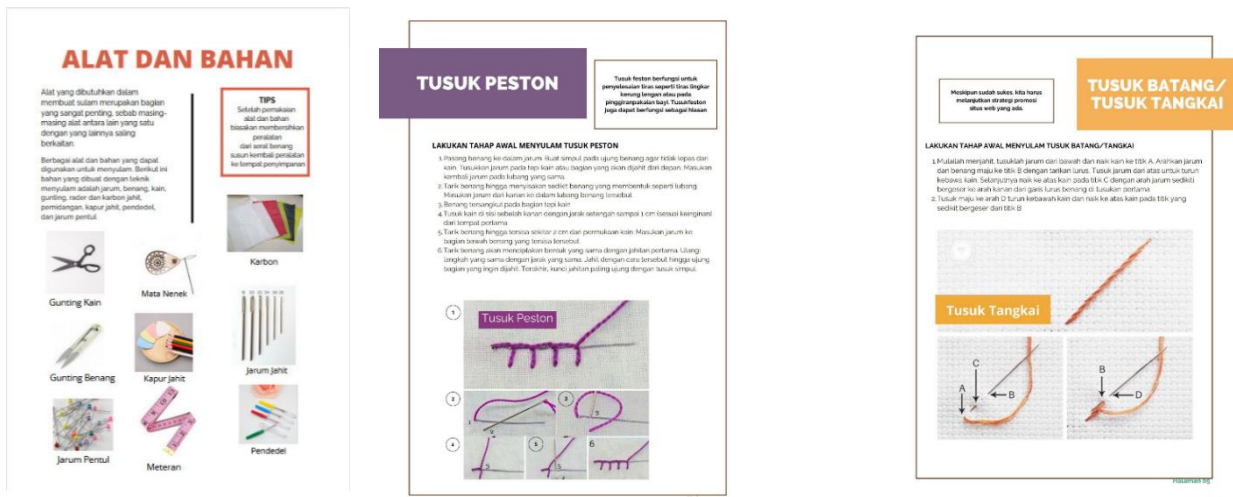


Figure 3. Content of a tutorial-based textbook

The learning media to be developed is a tutorial-based textbook on the subject of basic embroidery techniques. At the development stage, the product in the form of textbooks that have been realized will be validated by material and media experts, so as to obtain quality textbooks that are

suitable for use in the teaching and learning process. The textbook will be revised according to suggestions from all validators.

Material expert validation was carried out by two lecturers in the basic embroidery technique course. The results of the material expert's assessment form the basis for improving the material in the textbook.

Table 1. Validation Results by Material Experts on Textbook Development

Category	Percentage	Criteria
Content quality	85%	Good
Instructional	82,85%	Good
Average	83,9%	Good

The assessment indicators for the material are related to the suitability of the learning objectives, the content of the material, and the benefits of learning. Good material is material that is appropriate to the learning objectives and course characteristics. From table 1, it can be seen that the validation results obtained based on content quality were 85% and on instructional it was 82.85%. The average assessment result by material experts is 83.9% in the increasing category. This means that the material in the textbook is suitable for use in learning embroidery. Media validation is carried out to see the suitability of textbooks in the media aspect. Media validation is carried out by people who are experts in their field.

Table 2. The Results of Textbook Development Validation by Media Expert

Category	Percentage	Criteria
Textbook	77,86%	Good
Textbook	88,75%	Good
Language	78,57%	Good
Average	81,73%	Good

The media validation results are the results of the revised media. Indicators assessed on media are related to media design, media layout, writing and language in the media, image sharpness and media attractiveness. In good media, writing must be arranged in such a way that it does not interfere with the material being presented (Ulfah & Jumaiyah 2018). From table 2 it shows that the appearance of textbooks obtained 77.86%, the benefits of textbooks obtained 88.75%, language obtained 78.57%. The average assessment by media experts was 81.73% in the good category so that the textbook developed was suitable for use in embroidery learning. From the results of the validation of material experts and media experts it was stated that tutorial-based textbooks were in the good category and were suitable for use in the learning process. Textbooks that have been validated are then implemented to students.

The implementation phase is carried out with product trials. The trial is intended to identify product deficiencies (textbooks). The trials included small, group, medium, and large group trials. A small group tryout was conducted by 8 students to determine how they felt about the new media. The results of the small group trials of students felt that textbooks were appropriate for use in the learning process with an average of 81.8%. The group test is being carried out by 16 students with a gain of 82.87% in the good category. A large-scale trial was carried out by distributing questionnaires to 32 students enrolled in the Basic Embroidery Techniques course. The test results were 85% in the good

category. From the results of small, medium and largescale trials, tutorial-based teaching materials are appropriate for use in learning.

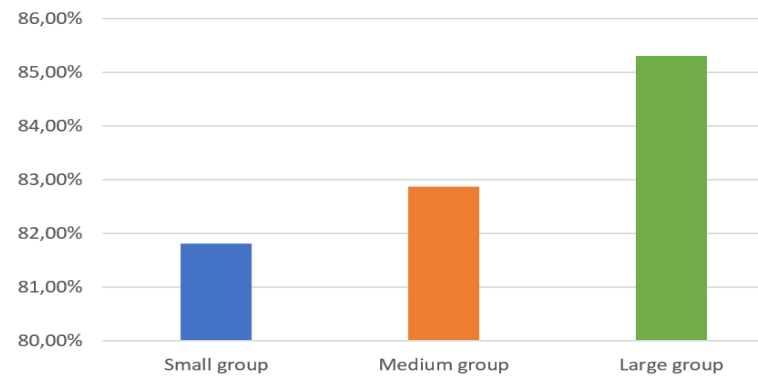


Figure 1. Group Trial on the Development of Textbook Media

Evaluation is carried out in two forms, namely formative evaluation and summative evaluation. Formative evaluations are carried out at the end of each face-to-face meeting (weekly) while summative evaluations are carried out after the overall activity (semester) ends. Summative evaluation measures the final competence or learning objectives to be achieved. Evaluation results are used to provide feedback on the development of textbooks.

Tutorial-based textbooks on basic embroidery techniques are packaged according to student needs, containing details on the steps for making basic embroidery that are easy for students to understand so that students are able to study independently. The textbooks that have been made have also been able to add to students' insight into the basic techniques of embroidery. This means that the developed textbooks are in accordance with achievement indicators, general instructional objectives and specific instructional objectives. This is in accordance with what was stated by Nugraha & Syafi (2020) that the content of the book is also an important part. textbooks contain content that is relevant to competence and is broken down according to student needs. Learning materials are prepared and designed based on the characteristics of embroidery courses and the expected competencies so that the latest learning materials keep up with current developments. This is in accordance with the opinion of Gunawan (2022) who states that learning materials must be arranged according to the characteristics of the course. The preparation of textbooks refers to CPL and CPMK so that competencies appropriate to their field of expertise are achieved. Textbook products that are arranged according to needs can make it easier for students to build their own knowledge concepts (Hadi & Agustina, 2016; Habibi, et al., 2016).

Textbooks have been able to be absorbed by students well because they include clarity of indicator objectives, order of presentation, motivation, attractiveness, and completeness of information. This is in accordance with the statement of Amini et al., (2021) that a valid presentation presents a formulation of indicators, provides motivation and attraction, provides interaction with students, as well as clear objectives and is presented systematically. Apart from that, students feel interested in using this textbook because it is designed to be full color and contains interesting pictures. Attractive images can attract students' attention and make it easier for students to understand the material (Ulfaeni, 2018; Damayanti, 2018).

Barus (2013) suggests that appropriate and effective textbooks can be used as learning resources. Teaching materials can help students understand learning material. The use of textbooks can

help improve student learning outcomes (Fajri & Taufiqurrahman, 2017; Ratih, 2022). In addition, textbooks are proven to be able to increase learning motivation and improve students' critical thinking skills (Lufthansa, et al. 2020).

CONCLUSION

From the results and discussion it can be concluded that the development of textbooks uses the ADDIE development model through the stages of analysis, design, development, implementation and evaluation. The validation results by material experts obtained an average score of 83.9% with good criteria. The validation test by media experts obtained an average score of 81.73% with good criteria. Results of trials conducted on students at the small group stage obtained 81.8% in the good category. The medium scale trial obtained 82.87% in the good category. The large group trial obtained 85.3% in the good category. The results of the study show that tutorial-based textbooks are appropriate for use in learning basic embroidery techniques courses.

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