

Development of a Basic Embroidery Technique Book Based on Storytelling for Fashion Design Education Students

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ABSTRACT

This study aims to develop a storytelling-based embroidery book for the basic embroidery techniques course to improve the creativity of fashion education students. The study uses the Research and Development (R&D) method with a 4D model that includes the define, design, develop, and disseminate stages. From the results of the validity test of material experts, media experts and student trials. The validity of the material experts obtained 83.9% and the media experts obtained 82.87% with very good criteria. The results of the small group trial obtained 82.2%, the medium scale trial obtained 85.3% and the large group trial obtained 87.3% with a very good category. The results of the study show that the storytelling-based embroidery book for the basic fashion embroidery techniques course is suitable for use in learning.



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INTRODUCTIONS

The development of fashion design education demands learning that is not only oriented toward mastering technical skills, but also the development of students' creativity, imagination, and visual thinking. In the Fashion Design Education Study Program, practical learning plays a crucial role in shaping student competencies and is oriented toward continuing courses. Basic embroidery techniques are one such ongoing learning area. One decorative technique frequently used in clothing decoration is embroidery. Basic embroidery techniques are fabric decoration techniques that utilize various basic techniques and are manifested in various types of embroidery to create specific aesthetic values in clothing and textile products (Gadi, et al, 2023). Embroidery techniques are one of the basic competencies that students must master because they are related to decorative skills, design creativity, and fashion product development (Yasnida, 2021)

In practical learning, basic hand embroidery is generally taught through separate stitch exercises, such as the stem stitch, chain stitch, basting stitch, festoon stitch, and other basic stitches. This technical learning tends to lead students to simply imitate examples without being able to develop creative ideas independently (Garuda et al., 2022). Embroidery learning, in general, is still oriented toward separate technical exercises without a structured theme or meaning within the embroidery work. Students are simply asked to follow the instructor's stitch and motif instructions without understanding the relationship between

embroidery techniques and the visual concept of the work. As a result, student work tends to be monotonous and lacks artistic identity.

Based on initial observations of Fashion Design students in the embroidery field, it was found that students experience difficulty in determining visual themes, developing concepts, composing embroidery, and selecting color combinations. The right color selection can communicate a specific mood, style, and design concept (Muhdlor, 2023). In line with this, color plays a crucial role because it can enhance visual quality and enhance the appearance (Listiani & Wulandari., 2023). Color not only provides visual beauty but can also communicate emotionally and symbolically, evoking certain feelings, creating moods, and influencing how a person expresses themselves, making color a key element in fashion aesthetics (Wesnina & Rahayu., 2025). Furthermore, the problem of connecting various embroidery techniques into a harmonious work is crucial. Student work also tends to be monotonous because embroidery is created solely as a technical exercise without a clear visual concept. This situation demonstrates the need for innovative learning media that can help students understand embroidery as a medium of visual and artistic expression.

One of the competencies in basic embroidery techniques includes colored embroidery. Colored embroidery itself is divided into several parts of embroidery (Salsebela & Marniati., 2021). In addition to colored embroidery, there are also other types of embroidery, such as single-color embroidery and various other types. Different student abilities and characteristics also lead to different problems, so a book that can generalize the problems and solutions they face is needed. The role of books in this regard is needed to facilitate effective student learning.

A viable approach to addressing these issues is storytelling. Storytelling is a learning approach that uses stories or narratives to build meaningful learning experiences (Robin, 2021). In the fields of art and design, storytelling can be realized through interconnected visuals, color, texture, and composition to create a specific atmosphere (Lee & Kim., 2023). The concept of storytelling in embroidery learning can be applied through the development of integrated visual themes. Students not only create one type of embroidery, but also integrate various types of embroidery adapted to basic embroidery techniques into a single visual story. This allows students to understand the visual function of each type and technique in building atmosphere and story.

Storytelling can also increase student involvement in practical learning because students are encouraged to develop ideas, explore colors, and create more expressive and artistic embroidery works (Yang & Wu., 2022). Storytelling helps students develop creative thinking skills, visual interpretation, and artistic communication through visual and narrative media (Mc Clean, 2020). Most research still focuses on mastering embroidery techniques without connecting visual and narrative elements in student work. Therefore, the development of a basic embroidery technique book based on storytelling is a relevant learning innovation to improve visual and aesthetic understanding of Fashion Design Education students. This study aims to: (1) Develop a Basic Embroidery Technique Book Based on Storytelling for Fashion Design Education Students; (2) Determine the Feasibility of a Basic Embroidery Technique Book Based on Storytelling for Fashion Design Education Students

RESEARCH METHOD

This study used the Research and Development (R&D) method, aiming to produce a learning product in the form of a storytelling-based book on basic embroidery techniques for embroidery subjects in the Fashion Design Education Study Program. The research and development method was chosen because the research focuses not only on theoretical analysis but also on producing a tangible product in the form of valid and practical learning media for use in the learning process (Sugiyono, 2022).

The product developed is a learning book that combines basic embroidery techniques with a storytelling approach, making learning more engaging, contextual, and easier for students to understand. The development model used is the 4D model with four research stages. The development process follows four main stages: Define, which focuses on determining objectives, materials, and instructional goals; Design, which emphasizes designing a prototype of the learning media; Development, which refines the prototype to a final version; and Disseminate, which is carried out after testing and expert assessments demonstrate feasibility.

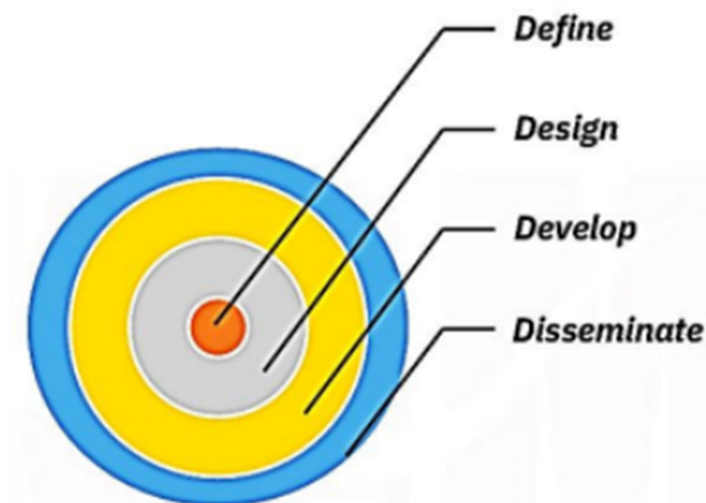


Figure 1: Thiagarajan's Four D Model
Source: Winaryati et al. (2021) [13].

The data collection techniques are methods for obtaining required data and meeting established data standards. Data analysis is the process of systematically interpreting and processing or organizing data obtained from interviews, questionnaires, and other sources, concluding with conclusions aimed at obtaining information (Rizal, et al., 2022). The answer choices used are on a Likert scale with a score of 1-5.

The percentage obtained from each respondent's answer is then calculated after obtaining the ideal score (criterion), using the following formula. (Sugiyono, 2021)

$$x = \frac{\text{Total score of all items}}{\text{Total ideal score (criterion)}} \times 100\%$$

Description:

x = empirical score

The percentage results obtained will be used as a reference to determine the level of assessment tendency which is arranged in the following table:

Table 1. Percentage results of product development tests

No.	Category	Percentage
1	Very Good	81 – 100%
2	Good	61 – 80%
3	Fair	41 – 60%
4	Poor	21 – 40%
5	Very Poor	0 – 20%

RESULT AND DISCUSSION

The research was conducted in the Fashion Design Education Study Program, specializing in basic embroidery techniques. This research was conducted in the 2024/2025 academic year, even semester, with second-semester students as participants. The research period lasted one semester, including:

Define Stage. The needs analysis stage. This step was conducted by the researcher using interviews and observations. The purpose of the initial-to-final analysis was to examine fundamental learning issues. This was due to several problems encountered during the learning process. The results of a questionnaire analysis of Fashion Design Education students indicated a high need, with an average percentage of 89%. The analysis also included an analysis of the lecturers' needs using 10 items. The results of the needs questionnaire analysis showed an average percentage of 90%. This figure indicates that lecturers strongly agree with and need the development of a storytelling-based Basic Embroidery Techniques textbook for Fashion Design Education students.

Design Stage. This is the product preparation stage through the compilation of various components. At this stage, visual displays, narratives, graphic materials, quizzes, and learning videos are designed. The design stage aims to design a learning product in the form of a Basic Embroidery Technique Book Based on Storytelling. Activities at this stage include: a) Preparation of the Book Structure consisting of: introduction; storytelling concept; types of embroidery; basic embroidery techniques; development of visual themes; learning projects; learning evaluation, b) Preparation of Storytelling Themes Visual themes are arranged based on the character of each type of embroidery so that learning is more interesting and contextual, c) Designing Media Displays Media is designed using: visual illustrations; photos of embroidery results; pastel colors; artistic layouts; and easy-to-read typography, d) Preparation of Research Instruments Research instruments include: material expert validation sheets; media expert validation sheets; student practicality questionnaires.



Figure 2: book cover



Figure 3: tools and materials



Figure 4: embroidery project

Product Feasibility Development Stage. The development stage was conducted by validating or testing the feasibility of the basic embroidery techniques book, which had been validated by material and media experts. Expert appraisal aimed to validate or assess the feasibility of the product design, then make revisions based on the expert input and suggestions to make the developed product more precise, efficient, and user-friendly.

The material experts were lecturers with expertise in decorative design, basic embroidery techniques, textiles, and fashion design instruction. The subjects of the material validity test were two material experts with expertise in fashion design. They assessed the feasibility of the content developed in the storytelling-based basic embroidery techniques book, based on the aspects of content feasibility, presentation, and language. The results obtained a score of 83.9%, which is considered "very good." These results indicate that the material in the storytelling-based basic embroidery techniques book was deemed feasible based on the feasibility of content, presentation, and language. However, based on the validator's input, several revisions were required to improve clarity and systematic content.

Media experts are lecturers who have competence in the development and assessment of educational media, who are media expert lecturers. Based on the validation results conducted by two media experts on the development of a storytelling-based basic embroidery technique book, an average percentage of 82.87% was obtained, which is included in the "very good" category. Thus, it can be concluded that the developed storytelling-based basic embroidery technique book has met the eligibility criteria for limited field trials.

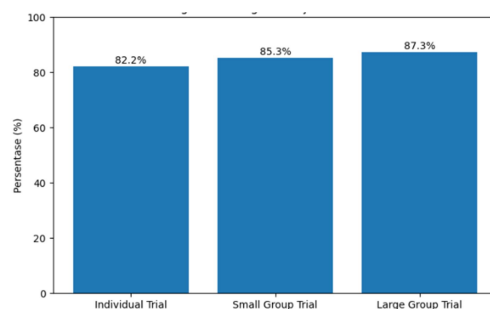
Product Development Testing. A limited trial of the development of a storytelling-based basic embroidery technique book was conducted. The trial consisted of three stages: a small group trial with three students, a medium group trial with six students, and a large group trial with 14 students. This division ensured a gradual and systematic product testing process, allowing researchers to revise and refine the product based on the results of each testing stage. The sampling technique used was simple random sampling with a lottery method. Each member of the population, namely students, was assigned a serial number from 1 to 23. These numbers were then placed in a container and drawn at random, regardless of the number drawn. The results of the lottery were used to determine the subjects for each stage of the product trial. Simple random sampling is a random sampling method that gives each member of the population an equal chance of being selected, ensuring that the resulting sample objectively represents the population.

Based on the data from the small group trial with three students, the average percentage score was 82.2%, categorized as "Very Good." From the results of the medium group trial conducted on six students, an average percentage of 85.3% was obtained, which is in the "very good" criteria. Based on the results of the large group trial involving 15 Fashion Design students, an average percentage of 87.3% was obtained with the "very good" criteria. Based on the overall research data, it was stated as "Very Suitable" to be used as media. Suitable learning media means that the media has met the predetermined criteria standards, so that the media can be used in the learning process or during independent learning. (Pputri & Ardi., 2021)

Table 2: Average results of product development tests

No.	Product Trial	Average Percentage	Criteria
1	Individual Trial	82.2%	Very Good
2	Small Group Trial	85.3%	Very Good
3	Large Group Trial	87.3%	Very Good

The average percentage results from the three stages of the trial development of the Basic



Fashion Design Elements e-module are presented in the following graphic diagram:

Figure 5: Diagram of feasibility test graph

Dissemination Stage: The final stage of dissemination involves the limited distribution of a book on basic embroidery techniques based on storytelling. The book is presented in the form of a link and barcode, accessible via a smartphone, laptop, or other internet-connected electronic device, either by scanning the barcode with a smartphone camera or Google Lens, or through a link in Google or a browser.

Based on the research and development conducted, it can be concluded that the book on basic embroidery techniques based on storytelling is suitable for use as a learning aid for fashion design students in embroidery courses. The book developed can help students understand basic embroidery techniques and types of embroidery in a more systematic, engaging, and accessible way through storytelling-based presentation of material, work steps, illustrations, and application examples tailored to the needs of Fashion Design students. The development of a storytelling-based book provides a more meaningful learning experience because students not only learn embroidery skills but also develop creativity, imagination, visual thinking skills, and the ability to translate ideas into embroidery

designs. The storytelling approach can create more contextual, communicative, and interactive learning, enabling students to be more actively engaged in understanding the learning material. This aligns with the opinion that storytelling can increase student engagement, creativity, collaboration, and understanding in the learning process.

The developed textbook also meets the appropriateness of content, presentation, language, and graphics. The material presented has been tailored to learning outcomes, learning indicators, and student characteristics. The coherent and systematic presentation of the material, the use of step-by-step illustrations, practical exercises, creative projects, and learning reflections make the textbook more interactive and support both independent and classroom learning. Storytelling-based learning can increase learning effectiveness because students experience a more enjoyable and understandable learning experience (Puspitasari, et al., 2024).

Furthermore, the book's visual appearance, which combines fashion illustrations, embroidery motifs, pastel colors, and a modern layout, can increase students' interest in embroidery learning. The use of engaging visuals can help students understand the practical material more easily and increase learning motivation. This is supported by research indicating that the use of storytelling-based learning media can improve students' skills, participation, and learning interest (Widiantari & Kristiantari., 2023). The developed book also helps students construct knowledge concepts independently through design exploration activities, story idea development, and creative embroidery projects. The student-centered learning process can enhance students' creative thinking, problem-solving, and visual communication skills. Storytelling-based learning can enhance critical reasoning, creativity, and the ability to express ideas more innovatively Fairideani, et al., 2024).

The results of this study indicate that the development of a storytelling-based basic embroidery technique book for fashion design students not only serves as a learning resource but also serves as an innovative learning medium that integrates practical skills, creativity, visual communication, and experiential learning. The developed book is expected to assist lecturers and students in creating a more effective, engaging, and relevant learning process to meet their learning needs. Therefore, the storytelling-based basic embroidery technique book for fashion design students can serve as an innovative learning medium that is appropriate, effective, creative, and in line with modern developments in fashion design education.

CONCLUSION

Based on the results and discussion of the research on the development of a storytelling-based book on basic embroidery techniques for fashion design students, it can be concluded that: 1. The product developed in this study is a storytelling-based book on basic embroidery techniques for fashion design students, which was developed using the Research and Development (R&D) method by applying the 4D development model. The first stage, define (definition), which involves collecting information from observations, interviews, and a needs analysis questionnaire for students (with an average percentage of 89%) and a needs questionnaire for teachers (with an average percentage of 90%). Thus, it can be concluded that this book is highly needed to assist students in the learning process. The second stage, the design stage, involves creating a storyboard for the book using the Canva application. The third stage is the development stage, which includes validating the content

and media, as well as conducting limited pilot testing. The final stage is dissemination, which involves distributing the book-based media. The results of the feasibility study for the storytelling-based basic embroidery textbook are as follows: content expert validity scored 83.9% and media expert validity scored 82.87%, both meeting the “very good” criteria. The small-group pilot test yielded 82.2%, the medium-scale pilot test yielded 85.3%, and the large-group pilot test yielded 87%.

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