

## IMPLEMENTATION OF *THE PROJECT BASED LEARNING METHOD* FOR DEVELOPING STUDENT COMPETENCIES THROUGH MAKING TRADITIONAL ACEHNESE UMBRELLAS

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### ABSTRACT

One of the learning methods that supports the OBE curriculum is the *Project Based Learning method*. This method requires students to work together to complete projects or assignments that are relevant to the learning material, namely making traditional Acehese umbrellas. The method used is included in Research and Development , aimed at producing products and testing the effectiveness of certain products. The development model used refers to the 4D development model. The research sample used to determine the responses of 100 students regarding traditional Acehese umbrella products. Furthermore, the results of research and development on making traditional Acehese umbrellas can be described as follows: (1) Fashion Experts, the overall assessment aspect obtained a percentage of 91.67%, which is in the very good or very decent category. The results of the fashion expert assessment show that the developed traditional Acehese umbrella product can train students' creative and motor skills in applying motifs, sewing kasab threads, and processing decorative knick-knacks. (2) Cultural experts, the overall assessment aspect obtained a percentage of 93.75%, which is in the very good or very decent category. (3) Respondents' assessment of the development of traditional Acehese umbrellas is  $(53.16:6,000) \times 100\% = 88.6$  of the expected (100%). Thus, the traditional umbrellas developed have received a positive response in terms of shape, color, motif, aesthetics, persuasiveness, and affordable price. Therefore, through the implementation of the *Project Based Learning Method*, it can increase students' creativity or innovation as *an outcome* in the Acehese Traditional Crafts Course .



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## 1. INTRODUCTION

Universities have a responsibility to produce human resources (HR) capable of collaboration, responsiveness, and adaptability to global challenges. To fulfill this

responsibility, universities are reconstructing their study program curricula in line with the advancements of the Industry 4.0 era toward a Society 5.0 era characterized by a productive and highly intellectual generation.

To address global challenges, curriculum development or adjustments can be carried out collaboratively, involving stakeholders from various sectors to ensure graduates are technically and professionally prepared, possessing global insight, social awareness, and an ethical commitment to sustainable development (Belmawa, 2024). Graduate readiness in the DUDI (industrial and industrial) sector is influenced by the university's curriculum structure, such as the implementation of the OBE curriculum, which is the initial step in preparing graduate competencies. The OBE curriculum emphasizes the achievement of concrete and measurable outcomes as the primary focus of learning. Learning designs that focus on *outcomes* must, of course, be designed to address the learning experiences students must achieve.

One of the learning methods that supports the OBE curriculum is the *Project Based Learning method*. This method requires students to work collaboratively to complete projects or assignments relevant to the learning material, allowing them to apply their knowledge in real-life contexts. Project-based learning is a learning method that explores real-life problems within a project as a first step and integrates new knowledge based on their experiences in real-life activities (Belmawadikti KPT Team, 2024).

To respond to this, Semester V Students of the Acehese Language Education Study Program took the opportunity to implement the *Project Based Learning method*. Before creating activities in the form of projects, students first explore real problems in a project as a first step and integrate new knowledge based on their experiences in real activities. The project completed by students is the creation of a traditional Acehese umbrella with gold embroidery decoration, which is carried out through the following stages: (1) Students start several questions on complex problems at a high-level thinking level; (2) The design of the project model is carried out collaboratively and accompanied by the supervising lecturer; (3) Students make a project implementation schedule and consult with the supervising lecturer; (4) In groups, students make presentations to find out the progress of project achievements; (5) Lecturers and students assess the process and achievement of competency standards along with their *outcomes*, then the lecturer provides feedback to students; (6) Lecturers and students reflect both collaboratively and independently, so that new things are discovered in completing the project.

Likewise, the *Project Based Learning Method* is a student-centered method so that Graduate Learning Outcomes (CPL) are achieved through a learning process that prioritizes the development of creativity. The development of creativity is one of the important competencies for students, because creativity can help them in solving problems, developing new ideas and innovative work. Thus, it can increase the ability to produce graduates who are ready to win the challenges of life in the 21st century. This century demands student competencies that are able to meet the desires of the job market, and by the time students graduate, they have provisions and are ready to enter the world of work. In accordance with the opinion (Wibowo, 2017) Competence is a fundamental characteristic of each individual that is linked to superior or effective criteria in a job or situation. Supported by the opinion

(Mangkunegara, 2017) Competence is a person's ability that distinguishes them from others and makes them have average abilities in carrying out work. The competence referred to here is the creativity or innovation of students in producing *outcomes* in the traditional Acehese crafts course.

Based on preliminary information, the learning process in the Acehese traditional crafts course tends to focus on explanations and examples of products developed by artisans, while the results of student products have not been implemented. Due to limited student knowledge of local culture, a lack of supporting facilities and the ineffective implementation of collaboration with traditional artisans, students have not been able to create products that are in accordance with the course characteristics of the study program. In fact, the Acehese traditional crafts course is one of the study program's characteristic courses in supporting local wisdom that is starting to be eroded by modernization. Local wisdom in question is the cultural values contained in Acehese society to be preserved, such as traditional Acehese umbrellas with gold embroidery motifs. By introducing local wisdom in community life, cultural values will not be replaced even though global developments continue to develop (Ubaidillah et. al, 2025).

Likewise, the making of traditional Acehese umbrellas with gold embroidery decorations is one form of local Acehese culture that has very high aesthetic and philosophical value, not only functioning as a usable object but also containing artistic value and identity of the Acehese people. One of the arts inherent in the Acehese people is the craft of gold thread embroidery or kasab embroidery on Acehese umbrellas and food covers (Hermaliza et. al., 2013) . Therefore, the use of *the Project Based Learning method* in learning to make traditional Acehese umbrellas with gold embroidery decorations is one of the right solutions. In making the product, students not only learn the concept and techniques of making but also begin to understand the value of local culture. In making traditional Acehese umbrellas, of course, it takes a long time, because it starts from the stage of painting patterns with the desired motifs to embroidering gold or silver threads on the patterns that have been painted (Puspita et al, 2016).

Furthermore, the implementation of the *Project-Based Learning method* in making traditional Acehese umbrellas with gold thread embroidery not only improves student competency but also stimulates family finances and contributes to the preservation of local culture. Developing a gold or silver thread embroidery business on traditional Acehese umbrellas can improve the economic well-being of the community (Fitriana et al., 2021).

## **2. RESEARCH METHODOLOGY**

The method used is Research and Development , which is a research method for producing products and testing their effectiveness (Sugiono, 2019). The development model used refers to the 4D model, as seen in Figure 1.

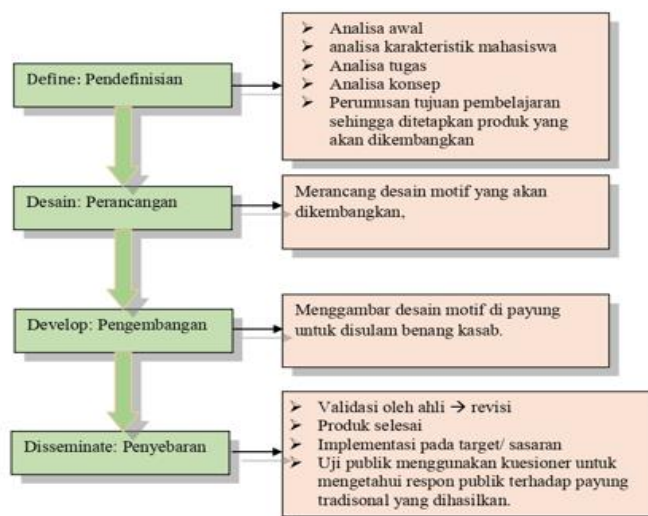


Figure 1 Modification of the 4D Development Model

The population in this study were all students of the Faculty of Teacher Training and Education of the National Islamic University of Indonesia and the general public. Meanwhile, the research sample was 100 people consisting of: 50 students of the Performing Arts Education Study Program, 30 students of the Acehese Language Education Study Program who were not involved in product development, namely semesters I and III, as many as 30 people, and 20 members of the general public.

Data collection was carried out through validation by a team of experts to determine the feasibility of the product, then a questionnaire was distributed to the research sample to provide feedback on the product being developed.

Analysis technique uses descriptive statistics which aims to determine the feasibility of the product being developed. According to Sugiyono (2019) , "descriptive statistics are used to analyze data by describing or depicting the collected data as it is without the intention of drawing general conclusions or generalizations."

The questionnaire used in this study uses a measurement scale, namely the *Likert scale* . The *Likert scale* is used to obtain respondents' responses to the product being developed. After the data is collected, the data is analyzed with descriptive statistics used to analyze the data obtained in percentage form, namely by obtaining criterion scores using a self-generated Likert scale. The formula used for the final product trial is:

1) Likert Scale

*Likert scale* is used to obtain information about respondents' responses using the formula:

$$DP = \frac{\sum (\text{keseluruhan skor jawaban angket})}{N \times n \times \text{bobot tertinggi}} \times 100\%$$

Information:

DP = Descriptive percentage

N = number of respondents

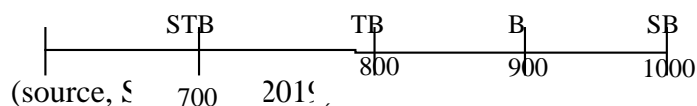
n = total number of questionnaire items

The questionnaire answers were scored in the form of a rating scale as follows:

SB = Very Good	scored = 4
B = Good	scored = 3
TB = Not Good	scored = 2
STB = Very Bad	given a score = 1

(source, Sugiyono:2019)

The total score from the data collected from the questionnaire is then determined according to a criterion. This can be described as follows:



### 3. RESULTS AND DISCUSSION

This research is a research and development method *with* a 4D model, namely (1) *Define* (2) *Design* (3) *Develop* (development), and (4) *Disseminate* (dissemination).

#### 1. Define Stage

At this stage, an initial analysis is conducted to determine and explain needs and gather information related to the things that will be developed in the product to be made. To develop a suitable traditional Acehese umbrella, it is necessary to analyze the students' needs regarding knowledge of the design, motifs, and functions of umbrellas in the context of Acehese culture. According to Sadirman (2009), by understanding the needs of students, what we will develop can be used or utilized well because it is truly needed. In addition, the development of traditional Acehese umbrellas is carried out to facilitate students in learning and preserving umbrella-making techniques. Furthermore, the results of the needs analysis were carried out by observing the collections in Acehese museums and cultural centers, obtained information that learning resources on the development of traditional Acehese umbrellas are still very limited.

#### 2. Design Stage

This stage is known as creating a design. The plans carried out include:

- a. Determine the motif and make a sketch.

The traditional Acehese motifs to be used as the basis for the design were determined by examining a variety of distinctive Acehese motifs, including their origins, philosophical meanings, and cultural values. This process also considered the motif's suitability to the character of the product being developed, its aesthetic function, and its

potential application, ensuring it continues to reflect Acehese cultural identity while remaining relevant to contemporary needs and tastes.

- b. Determine the position of the motif on the umbrella so that it is symmetrical and aesthetic.

Marking the placement of the motif on the umbrella involves determining the precise and proportional placement of the motif. This step ensures the motif is neatly arranged, balanced, and symmetrical, reflecting the shape of the umbrella, creating a harmonious appearance and facilitating the application process in subsequent stages of the process.

- c. Selection of kasab thread, and additional knick-knacks for decoration

The selection of kasab thread and additional decorative embellishments is carried out by considering the quality, color, and thickness of the kasab thread to match the umbrella's motif and design. Furthermore, embellishments such as beads, sequins, or other small accessories are selected according to the umbrella's aesthetics and function, resulting in an attractive, balanced appearance that maximally highlights Acehese cultural values. This process aims to ensure that the materials and embellishments used support the beauty, durability, and elegance of the final product.

### 3. Development Stage

- a. Copy the motif on the umbrella according to the design that has been made.

Copying a motif onto an umbrella involves carefully and precisely transferring the chosen pattern to the umbrella's surface. This process ensures the shape, size, and details match the initial design, facilitating subsequent work stages and producing a neat, consistent pattern that aligns with the intended concept.



Figure 2. Copying the motif on the umbrella

b. Sewing gauze thread

Sewing kasab thread is done by applying kasab thread to a motif that has been printed on the surface of the umbrella following the motif pattern to highlight details and aesthetic value. This stage aims to strengthen the motif details, highlight the aesthetic value, and give a luxurious and distinctive impression to traditional Acehnese umbrellas, while maintaining the quality and durability of the stitching.



Figure 3. Sewing kasab thread on the printed motif

c. Sewing knick -knacks

Embellishment is done by adding additional decorations such as beads, sequins, or other small accessories to the umbrella according to a predetermined design. This process aims to enhance the aesthetic appearance, provide artistic value, and highlight the uniqueness and beauty of traditional Acehnese umbrellas in a more attractive and detailed manner.



Figure 4. Sewing decorative ornaments on the umbrella

#### d. Settlement

Thread tidying involves trimming excess thread, arranging the ends of the stitches, and ensuring all stitches appear neat and tidy on the umbrella's surface. This step aims to improve the final appearance, maintain aesthetic appeal, and ensure the motifs and embellishments on the umbrella look clean, professional, and neat.



Figure 5. Results of the development of traditional Acehnese umbrellas

#### 4. Dissemination Stage (Disseminate)

This stage is carried out once the product development process is complete and ready for validation by fashion/cultural experts. If the product is found to be less than ideal during expert testing, the testing will be repeated to ensure the results meet expectations. After revisions, a public test will be conducted by distributing questionnaires to the target audience.

#### Description of Research and Development Results

The research and development data on the development of traditional Acehnese umbrellas were obtained from the validation results of fashion/cultural experts and responses from respondents were obtained from the results of filling out the instrument in the form of a research questionnaire via *the Google Forms link*.

##### 1. Fashion and Culture Expert Validation Data

Validation data from two experts, a fashion expert and a cultural expert, was conducted to determine the feasibility of developing traditional Acehnese umbrellas. The instrument administered to the fashion/cultural experts consisted of 12 questions. The experts' assessment of the development of traditional Acehnese umbrellas can be seen in Table 1, while their suggestions and input can be seen in Table 2.

Table 1. Fashion/Culture Expert Assessment Scores for the Development of Traditional Acehnese Umbrellas

Question Number	Fashion Expert Score	Cultural Expert Score
1	3	4
2	3	4
3	4	4
4	4	4
5	4	4
6	4	4
7	4	4
8	3	3
9	3	4
10	4	3
11	4	3
12	4	4
Total Score	44	45
Max score	1 x 12 x 4 = 48	1 x 12 x 4 = 48
Percentage	44/48 x 100% = 91.67%	45/48 x 100% = 93.75%

Based on the results of the calculation of the fashion/cultural expert scores in table 1 above, (1) a percentage of 91.67% was obtained from the assessment by fashion experts and was categorized as very good which was in the percentage range of 86-100%, and (2) a percentage of 93.75% was obtained from the assessment of cultural experts and was categorized as very good which was in the percentage range of 86-100%. Thus, the development of traditional Acehnese umbrellas does not need revision.

Table 2. Input and Suggestions from Fashion Experts

Fashion Expert	Suggestions for the Development of Traditional Acehnese Umbrellas
Fashion Expert	Try to make the motif part a little thicker, so that the motif can be seen more clearly from a distance.
Cultural Expert	When making Acehnese umbrellas, it is recommended to pay attention to the neatness of the details and the selection of quality materials so that they have high aesthetic value and appear more luxurious.

2. Questionnaire response data by respondents

Based on the results of field trials on students and the Acehese community. Thus the criterion score (if each item gets the highest score) is  $4 \times 15 \times 100 = 6,000$ . For this, the highest score for each item = 4, the number of questions = 15 and the number of respondents = 100, while the total criterion score (if the number of scores is the lowest) is  $1 \times 15 \times 100 = 150$ . The total score of student responses = 53.16 , so the percentage of respondents' score results is 88.6%. See table 3 below.

Table 3. Results of Questionnaire Responses by Respondents

No	Assessment Aspects	Indicator	Average Score
			(n = 100)
1	Form	1. The shape of the kasab thread decoration matches the overall shape of the umbrella.	3.47
		2. The shape of the sequins does not interfere with the traditional impression of the Acehese umbrella.	3.31
		3. The shape of the umbrella is easily recognizable as a traditional Acehese umbrella.	3.67
		4. The decorative shapes (gauze thread or sequins) look harmonious with the circle and umbrella pole.	3.62
2	Colors and Patterns	5. The decorative motif (stitched thread or sequins) matches the umbrella as a whole.	3.42
		6. The combination of colors and motifs makes the umbrella look harmonious.	3.65
		7. The colors and motifs of the umbrellas reflect the characteristics of Acehese culture.	3.66
		8. The decorative motif of the umbrella looks appropriate to the shape and size of the umbrella.	3.55
		9. The umbrella motif gives a distinctive impression of Acehese culture.	3.61
3	Aesthetics	10. The shape, decoration, and details of the umbrella look balanced and pleasing to the eye.	3.42
		11. The umbrella looks aesthetic, while still maintaining the traditional characteristics of Aceh.	3.64
		12. The combination of gauze thread and sequins makes the umbrella look elegant without being excessive.	3.60
4	Persuasive	13. The design of the umbrella makes me want to recommend it to others.	3.50
		14. The design and decoration of the umbrellas made me want to know more about Acehese culture.	3.64

5	Price	15. Regarding the product above, how would you respond if we offered this traditional Acehese umbrella for around Rp250,000-Rp350,000?	3.40
<b>Amount</b>			53.16
<b>Percentage</b>			88.6
<b>Category</b>			Very good

Next, the calculation results are described using an interval category table to indicate the position of the results with a bold line. To emphasize the results, the calculation scale is also carried out using a percentage (%) .

$$DP = \frac{\sum (keseluruhan\ skor\ jawaban\ angket)}{N \times n \times bobot\ tertinggi} \times 100\%$$

Information:

DP = Descriptive percentage

N = number of respondents

n = total number of questionnaire items

$$DP = \frac{\Sigma 5.316}{100 \times 15 \times 4} \times 100\% = 88,6\% . \text{ So the percentage gain (\% ) = 88.6\%}$$

Table 4. Quality Criteria

<b>Percentage (%)</b>	<b>Quality</b>	<b>Information</b>
86 - 100	Very good	No revision needed
66 – 85	Good	No revision needed
56 – 65	pretty good	Revision
41 – 55	not good	Revision
0 – 40	Not good	Revision

Source: BSNP (Ministry of National Education) 2007.

## Discussion of Research Results

The development stages of the traditional Acehese umbrella are based on the 4D development process. The author designed the product in consultation with lecturers teaching Entrepreneurship courses and advice from fashion and cultural experts.

### a. Expert Test

Expert testing was conducted to determine the validity of a product, categorizing it as "very good," or "very feasible." Expert testing was conducted with fashion and cultural experts. A large-scale pilot test was also conducted to determine respondents' responses to the developed product. The following is input from the experts.

### 1. Fashion Expert

Based on the results of the fashion expert test, the overall assessment aspect obtained a percentage of 91.67%, which is in the very good or very decent category. The results of the fashion expert assessment indicate that the developed traditional Acehese umbrella product can train students' creative and motor skills in applying motifs, sewing kasab threads, and processing decorative knick-knacks. However, there are still suggestions from fashion experts that still receive attention as material for improving the development of traditional Acehese umbrellas, namely to try to sew the kasab threads slightly thicker on the edges of the motif, so that the motif can be seen more clearly from a distance.

### 2. Cultural expert

Based on the results of the cultural expert test, the overall assessment aspect obtained a percentage of 93.75%, which is in the very good or very appropriate category. The results of the cultural expert assessment indicate that the developed traditional Acehese umbrella product can increase students' understanding and concern for the preservation of local culture, especially traditional Acehese arts and crafts through traditional product innovations that are relevant to current developments. However, there are still suggestions from cultural experts, namely that the development of traditional Acehese umbrellas should pay more attention to the neatness of details and the selection of quality materials to achieve high aesthetic value and a more luxurious impression.

### 3. Results of questionnaire responses from respondents

To provide meaning in decision making, accuracy is used as in table 4 of the quality criteria, with the achievement level being in the range of 86-100% at very good quality, meaning it is very worthy of being developed. The questionnaire score obtained indicates that respondents approve of the product. Based on the data obtained, the respondents' assessment of the development of the traditional Acehese umbrella is  $(53.16: 6,000) \times 100\% = 88.6$  of the expected (100%). Thus, the developed traditional umbrella has received a positive response in terms of shape, color, motif, aesthetics, persuasiveness, and price.

## 4. CONCLUSIONS

The development of the traditional Acehese umbrella refers to the 4D model and has gone through a validation process by fashion experts, cultural experts, and respondent tests. The results of the fashion expert test obtained a percentage of 91.67% and the cultural expert test 93.75%, both of which are in the very good or very feasible category. This product is considered capable of improving students' creative and motor skills while fostering awareness of local cultural preservation, although improvements are still needed in the neatness of details, the thickness of the kasab thread, and the quality of the material. The results of the respondent questionnaire showed a feasibility percentage of 88.6% with a very good category, which indicates a positive response to aspects of shape, color, motif, aesthetics, persuasiveness, and price. Thus, the developed traditional Acehese umbrella is

declared very feasible to be further developed as an innovative product based on local culture and a medium for learning entrepreneurship.

### **Acknowledgements**

It is hoped that this research can broaden the insights of researchers and students in the development of traditional Acehese umbrellas, as well as become a consideration for lecturers in implementing practice-based and technology-based learning in courses related to crafts, culture, and entrepreneurship.

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