

## **Preliminary Research Development of Student Research-Based Learning Model (S-RBL) On Embroidery Learning**

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### **Abstract**

This study aims to describe the results of the preliminary research of the Student Research-Based Learning Model on Embroidery learning. This research is a development research that begins with a needs analysis of the Student Research-Based Learning model in Embroidery learning. The subjects of this research are lecturers who teach courses, 25 students of Fashion Design who take Embroidery courses and the Embroidery learning curriculum. The results of the study consist of 4 results of preliminary research analysis of the S-RBL model on Embroidery learning in terms of literature analysis, analysis of interviews with lecturers, analysis of student questionnaires and curriculum analysis. Literature study shows that the S-RBL model needs to be adapted to the needs of the Embroidery course. The RBL model generally ends with scientific publications or research reports, but the purpose of research on embroidery learning is to inspire students to create creative products, thus modifications are needed to the syntax of the existing RBL model so that the S-RBL model is produced. The results of interviews with lecturers provide information about the implementation of learning, student characteristics, graduate profiles, use of facilities, the role of lecturers and facilities for the S-RBL model to be developed. The results of the questionnaire distributed to students produced information related to Embroidery learning strategies, Embroidery learning tools, lecturer reactions desired by students, learning interests, a conducive learning environment for students and evaluation formats expected by students. Finally, the results of the curriculum analysis show that there are a number of aspects that need to be revised related to the Semester Lesson Plans and Lecture Program Units that need to be adapted to the S-RBL model design and the characteristics of Embroidery learning.

**Keywords:** Model Student Research Based Learning, Embroidery Subject, preliminary research

### **Introduction**

Rapid changes in the world of work as a result of globalization and revolution in the field of information technology and science have demanded anticipation and evaluation of the competencies required by the world of work. This evaluation is important so that the world of higher education is

not separated and distant from the real world of work that exists in society. (Handayani, 2015). The results of research by McKinsey, UNESCO, and the ILO (2008) found that there is a gap between the education system and the world of work in Indonesia, namely that the graduates produced by universities are not in accordance with the needs of job users.

Responding to this, Whattananarong (2011) suggests that the education sector needs to be continuously updated by making innovations so that it is able to solve educational problems effectively. Universities need to create innovations in learning that lead to the resulting output. In general, educational innovations are divided into six groups; 1) educational media and technology, 2) instructional/pedagogical techniques, 3) curriculum, 4) education system, 5) evaluation, and 6) administration and management (Sintapanon, 2009; Sittisomboon 2014; Sutthirat, 2016).

On the other hand, Ananiadou & Claro (2009), Hussin (2018) and Pheeraphan (2013) assert that the benchmark of superior and quality graduates needed by the world of work is reflected in their competencies which include competence in problem solving, critical thinking, creative, communication skills, collaboration and digital literacy. To achieve these excellent graduates, the roles and responsibilities of educators play an important role so as to create an active, conducive and effective learning environment for the development of students. There are many ways that can be done to answer the challenges of learning in the 4.0 era and the demands of the graduates above, including by making various innovations to the learning being carried out. One of them is to choose and apply the right learning model in accordance with the objectives and characteristics of learning.

Embroidery is one of the compulsory subjects for students of Fashion Design, Department of Family Welfare, Faculty of Tourism and Hospitality, Universitas Negeri Padang, which adopts the local culture of West Sumatra. Most of the competencies learned in Embroidery learning are available in the student environment. This makes it possible for students to be able to learn from the research they do in the surrounding environment. Students' motivation and learning outcomes in learning tend to be low because students who do not have motivation tend to get low learning outcomes. The desire to be able to master the competence needs to have real examples that are observed in addition to demonstrations by lecturers in class.

This study aims to describe the preliminary research model of Student Research Based Learning (S-RBL) in Embroidery learning to increase the creativity of students in Fashion Design, Department of IKK FPP UNP.

### **Methodology**

The type of this research is research and development, which is one of the research models to develop interventions as a solution to research problems. A series of existing approaches in development research are intended to generate and explain potentially new views/theories in the educational environment (Akker 2006; Barab and Squire, 2004).

The development model in this study is the Plomp development model which consists of the Preliminary research phase (preliminary research), Design and develop prototype (prototype design and development) and Evaluation (Plomp and Nieveen, 2013). This paper only describes Preliminary research which consists of literature study, needs and context analysis and curriculum analysis. Data was collected using interview guide instruments, student questionnaires, and field notes. The type of

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data in the form of qualitative data is obtained from the results of interviews, questionnaires and observations in preliminary research activities. The data were analyzed with the stages of data display, data reduction and drawing conclusions.

### Participant

The participants in the study were students of the Fashion Design Education Study Program at the Hospitality Tourism Faculty, Padang State University.

### Data Collection Instruments

The data collection techniques used in this exploration stage are:

#### 1) Observation

Observation was made to find out facts in the field regarding embroidery learning in the Fashion Design Study Program, Faculty of Tourism and Hospitality, Universitas Negeri Padang.

#### 2) Interview

Interview was conducted to find out the learning of embroidered which was asked directly to the lecturer in charge of the course. Interviews were conducted using a pre-designed interview format.

#### 3) Documentation

The documentation used at this stage is all forms of written and unwritten documentation that can complement other data. The data collection instruments used are archives and documentaries at the research site.

#### 4) Questionnaire

At this stage, a questionnaire was used to collect quantitative data, so that it can determine the need for the implementation of embroidery learning in the Fashion Design Study Program, Faculty of Tourism and Hospitality, Universitas Negeri Padang.

### Findings

#### 1. Literature Study Results

From the results of the literature analysis, it was found that several things needed to be modified in the syntax of the RBL model to suit the objectives and characteristics of Embroidery learning so as to increase student creativity in learning. The results of the literature review/analysis related to the syntax of the RBL model are summarized in Table 1.

**Tabel 1.**RBL Model Syntax Review Results Reference

Reference	Syntax findings that need to be adapted to Embroidery learning
Tremp (2010)	<ul style="list-style-type: none"><li>• RBL syntax focuses only on research activities, but does not describe the integration of research results with the development of students' skills</li><li>• There is no stage of practice</li></ul>

	<ul style="list-style-type: none"> <li>• Not supported by the use of technology</li> <li>• There is no evaluation stage for RBL syntax yet</li> </ul>
Ahdika, (2017)	<ul style="list-style-type: none"> <li>• The RBL syntax focuses on research activities that lead to the publication of scientific papers and does not describe research activities aimed at developing students' skills and creativity.</li> <li>• There is no practice stage</li> <li>• Not supported by the use of technology</li> <li>• There is no evaluation stage for RBL syntax yet</li> </ul>
Dafik (2015)	<ul style="list-style-type: none"> <li>• The RBL syntax focuses on research activities that lead to the percentage of research results and does not describe research activities aimed at developing students' skills and creativity.</li> <li>• There is no practice stage</li> <li>• Not supported by the use of technology</li> <li>• There is no evaluation stage for RBL syntax yet</li> </ul>
Usmeldi, et al (2017)	<ul style="list-style-type: none"> <li>• There is no formulation of learning objectives</li> <li>• The RBL syntax on problem identification is related to science, environment, technology and society and leads to the percentage of research results and does not describe research activities aimed at developing students' skills and creativity.</li> <li>• There is no practice stage</li> <li>• Not supported by the use of technology</li> <li>• There is no evaluation stage for RBL syntax yet</li> </ul>
Khuana, et al (2017)	<ul style="list-style-type: none"> <li>• There is no formulation of learning objectives</li> <li>• The RBL syntax consists of 6 research phases with an emphasis on Integrating Research, Understanding Role Research, Generic Research Processes and Skills, Fostering Environmental Research, Inquiry-Based Activity Research, and Pedagogic and Linking Research scales. The estuary of research results does not describe research activities aimed at developing students' skills and creativity</li> <li>• There is no practice stage</li> <li>• Not supported by the use of technology</li> <li>• There is no evaluation stage for RBL syntax yet</li> </ul>

Based on Table 1, it can be explained that there is no syntax in RBL that describes research activities that aimed at developing students' skills and creativity. For this reason, it is important to add the integration of research results as a source of ideas in creating research-based creative products. The research results are assumed to help students in opening up horizons so as to generate creative ideas and create creative products. There is no training/practice stage yet. Drill and Practice is important in Embroidery learning to equip students with embroidery skills.

The evaluation phase of the RBL model is not described in the syntax stage. For this reason, it is important to add an evaluation because the RBL model, especially the S-RBL model in Embroidery learning, is to evaluate research results and research-based creative products made by students as a

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reflection of student creativity in learning. From this analysis, the syntax of the S-RBL model in Embroidery learning is described in table 2 below:

Tabel 2. The S-RBL Model Syntax in Embroidery Learning.

Student Research-Based Learning Model in Embroidery learning	
<b>Display concept</b>	
-	Formulating general learning objectives,
-	Integrating research materials into learning materials)
<b>Drill and Practice</b>	
-	The lecturer demonstrates the skills to be trained
-	Students practice the skills being trained (embroidery techniques)
<b>Student Research</b>	
-	Formulating research questions (Defining the question)
-	Planning research activities (Planning research activities)
-	Determining research methods (clarifying methods/ methodologies
-	Conduct research and analyze the data that has been collected (Undertaking investigation, analyzing data)
-	Interpreting research results (Interpretation and consideration of results) and reporting research results (Report and presentation of results)
<b>Presenting and discussion</b>	
-	Presenting research results
-	Discussing research results
<b>Create of creative product</b>	
-	Planning the manufacture of creative products (clothing or RT linen) based on research
-	Make creative products
-	Presenting creative products
<b>Evaluation</b>	

2. Results of needs and context analysis

The data in the analysis and context activities come from 3 sources, namely; (1) data from interviews with lecturers, (2) data from student needs questionnaires, and (3) data from curriculum analysis.

**a. Results of interviews with Embroidery Lecturers**

The results of the interviews provide information about important things that must be added to the basic idea of developing the RBL model in Embroidery learning so that it is relevant to the needs and learning objectives. Summary of interview results can be presented in Table 3.

**Tabel3.**Lecturers Interview Results

No	Aspect	Interview Results
1. 1	Implementation of learning	It takes a learning model that activates students who can develop student creativity through real experience in the field which is integrated with theory in the classroom, and proven through practicum in making research-based products..

2.	2	Characteristics of students in the Embroidery course	It takes a learning model that is able to facilitate students who have heterogeneous characteristics. Because students come from different educational backgrounds, namely SMK and SMU/MA. Students' initial abilities also vary, some are high, moderate and tend to be low.
3.	3	Graduate profile	It takes a learning model that is oriented towards understanding theory, developing skills and student creativity
4.	4	Use of facilities	Facility support and availability of adequate embroidery machine facilities and Wilcom software for computer embroidery
5.	5	Lecturer's role	It takes a learning model that accommodates the role of lecturers in learning as mentors, motivators, consultants.
6.	6	Suggestions	At the beginning, it is necessary to convey the objectives to be achieved from learning It takes a learning model that integrates the results of lecturer research and student research results for learning A student centered learning model is needed Students need to be equipped with basic knowledge and skills before conducting research into the embroidery industry (Drill and Practice) There needs to be guidance while students are doing research through communication media There needs to be an actualization of student creativity through research-based products There needs to be a presentation and evaluation of the products produced at the end of the lecture

From Table 3, it can be concluded that from the results of interviews with lecturers in Embroidery courses, the RBL learning model for Embroidery learning developed should: (1) At the beginning of the lecture it is necessary to convey general goals and concepts in Embroidery, (2) facilitate the diverse character of students, (3) optimal facility support is needed, (4) placing lecturers as mentors, motivators and consultants, (5) students are equipped with concepts and skills before going into research in the field, (6) research results are expected to be a source of inspiration for students in developing embroidery products, (7) student communication liaison technology is needed during research such as whatsapp media, and (8) an evaluation system using tests and presentations of practice results. The results of this interview become the basis for developing a model that includes model characteristics, support systems, reaction principles, social systems, RBL model evaluation systems in Embroidery learning.

#### **b. Students needs questionnaire results**

Questionnaire of student needs and characteristics distributed to 25 students of 5th semester students taking Embroidery Engineering courses. The summary of the questionnaire responses to student needs for the RBL learning model in Embroidery learning is presented in Table 4.

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No.	Indicator	Respons	Follow-up
1	Embroidery Learning	<ul style="list-style-type: none"> <li>- There needs to be a tutorial in practice</li> <li>- There needs to be a real example</li> <li>- Lecturers are expected to demonstrate the skills trained in face-to-face activities</li> <li>- Materials adopt competencies that are in line with the development of the industrial world</li> <li>- There is a need for visits to the calcical industry or small groups</li> <li>- Need to integrate the research results of lecturers and students in learning materials</li> <li>- Need communication media outside of face-to-face activities</li> </ul>	Become a reference in the preparation of model syntax and model support systems
2	Embroidery learning tools	<ul style="list-style-type: none"> <li>- Need a module with specifications (using the most data, namely:</li> <li>- Times News Roman font 12 pt, Quarto Size paper, with tutorials and color pictures</li> <li>- Need a student manual</li> </ul>	Become a reference for the model support system, especially in the preparation of learning modules
3	The lecturer's reaction that students want	<ul style="list-style-type: none"> <li>- Be a motivator in learning</li> <li>- Become a mentor in practice</li> <li>- Become a facilitator in discussions</li> <li>- Become a consultant in making embroidery products</li> </ul>	Be a reference to the principle of reaction
4	Interested learning	<ul style="list-style-type: none"> <li>- Group to conduct field studies</li> <li>- Individually learn to make embroidery products</li> </ul>	Become the basis for formulating the steps in the syntax and activities in each syntax
5	A conducive learning environment for students	<ul style="list-style-type: none"> <li>- Helpful learning environment</li> <li>- A learning environment where there is more interaction (active)</li> <li>- A social environment that is able to help the learning process.</li> </ul>	Become a model social system reference
6	Evaluation expected by students	<ul style="list-style-type: none"> <li>- Written test</li> <li>- Authentic Assessment</li> </ul>	Become a reference in compiling evaluation syntax

Student responses at this stage became the basis for researchers in formulating and designing the S-RBL Model in Embroidery learning.

### c. Curriculum Analysis

The summary of the results of the curriculum analysis on the RPS is presented in Table 5.

Assessment Aspect	Results of Observation and Analysis of RPS	Follow-up
Format conformity with Permenristekdikti No. 22 2015,	The agency identity already exists and is complete	Stay and be a reference
	A brief description of the course already exists	Stay and be a reference
	The important points of the course material have been described	Stay and be a reference
	Reference sources already exist and are relevant to the material but not up-to-date	Can be an additional reference
	Main references and supporting references are not separated in the details	Changes made
The achievements of Study Program graduates are described in terms of the attainment of attitudes, knowledge, general skills and special skills	Not available	Added
Course Outcomes are described in competency standards	It already exists but is not yet relevant to Permenristekdikti No. 22 2015 and RI Prepres No. 8 2012.	Development carried out
Sub Course Outcomes are formulated in the description of learning outcomes	Already exists but has not been integrated with research results	Development carried out
Learning experience	Details already exist, but not yet relevant for developing student creativity kreativitas	Development carried out
Student creativity assessment	Details of the criteria and forms of assessment already exist and are relevant to learning indicators, but are less relevant to measuring student creativity indicators	Development carried out
Supporting learning	Not detailed yet	Added



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Assessment Aspect	Results of Observation and Analysis of RPS	Follow-up
media		
Evaluation tool	Not described in detail	Added
Learning Methods/ Strategies	Does not describe research activities by students in learning	Added

The formulation of learning outcomes, course outcomes and sub course outcomes in the syllabus/RPS design needs to be revised because it has not led to the achievement of KKNI level 6 and the development of student competence and creativity. The results of this analysis become a reference in the development of the syllabus / Semester Learning Plan on the research-based Embroidery learning model.

### Discussion and Conclusion

One of the learning models that is able to accommodate the link and match between the industrial world and the world of education that can be applied to Embroidery learning is the Research Based Learning (RBL) model. RBL refers to learning that links research with teaching. (Sota & Karl, 2017). This means that students can conduct research into the industrial world so that industrial progress is absorbed and can be compared with learning in class. Real experience in observing, seeing real examples in the industry will enrich the student learning experience in addition to the demonstration method in class. The RBL method on Embroidery learning needs to be analyzed for its impact, especially in increasing student motivation and learning outcomes.

The criteria for success in Fashion Design education must be seen from the success at school (in-school success) and success outside school (out-of-school success). In order for the success of these two aspects to be achieved, coaching in learning is very important to pay attention to the various aspects involved, teachers, students, infrastructure, and other supporting aspects. The synergy between all the components above will be able to produce outputs in the form of competent students who are in accordance with the needs of the world of work, both in terms of their soft skills and hard skills.

### Suggestions

Embroidery learning is one of the lessons in fashion education. Fashion Design Education has its own characteristics that are loaded with the application of various skills learning strategies. In learning fashion, it is important to find the right approach by applying various learning strategies. As a vocational education, the proportion of practical courses is more than theory, namely 60% practice and 40% theory and creativity development is an important point in the learning process.

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