

# Collaboration Research of Tohoku University, Universitas Pendidikan Indonesia and Shirayuri Women ' s College Global Study of Student Engagement

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# Collaboration Research of Tohoku University, Universitas Pendidikan Indonesia and Shirayuri Women's College

## Global Study of Student Engagement

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Currently, one of the learning systems that can increase the participation of a learner is student engagement. Develop student engagement in learning activities are related with teacher effort to encourage student having interaction with other relevant resources. An interest in the learning objectives mentioned above, encourages research on student involvement in a global situation where students from two countries (Japan and Indonesia) learn together in examining communities in Bali. The result from this research are increasing value of student knowledge after they have collaboration study about culture in Bali. Based on the pre-test and post tests value, there were increasing 47,73 from the previous value. In terms of the student engagement factors affecting student competency that is productiveness, cultural diversity, communication skills, collaboration skill and responsibility. Student engagement contributes 77,7% to students active learning. Also calculated the significance between student's engagement and active learning are  $0,000 < 0,05$ , meaning that there is a significant correlation. From this study, we can conclude that student engagement indeed increases student competency in knowledge and collaboration. As a result of global study between two university students also develop competency in cultural diversity, but communication still becomes a barrier for learning activity.

**Keyword** : student engagement, project-based learning

### A. Introduction

The essence of the implementation of learning activities is certainly not only to transfer knowledge from educators to students, but there is the purpose of implied learning activities, that is to foster participation and passion or willingness to learn. In addition, the learning designs that are made are expected to trigger the participation of students in an active learning activity.

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Active student involvement by fostering a willingness to learning certainly produce more optimal learning outcomes. Various efforts were made to increase students' participation and passion for learning activities by using very varied models.

The purpose of implementing learning activities is to encourage changes in students, from the cognitive, affective, and psychomotor aspects. One effort to improve the ability of lecturers in conducting the teaching process is through lesson study. Lesson study is a way to improve the quality of learning by teachers collaboratively by designing the steps to achieve goals, implement and observe learning, and reflect the results of learning as improvements in the next learning plan. The lesson study effort must be applied with various approaches and learning methods. Among the various learning approaches currently, one form that can increase the active participation of students is the student engagement learning system. Engagement is a growth-producing activity through which individually allocates attention in active response to the environment (Csikszentmihalyi, 1990). Student engagement is concerned with the time and effort of the students and their institutions intended to be optimistic, the students experience and enhance the learning outcomes and the development of students and performance, and the reputation of the institution.

The application of the student engagement learning system can be done in various forms. Forms of activities that can increase active participation and meaningfulness of students in a learning activity must be in a form that involves students as a whole. Some forms of activities that can involve students as a whole are through problem-based learning and project-based learning models. This research planning and implementation was conducted by four researcher and analysis was conducted by Mrs Yanti.

## **B. Literature Review**

Student engagement is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution. (Vicki Trowler, pg.2, 2010) Fredricks, Blumenfeld, and Paris (2004, 62-63), drawing on Bloom (1956), usefully identify three dimensions to student engagement, as discussed below:

1. Behavioral engagement Students who are behaviourally engaged would typically comply with behavioral norms, such as attendance and involvement, and would demonstrate the absence of disruptive or negative behavior.
2. Emotional engagement Students who engage emotionally would experience affective reactions such as interest, enjoyment, or a sense of belonging.

3. Cognitive engagement Cognitively engaged students would be invested in their learning, would seek to go beyond the requirements, and would relish the challenge.

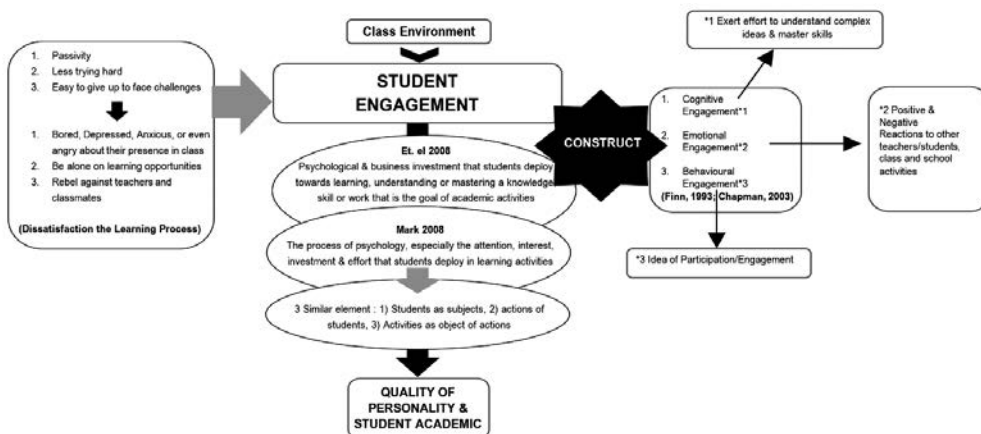
Australasian Survey of Student Engagement (AUSSE), which defines student engagement as “students’ involvement with activities and conditions likely to generate high-quality learning” (Coates, 2009), measured along six engagement scales:

1. academic challenge (the extent to which expectations and assessments challenge students to learn);
2. active learning (students’ efforts to actively construct their knowledge);
3. student and staff interactions (level and nature of students’ contact with teaching staff);
4. enriching educational experiences (participation in broadening educational activities);
5. supportive learning environment (feelings of legitimation within the university community);
6. work-integrated learning (integration of employment-focused work experience into the study).

This factor is not present in the North American NSSE.

Some forms of activities that can involve students as a whole are through problem-based learning models and project-based learning. Problem Based Learning is a learning approach that uses real-world problems as a context for students to learn about critical thinking and problem-solving skills, and to acquire essential knowledge and concepts from the subject matter. Problem-based learning is used to stimulate high-level thinking in problem-oriented situations, including learning how to learn. The role of the teacher in problem-based learning is to present problems, ask questions, and facilitate investigation and dialogue. Problem Based Learning is a learning model that involves students to solve problems through the stages of the scientific method so that students can learn the knowledge related to the problem and at the same time have the skills to solve problems. Problem Based Learning is a learning process that is the starting point of learning based on problems in real life and then from this problem students are stimulated to study this problem based on new knowledge and experience.

Project-based learning is a student-centered learning model to conduct an in-depth investigation of a topic. Students constructively deepen learning with a research-based approach to problems and questions that are weighty, real, and relevant (Grant, 2002). Project Based Learning is the use of projects in the teaching and learning process, with the aim of deepening learning, where students use investigative questions as well as technology that is relevant to their lives. These projects also function as materials to test and assess student competencies in certain subjects, not by using conventionally written examinations. In PBL, students develop their own investigations with group partners and individually, so students will automatically develop their research abilities. Students are actively involved in the process of defining problems, problem-solving, decision making, and other investigative activities. They are encouraged to come up with realistic ideas and solutions.



(Figure 1) Lesson Design Mapping

## C. Aim of Practice

### 1. Aim of Engage

The purpose of student involvement in this learning is to increase their attention and focus on the learning they are doing. Their involvement can motivate them to practice in improving their critical thinking skills in exploring the sources of information from the learning material they are learning so that they will experience meaningful-learning so they happily share their meaningful learning experiences with people surrounding.

### 2. Teacher's Role

The role of the teacher in this activity is to design, direct, and evaluate all learning activities carried out by students. The teacher designs learning for students, so students can be fully involved in learning activities. In addition, the teacher also directs students with a variety of tools and materials to arouse the willingness of participating students by providing instruments, grids, and instructions for making projects to be made by students. In the beginning, middle and end of the activity, the teacher evaluates student activities in this learning.

### 3. Student new competency for communication in different cultures and respect

Another goal of this activity is to provide new competencies for students by communicating in different cultural situations and the competence of mutual respect and tolerance with each other. They are required to be able to communicate with their group friends who come from different countries and cultures, besides that they also have to explore the culture that is in the traditional village they are visiting. So, they are honed to have good communication skills and can learn a lot about culture without them even knowing it.

## **D. Learning Design for Student Engagement**

### **1. What student do in Bali**

Learning activities are started by giving an initial lecture about Penglipuran Bali village by presenting a video about the activities there and then dividing the student group into 3 major groups, namely cultural groups, tourism groups, and community education groups. In 3 large groups then divided into small groups as many as 19 groups with each group having a total of 3-4 members. After that, students were given a pre-test to know the competency of their knowledge about the Penglipuran Bali village. After pre-test finished, students gather in their groups to discuss the project they are going to do. After the discussion, they were given a post-test to measure the increase in their knowledgeability from the results of the discussion process. Provision of initial knowledge in the introductory lecture is their initial provision to determine the direction of the project they will make.

The activity continued in the village of Penglipuran, Bali. Students are given the opportunity to gather as much information as possible to the resources person according to their sub-theme groups by using the tools and materials they have prepared in making the video project. In addition, students are also given the opportunity to live with the community there, so that they can know the environmental conditions of the community there in carrying out their daily activities. Students also collaborate with students from two other campuses from Japan so that they also learn to communicate in foreign languages to jointly dig up information in the Indigenous village of Penglipuran.

### **2. Engagement learning process (activity 3 groups)**

The process of engagement learning in the three groups, namely they were made to be involved in the discussion process when making a video project scenario that they will create, made in small groups so that each student has a great opportunity to be involved in the discussion process, besides making videos in Adat village Penglipuran they also divided the tasks, as interviewers, cameramen, directors, and editors. This makes students fully involved in their video projects. In the process, they are also assessed from their knowledge, emotional, and personality aspects. From the aspect of knowledge, students are measured through a pre-test and post-test. Emotional and personality aspects, students are measured through questionnaires at the end of activities and observation sheets.

## **E. Learning Evaluation**

### **1. Evaluation Process**

The method used in this research is a quantitative descriptive method. Student fill the

questioners and answering sheet to collect quantitative data as primer data and observation sheet for secondary data information. Evaluation of learning activities is carried out using various instruments, including observation sheets and questionnaires. Evaluation of learning activities carried out to all students totaling 59 people.

**1.1. Data Analysis Technique**

**a) Data Description**

In this study, the Likert scale is used to describing student engagement with active learning. To see the results of calculations that have been done, then refer to the score interpretation table, as follows:

**(Table 1) Likert Percentage Scale in Data Description**

Value (%)	Interpretation Criteria
81-100%	Very high
61-80%	High
41-60%	Enough
21-40%	Low
0-20%	Very low

*Source: Riduwan (2008, p. 95)*

**b) Normality Test**

The normality test is done to see whether population data has a normal distribution or not so that it can be used in parametric statistics. The purpose of the data normality test is to find out whether or not the variable is normal or not. (Putri, 2016, pp. 43-44)

The normality test in this study is by using the Kolmogorov Smirnov Sample Test using the SPSS version 22.0 application. The Kolmogorov Smirnov test is to compare the distribution of data to be tested with a standard normal distribution.

**c) Regression Analysis**

Multiple regression analysis is used to predict the value of the dependent variable (Y) if the independent variable is at least two or more, to prove the presence or absence of a functional relationship or causal relationship between two or more independent variables. (Riduwan, 2016, p. 108) The multiple correlation formula is as follows:

$$Y' = a + b_1X_1+ b_2X_2$$

Information:

Y ' = Dependent variable (predicted value)

- X1 and X2 = Independent variables
- a = Constants (Y value 'if X1, X2 ... .. Xn = 0)
- b = Regression coefficient

Furthermore, to find out the significance of the Double Correlation, the first search for  $F_{count}$  is then compared with  $F_{table}$ .

The formula for finding  $F_{count}$  is as follows:

$$F_h = \frac{R^2/k}{(1-R^2)/(n-k-1)}$$

Information:

R = Dual Correlation Coefficient Value

k = Number of independent variables

n = Number of samples

$F_{count}$  = F value calculated

Rules for significance testing:

If  $F_{count} \geq F_{table}$ , then reject  $H_0$  means significant

If  $F_{count}$  is  $\leq F_{table}$ , accept  $H_0$  means not significant

#### d) Determination Coefficient Test

The coefficient of determination test aims to find out how much the influence of participation variable (X1) and the significance of the participants (X2) on the quality of care (Y) variable. The determinant coefficient is used to state the size of the contribution of variable X to Y determined by the formula:

$$kd = r^2 \times 100\%$$

Information:

kd = Value of determinant coefficient

r = Value of correlation coefficient

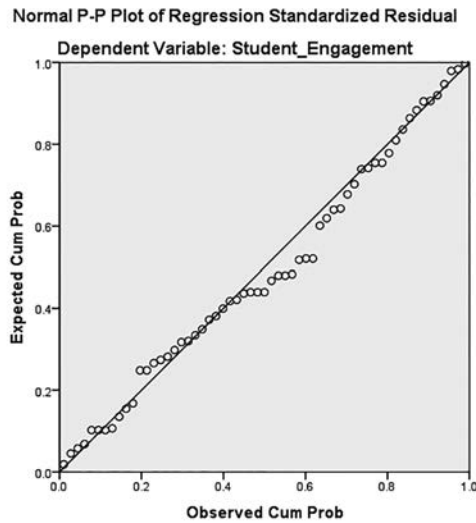
100% = Multiplier which states in percentage

## 2. Research Results

### 2.1. Normality Test

The researcher used the Kolmogorov Smirnov test, in this test using the SPSS statistical v.20.0 application. Below are the results of the normality test:





(Source: Data Processing Results using the SPSS Application version.20, 2018)

(Graph 1) Norma; P-P Plot

(Table 2) One-Sample Kolmogorov-Smirnov Test

		Student_Engagement	Active_Learning
N		59	59
Normal Parameters <sup>a,b</sup>	Mean	99.95	51.73
	Std. Deviation	9.893	5.886
Most Extreme Differences	Absolute	.170	.120
	Positive	.115	.111
	Negative	-.170	-.120
Kolmogorov-Smirnov Z		1.304	.920
Asymp. Sig. (2-tailed)		.067	.365

a. Test distribution is Normal.

b. Calculated from data.

(Source: Data Processing Results using the SPSS Application version.20, 2018)

The table above shows that the calculation results of the normality test in the calculation obtained the significance value of student engagement (X1) of 0.067, while the significance level was 0.05 so that  $0.067 > 0.05$ . The calculation of the significance value of effective learning (Y) is 0.365, while the significance level is 0.05, so  $0.365 > 0.05$ . Then it can be concluded that the data from the population are normally distributed because the value of each variable is greater than the price of the significance limit of 0.05. Based on these calculations, the researchers tested using parametric statistical calculations.

## 2.2. Regression Analysis

Regression analysis is used to test the pattern of relationships between research variables, two independent variables, and one dependent variable. This test is used to determine the direction of the relationship between the independent variable and the dependent variable and to know the pattern of significant relationships or not.

**(Table 3) All Variable Influence Test Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)					
1 Student Engagement	-.689	3.738		-.184	.854
	.524	.037	.881	14.090	.000

a. Dependent Variable: Active\_Learning

(Source: Data Processing Results using the SPSS Application version.20, 2018)

The above results are the results of simultaneous calculations which show that the student engagement coefficient has a value of 0.881. From the table, it can be seen that p-value of student engagement is 0,000 or the probability is above 0.05 (0,000 <0,05). So that it has the conclusion that student engagement has a significant influence.

## 2.3. Determination Coefficient Test

The following are the results of the calculation of the coefficient of determination :

**(Table 4) Determination Coefficient Test Model Summaryb**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881 <sup>a</sup>	.777	.773	2.804

a. Predictors: (Constant), Student\_Engagement

b. Dependent Variable: Active\_Learning

(Source: Data Processing Results using the SPSS Application version.20, 2018)

The results of processing the data are then entered into the following formula:

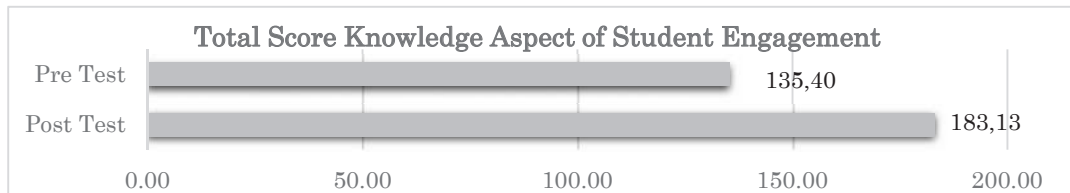
$$D = r^2 \times 100\% = 0,77 \times 100\% = 77,7\%$$

The results of the above calculations are 77.7%, meaning that student engagement contributes 77.7% to student active learning. While 22.3% were influenced by other variables not discussed in this study.

### 3. Activities Reflection

#### 3.1. Obtaining Student Engagement Results

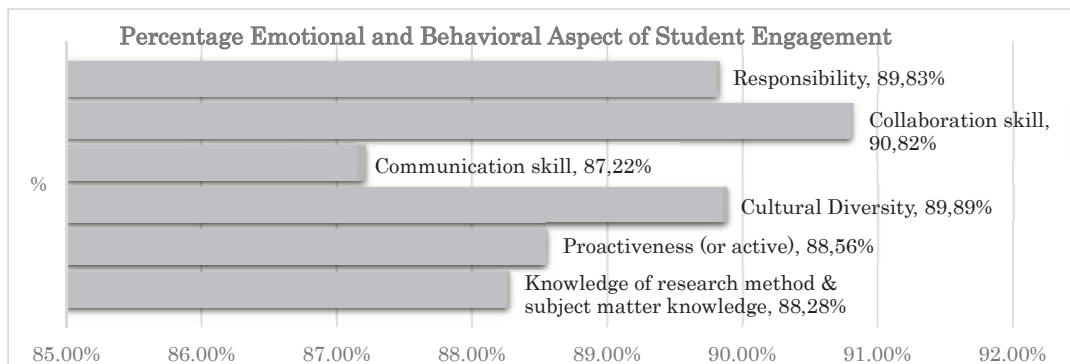
Below is the result of data processing from 3 aspects of student engagement in knowledge, emotional and behavioral:



(Source: Data Processing Results using Microsoft Excel Application, 2018)

(Graph 2) Total Acquisition of Knowledge Aspects

From data processing, the results of student pre-test and post-test on the knowledge aspect obtained the pre-test results of all students at 135.40 while the post-test results at 183.13, from these results it can be seen that there was an increase in scores of 47.73. The acquisition indicates that students' knowledge at the time before being given basic knowledge and group study, students did not yet know the basic knowledge about Penglipuran Village. After the students were given the chance to discuss in a small group to find out more about Penglipuran Village, the students better understood the village of Penglipuran than before.



(Source: Data Processing Results using Microsoft Excel Application, 2018)

(Graph 3) Percentage of Emotional and Behavioral Aspects

The graph above shows that the percentage gain in the aspect of collaboration skill has the highest percentage of 90.82% compared to the others. The next percentage was obtained by the

Cultural diversity aspect of 89.89% and Responsibility of 89.83%, then the Proactiveness aspect was 88.56%, then Knowledge of research methods and subject matter was 88.28%, then Communication Skill aspects were 87.22%.

### 3.2. The relationship between Student Engagement and Active Learning

The results of this study also found a relationship between student engagement and active learning in student learning. The following are the results obtained:

(Table 5) Correlations Between Student Engagement and Active Learning

		Student Engagement	Active Learning
Student Engagement	Pearson Correlation	1	.881**
	Sig. (2-tailed)		.000
	N	59	59
Active Learning	Pearson Correlation	.881**	1
	Sig. (2-tailed)	.000	
	N	59	59

\*\* Correlation is significant at the 0.01 level (2-tailed).

(Source: Data Processing Results using the SPSS Application version.20, 2018)

From the results of calculations in table 5, the results of significance between Student engagement and active learning are  $0.000 < 0.05$ , meaning that there is a significant correlation between student engagement variables and active learning. Based on the value of r count on the student engagement relationship with active learning is 0.881, while the r table with respondents as many as 59 people shows a number of 0.252 so it can be concluded that there is a relationship or correlation between student engagement variables with active learning variables. Because the r count in this analysis is positive, the relationship between the variable student engagement and active learning is positive, this means that increasing student engagement also increases student active learning.

## 4. Research Instrument

### 4.1. Knowledge Aspect Measurement Tool

The measuring instrument used in measuring the aspects of knowledge is the pre-test and post-test which are formulated in the form of google form. Pre-test and Post-test questions attached.

#### 4.2. Measuring Tools for Emotional, Behavioral, and Active Learning Aspects

Measuring instrument used to measure emotional, behavioral, and active learning aspects, namely questionnaire in the form of google form and observation sheet (attached).

### 3. Conclusion

Lesson design in the implementation in the classroom through the Project Based Learning approach, greatly helps the learning process become more neat, systematic, and innovative. The design made in learning with design lesson makes lecturers more creative and innovative in packing material content which will be an indicator of student achievement, besides that lesson design also makes students more actively involved in each learning process. Students and lecturers are more interactive in the class in the question and answer process, students are more explorative in digging up information when in group discussions and when meeting resources person in the community, students are also required to have other skills in packaging video projects that will become the group's products so that they realize or no they have to learn how to make interesting videos. The results of this study indicate that the aspect of collaboration on student engagement has the greatest results compared to other aspects, meaning that student engagement greatly enhances student collaboration in learning. In addition, the results of the relationship between student engagement and active learning are positive and significant, meaning that the more students are involved in learning, the more active students will be in learning and the significant influence on student engagement on active learning is 77.7%.

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APPENDIX

CHAPTER DESIGN

COURSE : Ethnology

TOPIC : Community Education, Cultural Values, and Tourism Local Potential

TIME : 3 x 150 minutes

NO	MATERIAL	TIME : MINUTES	CORE MATERIALS • HOW TO LEARN	ISSUE/ PROBLEM TO DISCUSS	ATTENTION/INTEREST	SKILLS	THINKING PROCESS	UNDERSTANDING	ASSESSMENT
1	Community Education	150							
	<i>Planning</i>		<ul style="list-style-type: none"> <li>◦ <i>Planning</i> of Local Community Education</li> <li>• Finding out about community education planning around the site</li> </ul>	How is community education planning on site?				v	Explain the ways, advantages, disadvantages, and recommendations for community education planning around the site
	<i>Organizing</i>		<ul style="list-style-type: none"> <li>◦ <i>Organizing</i> of Local Community Education</li> <li>• Finding out about community education organizations around the site</li> </ul>	How to organize community education on site?			v		Explain the ways, advantages, disadvantages, and recommendations for organizing education for the community around the location
	<i>Actuating</i>		<ul style="list-style-type: none"> <li>◦ <i>Actuating</i> of Local Community Education</li> <li>• Observe the implementation of community education around the site</li> </ul>	How is the implementation of community education on site?	v				Explain ways, advantages, disadvantages, and recommendations for the implementation of community education around the site
	<i>Controlling</i>		<ul style="list-style-type: none"> <li>◦ <i>Controlling</i> of Local Community Education</li> <li>• Find out the control and evaluation of community education around the location</li> </ul>	How are community education controls and evaluations on site?				v	Explain the ways, advantages, disadvantages, and recommendations for control and evaluation of education in the community around the location
2	Local Cultural Value	150							
	Local cultural symbols		<ul style="list-style-type: none"> <li>◦ Symbols, slogans or anything else that looks visible (clear)</li> <li>• Observing and trying to understand the meaning of symbols, slogans or anything else that is seen in plain sight that is owned by the community around the location</li> </ul>	What are the symbols, slogans or the like that you meet on location? And what is the meaning of these symbols and slogans?				v	Describe the types and meanings of symbols and slogans or the like that the community has around the location
	Attitudes and behavior of the community		<ul style="list-style-type: none"> <li>◦ Attitudes, behavior, gestures arising from the slogan, the motto</li> <li>• Observe and try to interact with the surrounding community to find out their attitudes and behavior</li> </ul>	How are the attitudes and behavior of the community around the site?	v				Explain the attitudes and behavior of the community around the location and describe unique experiences when interacting with the community
	Community trust		<ul style="list-style-type: none"> <li>◦ Belief in the belief that is rooted and becomes a frame of reference in acting and behaving (invisible).</li> <li>• Observe the beliefs held by the surrounding community as their reference in behaving</li> </ul>	What is the trust of the community around the location? And how do they carry out their religious rituals?				v	Explain the beliefs held by the community around the location
3	Tourism Based on Local Potential	150							
	Tourist attraction		<ul style="list-style-type: none"> <li>◦ Tourist attraction</li> <li>• Observe the state of the surrounding environment and try to find the attraction of the natural beauty of the surrounding area which is a potential for local tourism</li> </ul>	What are the natural conditions around the location? Are there potential tourist attractions around the site?	v				Describe the natural conditions and attractiveness that is owned around the location

Internal potential	<ul style="list-style-type: none"> <li>◦ Internal potential</li> <li>• Observe and analyze the state and quality of tourism objects</li> </ul>	What are the conditions and quality of tourism potential around the site?	v			Explain the condition and quality of existing tourism potential
External Potential	<ul style="list-style-type: none"> <li>◦ External Potential</li> <li>• Observe and analyze development support, accessibility, supporting facilities and complete facilities for tourism objects</li> </ul>	How is the development support, accessibility, supporting facilities, and complete facilities for tourism potential around the site?			v	Spread the conditions of development, accessibility, supporting facilities, and complete facilities for the existing tourism potential and provide recommendations or suggestions

### RESEARCH INSTRUMENT OF STUDENT ENGAGEMENT

No	Aspect	Indicator	Sub Indicator	No Item	Research Technique	Data Source
1.	<i>Knowledge of research method and subject matter knowledge</i>	1.1. Cultural Knowledge	a. Understand information about the topic set		Test	Students
		1.2. Attitude of Scientific Thinking	a. Trying to understand the purpose of the activities carried out b. Trying to get accurate data from the activities carried out c. Trying to analyze the data obtained	1, 2, 3	Portfolio	
2	<i>Proactiveness (or active)</i>	2.1. Have initiative form their self	a. Bring up the attitude of initiative in responding to events during the activity b. Have the willingness o be involved in every activity	4, 5	Questionnaire and observation	Students and lecture
3	<i>Cultural diversity</i>	3.1. Identify the character of friends and society	a. Pay attention to the attitude and character of the group b. Pay attention to the attitude and character of the community c. Tolerant of differences d. Tolerant to understanding cultural differences with others is different from others	6, 7, 8, 9, 26, 27, 28	Questionnaire and observation	Students and lecture
4	<i>Communication skills</i>	4.1. Active listening	a. Listen to interviewees b. Respect and listen to the opinions of others	10, 11.	Questionnaire and observation	Students and lecture
		4.2. Active speaking	a. Speak with clear articulation b. Ask questions if not understood c. Give feedback to the others d. Deliver opinions clearly	12, 13, 14, 15	Questionnaire and observation	Students and lecture
5	<i>Collaboration skill</i>	5.1. Mutual trust and respect	a. Depending on each other as a team b. Having grounded trust c. Appreciating and respecting all people	16, 17, 18	Questionnaire and observation	Students and lecture
		5.2. Sharing information	a. Sharing information in a way that is concise, relevant to decision-making, timely and open to discussion b. Understanding how teamwork contributes to outcomes c. Meeting frequently to discuss the matter	19, 20, 21	Questionnaire and observation	Students and lecture
6	<i>Responsibility</i>	6.1. Responsible for his own behavior	a. Have the willingness to respond and creative during the activity b. Can do self-evaluation of the behavior carried out	22, 23,	Questionnaire and observation	Students and lecture
		6.2. Responsible for the assignment of individuals & group gave	a. Have self-awareness to do the assignments given b. Involved in working on group assignments	24, 25	Questionnaire and observation	Students and lecture
7.	<i>Active Learning</i>	7.1. Active Learning	a. Ask questions when don't understand b. Request feedback or advice from friend's experiences c. Identify learning or training programs available to students on campus and in their communities d. Learn by observing more experienced friends or practitioners e. Find and use learning materials or learning source, such as searching the internet, reading articles, etc f. Search and participate in learning activities g. Identify and understand the strength of student self-expertise and areas where students feel they need improvement h. Develop self-study goals on campus and in personal life i. Innovate to do something j. Recognizing self-learning styles k. Responsible for student' own learning l. Maintain skill levels by practicing what they have learned	29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43	Questionnaire	Students