

Designing Student Engagement in Project Based Learning

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Abstract—Purpose of this study is to describe the design and implementation of ethnology learning process by making video projects in project-based learning. The method used in this study is addie method in collaborative class for six months with 59 students as participant. The results of study are cultural learning map with project-based learning that has improve student's cognitive abilities to 47.73 point the results obtained from this study is student engagement design can increase student involvement in learning process and their cognitive abilities.

Keywords—student involvement; project-based learning; culture learning

I. INTRODUCTION

The purpose of learning activities is to encourage changes in students, both from the cognitive, affective, and psychomotor aspects. Among the various learning approaches currently one of the forms that can increase the active participation of students is the student engagement learning system. Engagement in production activity through which individual allocates active attention to response to the environment [1]. Student engagement is concerned with the interaction between time, effort and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the performance of students and performance, and reputation of the institution.

Application of student engagement learning systems can be done in various forms. The forms of activities that can increase the active participation and meaningfulness of students in a learning activity must certainly be in a form that involves students as a whole. Some forms of activities that can involve students in their entirety are through problem-based learning and project-based learning models.

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 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 inquiry 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 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 real life problems 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 study deeply with a research-based approach to problems and questions that are weighted, real, and relevant [2]. 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 and also technologies that are relevant to their lives. These projects also function as material for testing and assessing student competencies in certain subjects, not by using conventional written examinations. In PBL, students develop their own investigations with group colleagues or individually, so that 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 bring realistic ideas and solutions.

II. METHOD

The method used in this study is ADDIE model. ADDIE Model is one of the most common models used in the instructional design field a guide to producing an effective design. This model is an approach that helps instructional

designers, any content’s developer, or even teachers to create an efficient, effective teaching design by applying the processes of the ADDIE model on any instructional product. Analysis, in order to carry out the analysis phase we have to analyze four things, analyze the learners (where they are at, their skills and needs, etc.), develop an instructional analysis (to provide the necessary steps and present opportunities to learn and use new information in an instruction), create instructional goals (aimed at specifying the end desired result), and analysis’s learning objectives (how to measure the attainment of goals) in ethnology course. Design, this is about applying the instruction. In fact, in this step thinks about how design instruction can really be effective in ways that facilitate people’s learning and interaction with the materials (ethnology’s student). Development, in this step we integrate the technology with the educational setting and process, starts to develop and create a good quality factual sample for the instruction design, the materials of the course, and run through of the conduction of the course. Implementation, we have to consider three major steps, which are training the instructors, preparing the learners, and organizing the learning environment. With these three steps we can display our course in very active and authentic ways to achieve the implementation. Evaluation, it is very important to evaluate each step, in order to make sure that we achieve our goals using the instructional design and materials to meet the learner needs.

III. RESULTS

In using a learning model, a measuring instrument is needed to determine student learning outcomes. The measuring instrument used in the design of student engagement includes three aspects, including: 1) Cognitive engagement, cognitively engaged students would be invested in their learning, would seek to go beyond the requirements, and would relish challenge. 2) Emotional engagement, students who engage emotionally would experience affective reactions such as interest, enjoyment, or a sense of belonging. 3) Behavioral engagement, students who are behaviorally engaged would typically comply with behavioral norms, such as attendance and involvement, and would demonstrate the absence of disruptive or negative behavior.

using the Project-Based Learning method: 1) Start, this step is an activity carried out prior to the process of learning activities, then the steps in the initial activity are: a) Make chapter design, this stage is the beginning of the activities in the implementation so that chapter design, chapter design is a material design that will be delivered during the learning process; b) Making lesson design, lesson design is a learning design at each meeting, containing the initial activities, core activities, and final activities on the student's perspective and the lecturer perspective; c) Prepare Learning Media and Materials, making a chapter design which is then revealed to be a lesson design makes it easier for lecturers to determine the media and learning materials to be used in accordance with the predetermined design. Media and learning materials that can be used include projectors, PowerPoint slides (presentation materials), videos, etc.; d) Prepare Learning Measurement Tools (instruments), measuring instruments used can be various kinds according to needs, can be made instruments in the form of pre-test and post-test, observation sheet, offline / online questionnaire. 2) Core Activities, this activity is a core activity in implementing lesson study. In this activity the lecturer conducts the learning process tailored to the design lesson that has been made: a) Introduction of Material. the lecturer conveyed the introduction of material at the beginning of learning by providing basic knowledge of the material to be learned; b) Delivering Student Projects. the lecturer will give the project according to the courses taught, one of them is by giving a video project to students about the subjects being studied. Submission of this project is accompanied by major themes and sub-themes for division in small groups; c) Sharing Students into Small Groups. the group formed consists of 3-4 people so that the division of tasks is clearly and effectively divided. Each group gets sub-themes that will be the theme of their project; d) Students Trained in Systematic Thinking, the division of students into small groups based on sub-themes is then conditioned in such a way as for group discussion activities based on the worksheets shared, the worksheets help students to design their projects with scientific, logical, and systematic thinking; e) Students Trained to Reach Targets, students are asked to make a time table about their project so that they can set targets for each detail of their assignments in completing the project, f) Students Trained Exploratively in Exploring Information, the process of completing student projects is given a deadline according to agreement, in the project completion process students will be trained more exploratively in digging information, because this will have an impact on the results of their projects. They can dig information anywhere, anytime, anywhere by looking for competent and trustworthy sources. 3) End, the final activity of lesson study is evaluating and reflecting on the results of the projects made by students: a) Reflections on Student Projects, student projects that have been completed are then reflected by lecturers and students together, regarding the results and content contained in their projects to become suggestions for students to complete a project so that later on they can become learning for them; b) Lesson Study Evaluation, the lesson study evaluation is carried out when all activities have been completed and the student project has been completed, so that the results of the design, measuring instruments, and methods used in the learning process can be assessed / evaluated.

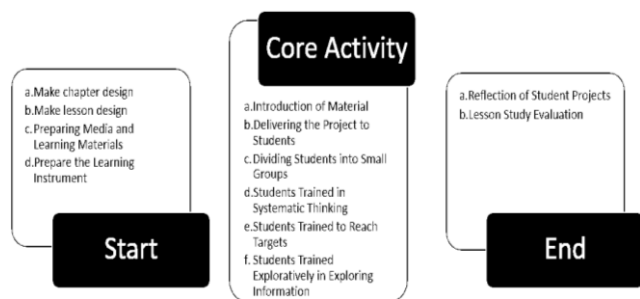


Fig. 1. Student engagement design.

Design of student engagement in Figure. 1. The following are the steps for implementing Student Engagement Design

The application of student engagement to UPI students that will be carried out in the Panglipuran Bali Traditional Village is by dividing students into several groups. The themes of large groups are divided into 3, namely: Cultural Group, Tourism Group, and Community Education Group. Below are small groups that will be formed: 1) Cultural group division: preservation of panglipuran culture, community system in panglipuran, economic system and livelihood in panglipuran, panglipuran belief system, panglipuran knowledge system, panglipuran living and technology equipment system, and covering cultural services in panglipuran village; 2) Division of tourism groups: development of the theme of tourist attractions, accessibility of tourist attractions, tourist marketing / promotion system, community participation in tourist attractions, facilities at tourist attractions, organizing / management system at tourist attractions, and covering tour services in the village of panglipuran; 3) Division of community education groups: learning activities in panglipuran village, formal, non-formal and informal education services in panglipuran village, the educational pattern of the family of the panglipuran village community, the role of community leaders in education in the village of panglipuran, and covering community education services in panglipuran village

The group division is a reference for students in carrying out learning activities. The following is a student engagement application scenario: 1) Students are invited to identify the needs and problems based on the 3 aspects mentioned above by using the Problem Based Learning model. In this Pre-Test, students will be given questions about Culture in Bali's Panglipuran Village, Tourism in Panglipuran Bali Village, and Community Education in Panglipuran Bali Village. They answer these questions according to their knowledge or with electronic aids; 2) The next step students are given a project to make learning videos that are in accordance with the sub-themes that have been given. All students must be involved in the process of making the video until it becomes a video product that is worth uploading to You Tube. The learning model used in this step is Project Based Learning; 3) The next step is to reflect on their work. Then, at the next meeting on campus there will be a Post-Test on Culture in Bali's Panglipuran Village, Tourism in Panglipuran Bali Village, and Community Education in Panglipuran Bali Village. They answered the question in accordance with their experience and video of their work while covering activities in the Panglipuran Bali Village; and the last 4) Measuring tool in evaluating cognitive achievement, emotional, and behavioral engagement in 3 forms, namely a test to measure cognitive change achievement, questionnaire filled by students and an observation table filled by lecturers to measure emotional and behavioral changes.

Measurements were made at the beginning, process, and end of the activity by distributing online questionnaires for pre-test and post-test in measuring cognitive aspects. We use online questionnaires to measure emotional and behavioral aspects at the end of the activity. We assess their learning process by evaluating the final project of students in the form of videos that describe the object of research during the learning process. The results obtained from measurements using these instruments are as follows:

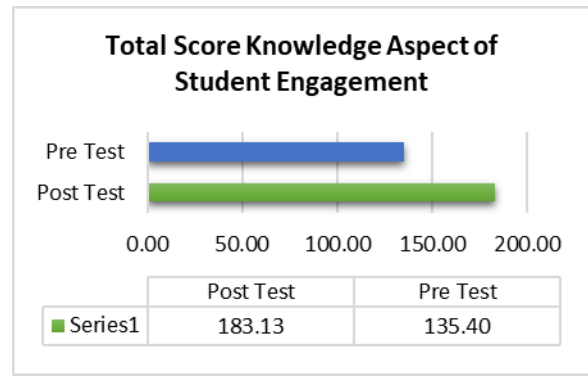


Fig. 2. Total acquisition of knowledge aspects.

From the results of 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 Penglipuran Village than before.

IV. DISCUSSION

This lesson design uses a problem-based learning approach in the form of a discussion process with scientific thinking about Penglipuran Village and project-based learning in the form of video project assignments on predetermined themes regarding education, culture and tourism activities in Penglipuran Village. It aims to increase student involvement, this agrees with other studies that classroom practices are based on inquiry, problem-based, and exploratory [3-7]. Our own longitudinal Alberta-based research [8] about the efficacy of problem-based learning supports these findings. Today's learners ask for the opportunity to find solutions and answers for themselves [9].

The results of the data obtained from the student's pre-test and post-test results on the knowledge aspect obtained the pre-test results of all students at 135.40 while the post-test results were 183.13, from the results it can be seen that there was an increase in score of 47.73. Before the pre-test students were given initial material about Penglipuran Village, after pre-test students were conditioned to discuss with their group about Penglipuran Village, then the post-test was done. From the process it is related to the results of data processing, the discussion in the group helps students get more knowledge. This is in agreement with Hake [10] and Gabbert et al. [11] note that group discussions help students learn better, understand subject matter more quickly, and become more engaged in the class.

Other factors that influence student engagement are learning situations and conditions. teachers play an important role in this matter. this is agreed with Kahu, the situational interest then acts as a motivator and leads to greater behavioral

and cognitive engagement [12]. Another opinion from Rotgans and Schmidt explored the links between teacher characteristics and students' situational interest [13]. Their findings highlight that the teacher's social congruence, their concern for their students, and their subject matter expertise both create cognitive congruence – an ability to explain concepts and materials to students in a way that students can understand. This cognitive congruence then increases the students' situational interest. Krause and Coates research that associated student engagement with the high quality in learning outcomes [14]. Overall, this student engagement design increase student involvement in learning process.

V. CONCLUSION

The design learning with lesson design makes lecturers more creative and innovative in designing material content that become indicator of student achievement, lesson design also makes students more actively involved in each learning process. Lesson design in implementation in the classroom through the Project Based Learning approach greatly helps the learning process become more neat, systematic, and innovative. Students and lecturers are more interactive in the class for question and answer process, and they more explorative in gathering information in group discussions and when meeting resource people in the field, students are also required to have other skills in packaging video projects that will become the group's products so that they no they have to learn how to make interesting videos.

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