Students' Perception of Project-Based Learning Model in Blended Learning Mode Using Sipejar

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Abstract-*The aims of this paper is describing students perception regarding project based learning model for design and strategy of training program course. Design and strategy of training program course is a compulsory course for Educational Technology students. The students are expected to be able to design a training program for both private and state-owned training center. The course focuses on the delivery of concept and training program development practice and several learning strategies for training. The learning process involves the presentation of materials, discussions, workshops of program design development, online and offline consultation and final presentation of program design. Student learning progress can be monitored and given feedback on the results of their work. At the end of the learning, the students have been able to develop the design of the training program. The research method used a qualitative approach with descriptive data analysis technique. It further shows that the project-based learning model is able to train creative thinking, collaboration, project management, and challenging hence it is suitable to be applied in the course.*

Keywords— students perception, project based learning model, training design, Higher order thinking

I. INTRODUCTION

Learning is defined as a process to achieve the target certain set competence. The competency targets include the competence of the subject and the competence of the graduates of the study program. Design and Strategy of Training Program Course is a core course within education technology study program which is oriented to the improvement of creative thinking skills in making program design. Design and Strategy of Training Program Course focus on the design and strategy of education and training programs, needs analysis of education and training programs and development in program strategy.

To achive the desired target of course subject, it requires well-designed learning model and method. Inital research has confirmed that project based learning is one of an appropriate alternative. Affirm that project based learning has improved student critical thinking. The study was conducted byb employing written argument as a media in applying project based learning. It obtained a 16.9% improvement and it became 31.6% of the result among the students [1]. Additionally, project based learning could also improve student creative thinking skill. It is further argued [2]. She states that creative thinking skill of the students is improved. The research was conducted by employing pre-test and post-test items. It obtained an improvement from 2.1 to 7.5. The score was obtained after calculating the mean from 40 students. Hence, it is beneficial to improve the thinking skills of students. Not to mention, project based learning is a proper model to encourage learning motivation, problem-solving ability, collaboration, and resources management ability. To sum up, project based learning is one learning model which is highly constructive to be implemented in Design and Strategy of Training Program Course of educational technology.

This study was conducted by employing a qualitative approach. The population was students taking Design and Strategy of Training Program Course from three classes. The data were obtained randomly and it was obtained using an online questionnaire form. Several techniques were used to analyze the obtained data. The data analysis was used descriptive analysis of respondents questionnaire results regarding the implementation of project based learning.

II. METHOD

The research method used a qualitative approach with descriptive data analysis technique.

III. RESULTS AND DISCUSSION

A. Instructional model concept

[3] Describes the instructional model is a framework or direction for students based on certain principles or theories (learning) for effective and systematic learning with the aim that the competence of students can be achieved as expected. Meanwhile, according to [4], the instructional model is a plan or pattern used as a guide in planning the learning in the classroom or tutorial learning. Instructional model refers to the learning

approaches to be used, including the teaching objectives, the stages in the learning activities, the learning environment, and the management of the class [5].

B. Project based learning

Project based learning is a learning model that accommodates students to conducting investigations, discussing various topics in group forums, obtaining knowledge from various sources, making decisions, and presenting products [6]. Project based learning is a learning based on phenomena or problems that exist in everyday life [7]. The project-based learning model can be viewed as one of the models for creating a learning environment that can encourage students to construct their personal knowledge and skills [2].

Thus, the project-based learning model is a learning model that emphasizes student activities in understanding a concept and principles and then conducting an investigation, discussing various topics, obtaining knowledge, making decisions and presenting products. The project-based learning model focuses on the core concepts and principles of a study discipline, involving students in problem-solving investigations and other meaningful task activities, allowing students to work autonomously to construct their own knowledge and culminate in producing the product Thomas (2000) [8]. Through the model of project-based learning, learning outcomes are expected to be more meaningful for students and more independent in learning because in this model students are required to solve problems and completion of tasks [9].

C. Project based learning syntax

Project-based learning syntax [6] consists of 5 stages, namely: (1) planning an investigation process according to driving question, (2) searching for the theoretical background of the driving question, (3) presenting that theoretical background to class and discussion about issue, (4) deciding the study group of the way of collecting data and data analysis, and (5) evaluating data, arriving a conclusion, presenting the project in class as preferred and discussion. At the planning stage an investigation process according to the driving question, it accomodates the students to evaluate the data needed to complete the project. Stage searching for the theoretical background of the driving question, ot facilitates the students in obtaining various concepts of knowledge to support planning of inquiry compiled by students, thus enhancing the reasoning ability of the students. Stage presenting that theoretical background to class and discussion about issue improves students' ability through the discussion process. Stage deciding the study group the way of collecting data and data analysis improves students ability in obtaining the right data to complete the project. Stages of evaluating data, arriving a conclusion, presenting the project in class as preferred and discussion enhancs students' ability to evaluate the data obtained and using the student's reasoning ability to construct appropriate conclusions [10].

Meanwhile, according to The George Lucas Education Foundation and Dopplet, project-based learning syntax includes (1) starting with essential question, (2) making project design (3) creating schedule (4) monitoring the students and progress of project 5) assessing the outcome and (6) evaluating the experience. Start with essential question stage is a stage in preparing a question that should not be easy to answer and can lead the students to create projects. Such questions are generally divergent, provocative, challenging, requiring high-order thinking, and are linked to students' lives [11]. The stage of making project design is a collaborative project planning stage among students. Planning consists of the rules of the game, selection of supporting activities and answering important questions by integrating the various materials that can be accessed for project completion. Create schedule phase is the stage of preparation of the schedule of activities in completing the project collaboratively. The student monitoring and progress of project stages are the stages in the monitoring performed by students against students during project completion. The assessment of the outcome stage is the stage of evaluating the achievement of the competency standard of the students. This stage is a very helpful student in preparing the next learning strategy. The evaluation-experience stage is the final stage in which students and students develop discussions in order to improve performance during the learning process so that a new inquiry can be found to answer the questions posed at an early stage.

Project based learning is a learning which enphasizes on student’s independent learning. Therefore, project based learning is closely related to constructivism learning since it also emphasizes independent learning.

D. Some research and description on a project based learning model

Research on project-based learning has been done for a long time. The result proved that project based learning can be one of the solutions to learning problems. This is confirmed through the study of John W. Thomas which shows that learning outcomes of students using project based learning models increased by almost 26 percent when compared with control class and there was a significant increase in the ability to solve a problem between pretest and postes for the experimental class using project based learning model. This can be a picture that the project-based learning model is able to improve the learning motivation of students [8].

In addition to improving learning motivation, project-based learning model is also able to improve the thinking ability of students. This is confirmed by the research of Novian Budi Tama, et al (2016) which mentions an increase in thinking ability of students after the implementation of the model [1]. His research focuses on the critical thinking ability of students by using written arguments from students. The result is an

increase of 16.9 percent, to 31.6 percent. Other research related to project-based learning model also affirm that the model can also improve the ability of creative thinking. This is confrimed by the research of Mulhayatiah (2014) which mentions an increase in creative thinking ability of students after the application of this model. The research was conducted using pre-test before the application of the model and the post-test after the implementation. The result was an increase in score from 2.1 to 7.5. The score was taken after calculating the mean of 40 children. This indicates that the project-based learning model also has benefits in improving the student's thinking ability [2].

The project-based learning model closely matches the four learning pillars. The four learning pillars include (1) learning to know, (2) learning to do, (3) learning to live together, and (4) learning to be. This model provides an opportunity to students to improve learning outcomes in building the four pillars of learning because students' understanding to improve (learning to know) through the process of scientific work (learning to do) are done collaboratively (learning to live together), so that the independence of learning on students will be achieved (learning to be) Munawaroh, Subali and Sopyan (2012) [12].

The study of project-based learning model in constructing the four pillars of learning has been done by Munawaroh, Subali and Sopyan (2012) which take the study population of all students of VIII graders from regular class at SMP Negeri 1 Tambakromo academic year 2011/2012. The results show that the project-based learning model can be applied to establish four learning pillars. The study was conducted by making a comparison between the control class and the experimental class. In the control class, students tend to still memorize the material delivered at the first meeting [12]. The result is contrasted to experimental classes that apply project-based learning models. In the experimental class, the students' activities in the group discussion up to the presentation look more interesting when compared to the control class. Therefore, this model can increase the learning activity of students.

E. Project based learning adaptation to Design and Strategy of Training Program Course

Design and Strategy of Training Program Course are provided to equip knowledge, attitude, and skills in designing, developing and implementing training design, training needs analysis and design components and strategies Training Programs in various training areas according to content characteristics and target training competencies Kuswandi and Surahman (2017) [13]. The objectives to be achieved in this course are expected to be able to (1) understand the basics of Training in human resource development (2) to understand, design and develop Design of ADDIE Model Training Program (3) capable of understanding, designing and developing the analysis process (4) able to analyze, design and develop job descriptions, tasks, and training objectives (5) capable of analyzing, designing and developing media and training materials (6) capable of analyzing, designing and developing learning strategies in training (7) capable of analyzing, designing and developing training program evaluations and (8) being able to practice the training after undergoing the entire lecture process.

This course mainly used discussion within the learning process. The method of discussion in learning is the way of delivering material where the teacher gives the opportunity to the students to collect opinions, make conclusions or arrange various alternative problem-solving Setyanto (2014) [14]. Thus, the method of discussion is a way of studying the course through the exchange of opinions in order to find a solution to the certain problem.

Within Design and Strategy of Training Program Course, the presentation of materials aregiven through workshop of program design development, online and offline consultation and final presentation of design. At the end of the learning, the students should be able to develop the product of the training program design.

The first meeting of the course was conducted by the lecturers. Then, the next meeting of the courses is focused on students' presentation. At the end of the meeting, the lecturer provides an assessment and evaluation of the learning. In the development program design workshop, students focuse on development strategy, model, and method for training. Then, students are given an opportunty to consult the lecturer regarding the developed program. The consultation can be done neither online nor offline. At the end of the meeting students present the developed and designed program.

F. Student perception regarding project based learning

According to the results, it was obtained an information that teh students were satisfied when the project was done. In detail, the results confirm that one respondent very disagreed, five respondents, disagreed, nine respondents agreed and 18 respondents strongly agreed. No subject responded strongly disagree on "Project based learning as an innovative instructional model", while five subjects disagreed, 14 subjects were agreed and 14 subjects strongly agreed.

In addition, two subjects were strongly disagreed on "Project based learning trains project management skill", while five subjects disagreed, 17 subjects agreed, and nine subjects strongly agreed. As for "Project based learning trains a culture of cooperation", five subjects were strongly disagreed, three subjects were disagreed, however, 14 subjects were agreed and 11 subjects strongly agreed.

For the statement of "Project-based learning model minimizes lecturers' dominance", three respondents stated strongly disagree, two respondents stated disagree, but 22 respondents agreed and six respondents stated strongly agree. For the statement of "Project-based learning model is oriented towards the optimization of potential students", it showed that no respondents stated strongly disagree, while five respondents stated disagreed and there are 23 respondents agree and five respondents stated strongly agree.

In the statement "Project-based learning model trains creative thinking skills", it showed no respondents stated strongly disagree, while six respondents stated disagreed and there are 17 respondents agreed and 10 respondents stated strongly agree. In the statement "Project-based learning model trains cognitive skills in needs analysis, design, development, implementation, and evaluation of the program" shows no respondents stated strongly disagree, while four respondents stated disagreed, but there were 20 respondents agreed and nine respondents stated strongly agree.

In the statement "Project-based learning equips cognitive, apektif and psychomotor skills", it showed no respondents stated strongly disagree, while two respondents disagreed, but 24 respondents agreed and seven respondents stated strongly agree. In the statement "Project-based learning model is a challenging learning model", it showed no respondents stated strongly disagree, while two respondents stated disagreed, but there are 12 respondents agreed and 19 respondents stated strongly agree.

The findings of students perception are presented in Fingure 1 below.

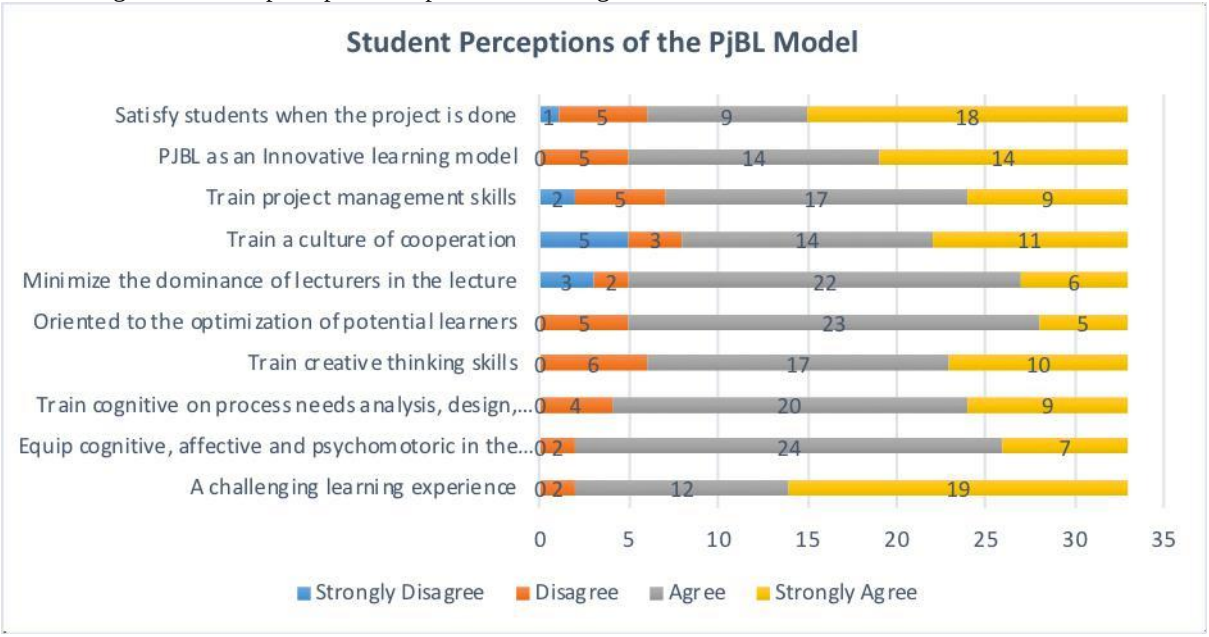

Fig. 1. Students Perception on Project Based Learning

According to the data in Figure 1, it obtained that average respondents agree regarding the statement project-based learning model satsifies them at the time the project is completed. It is supported by ongoing project management and timing demands, available resources and cooperative teamwork. In addition, it is supported by the input process of peers and lecturers who demand the results of the ideal program design. The process requires cooperation and hard work. Thus, when the program is completed, the student will feel satisfied. This is in line with respondents' perceptions of the third and fourth indicators which state project-based learning models trains project management skills and culture of cooperation.

Further, an average number of respondents agreed on the statement project based learning is an innovative instructional model since it is adaptively designed according to the characteristics of students and project produced Surrahman (2017) [15]. Adaptive learning concept avoids compelling improper service which is not in accordance with the user learning preference. It is in line with Ki Hadjar Dewantara who opines that education concept should set the students free from any compelling Kuswandi, in Hendratmoko (2018) [16]. Moreover, an average number of respondents agreed that project based learning minimizes the dominance of lecturer. It is because understanding the construction process and learning experience design is oriented on the optimization of students which challenge them as stated in the tenth indicator.

Next, the findings affirm that the average number of respondents agreed on the statement project based learning trains creative thinking. It is because the competence level targeted on the course is creative level (C6). Students are required to creatively determine the type of program to be developed. In addition, the

students are required to analyze the level of competence targeted from the program users thus they also agree with the next statement that the project-based learning model can train the cognitive skills in the material needs analysis, design, development, implementation, and evaluation of training programs, equip cognitive, affective and psychomotoric skills. Thus, overall the respondents thought that the project-based learning model is a challenging, innovative, and interesting instructional model in designing and developing the training program.

IV. Concluding Remarks

A. Conclusion

Design and Strategy of Training Program Course is a major course on Educational Technology study program which is oriented toward students creative thinking skill in designing program plan. This course focuses on the design and strategy of the training program, need analysis of training program, and strategy development. The respondents of this research affirm that project based learning used in the course provides satisfaction after the project is completed, project based learning is an innovative instructional model which trains project management skill, trains culture of cooperation, minimizes the dominance of lecturers, is oriented in students optimization, trains creative thinking, trains cognitive skill on need analysis, designing, developing, implementing, and evluating training program, provides cognitive, affective, and psychomotoric skill as well as offering challenging learning.

B. Suggestion

Project based learning is expected to be able to improve students understanding regarding concept and application of training program development for any level of the program. The authors of this paper expect the future researchers who are interested in project based learning to expand the study in the wider circumstance and varied condition and situation. Additionally, we expect the reader to take into acount this research as a reference source.

References

[1] T. N. Budi, Probosari, R. M. Widoretno, Sri, and Indriyati. Project Based Learning untuk Meningkatkan Kemampuan Argumentasi tertulis Siswa Kelas X. Biodeukasi, Vol. 9 No. 2, 2016, pp. 67-75.
[2] M. Diah, Penerapan Model Pembelajaran Berbasis Proyek untuk Meningkatkan Kemampuan Berpikir Kreatif Mahasiswa. Edusains, Vol. 6 No.1, 2014, pp. 17-22.
[3] P. Andi, Pembelajaran Konstruktivistik-Scientific untuk Pendidikan Agama di Sekolah/Madrasah: Teori, Aplikasi, dan Riset Terkait. Jakarta: PT Raja Grafindo Persada, 2014.
[4] Trianto, Model Pembelajaran Terpadu Konsep, Strategi, dan Implementasinya dalam Kurikulum Tingkat Satuan Pendidikan (KTSP). Jakarta: Bumi Aksara, 2010.
[5] M. Afandi, Chamalah, Evi and O. P. Wardani, Model dan Metode Pembelajaran di Sekolah. Semarang: UNISULLA Press, 2013.
[6] H. Turgut, Prospective Science Teachers' Conceptualization About Project Based Learning. International Journal of Intruction. Vol. 1 No. 1, 2008, pp. 61-79.
[7] D. Moursund, T. Bielefeldt, R. Ricketts, and S. Underwood, Effect Practice: Computer Technology in Education. Eugene, OR: ISTE, 1995.
[8] J. W. Thomas, A Review of Research on Project Based Learning. SR, California: The Autodesk Foundation, 2000.
[9] S. Hutasudut, Implementasi Pembelajaran Berbasis Proyek (Project Based Learning) untuk Meningkatkan Motivasi dan Hasil Belajar Mata Kuliah Pengantar Ekonomi Pembangunan pada Jurusan Manajemen FE UNIMED. Pekbis Jurnal, Vol. 2 No. 1 2010, pp. 196-207.
[10] Llewellyn, Teaching High School Sciene Throuh Inquiry and Argumentation. USA: Corwin, 2013.
[11] Kemendikbud, Materi pelatihan guru implementasi kurikulum 2013 tahun ajaran 2014/2015: Mata pelajaran IPA SMP/MTs. Jakarta: Kementrian Pendidikan dan Kebudayaan, 2014.
[12] R. Munawaroh, B. Subalim B. dan A. Sopyan. Penerapan Model Project Based Learning dan Kooperatif untuk Membangun Empat Pilar Pembelajaran Siswa SMP. Unnes Physics Education Journal, Vol. 1 No. 1, 2012. pp. 33-37.
[13] D. Kuswandi, and E. Surahman, Rancangan dan Strategi Program Diklat Rancangan Perkuliahan Semester (RPS) Mata Kuliah Rancangan dan Strategi Program Diklat Jurusan Teknologi Pendidikan Universitas Negeri Malang. Malang, in press, 2017.
[14] N. A. Setyanto, Panduan Sukses Komunikasi Belajar-Mengajar, Yogyakarta: DIVA Press, 2014.

[15] E. Surahman and H. D. Surjono, Pengembangan Adaptive Mobile Learning Pada Mata Pelajaran Biologi SMA sebagai Upaya Mendukung Proses Blended Learning. Jurnal Inovasi Teknologi Pendidikan, Vol. 4. No. 1, April 2017, pp. 26-37.
[16] T. Hendratmoko, D. Kuswandi and P. Setyosari. Tujuan Pembelajaran Berlandaskan Konsep Pendidikan Jiwa Merdeka Ki Hajar Dewantara. Jurnal Inovasi dan Teknologi Pembelajaran Vol.3 No 2. 2017, pp. 152-157.