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# The Effectiveness Of Blended Learning Learning Model Based On Constructivity

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## ABSTRACT

The purpose of this study is to see the effectiveness of developing constructive learning based models on Citizenship Education subjects. Testing the effectiveness of this learning model is done by the experimental method by comparing the use of the blended learning model with the learning model that is usually done at Raden Wijaya's State Buddhist College. This research was conducted in the semester (one) of the 2018/2019 academic year with a population of 156 students and the sample was 56 students. The sampling technique in this study used cluster random sampling and selected Dharmacarya study programs totaling 29 students and Dharmaduta study programs totaling 27 students. Hypothesis testing uses an independent T test. Based on the results of the T test obtained a significance value of 4.270 with a degree of freedom of 54. While the p value for the two-tailed test (test-tailed) is 0,000 smaller the $\alpha = 0.05$. Rejected that the statistical hypothesis Ho: $\mu$ experiment = $\mu$ control. So it can be concluded that the learning outcome score in the experimental group Dharmaduta with the control group is different. The conclusion of this study shows that the results of developing constructive blended learning models in the Sutta Pitaka are effective.

## 1. Introduction

Information and communication technology (ICT) provide an influence on the world of education as evidenced by the shifting of face-to-face learning patterns to more open education. These conditions lead to changes in the education system that is more open and flexible in which everyone regardless of status can access it at any time is not limited to space and time. The development of information and communication technology has an impact on how to teach lecturers (Liliejord, 2018). Face-to-face learning is no longer fully

part of the teaching method of lecturers. The latest learning requires a variety of learning models that provide more opportunities for students to learn by utilizing various learning resources. Learning models that have been widely used at the higher education level must be able to stimulate the potential and talents of students, so as to meet the needs of students in following the development of information and communication technology.

The blended learning learning model is part of the effort to use the advancement of information and communication technology in improving the quality of learning in higher education. The rapid development of information and communication technology has an effect on changes in the learning model that combines face-to-face learning and learning using computer devices (Ghavifekr & Wan Rosdy, 2015). The learning model is interpreted as a blended learning learning model. The blended learning model is interpreted as a combination of face-to-face learning with e-learning learning that can be used by anyone (everywhere), anywhere, anytime. Blended learning implies a combination of elements of face-to-face learning and e-learning in harmony (Ju & May, 2018).

Referring to the opinions above, blended learning is one of the learning models that provide many benefits for students and lecturers as a form of information and communication technology implementation. The findings of the study on the usefulness of blended learning were presented by Asunka (2016) who suggested that there were five main tendencies of students using the blended learning model, namely: learning effectiveness, student satisfaction, organizer satisfaction (faculty), cost efficiency and access to learning, and improvement in student abilities. Razaq's findings, Samiha & Ansari (2018) show that there is a significant increase in academic ability in students who use face-to-face learning combined with online and offline learning technology compared to learning that only uses face-to-face learning.

Based on the research findings above, this study aims to look at the effectiveness of constructivist based blended learning learning model in the Sutta Pitaka course. This research was conducted by comparing the blended learning model with face-to-face learning models to the acquisition of learning outcomes in the Sutta Pitaka course. In this research design, the effectiveness of the blended learning and face-to-face learning models will be tested in the acquisition of student learning outcomes in the Raden Wijaya Wonogiri State Buddhist College in the State College. Based on the background of the problem above, the formulation of the problem in the study in this study is as follows: (1) Are there differences in the learning outcomes of the Sutta Pitaka course between students learning to use the blended learning model and students learning to use face-to-face learning models? (2) Is the use of the blended learning and face-to-face learning model on the acquisition of learning outcomes in the Sutta Pitaka course effective?

The blended learning learning model has become a learning model that can be implemented in the classroom and outside the classroom assisted by information and communication technology. This learning model refers to a combination of face-to-face learning and computer-based learning, both online

and offline conducted through e-learning (Galvis, 2018). This combination of face-to-face learning and e-learning has provided a variety of innovations for lecturers in a variety of choices of learning models and learning media that are more flexible, focusing on learning content and subjects, as well as student abilities. The presence of blended learning helps lecturers to create more interesting learning (Holmes & Rodriguez, 2018). The more innovations made by lecturers in the use of the blended learning model, the more blended learning is combined with the learning media or the combination with the learning content, the better. Lecturers need to find the right elements and mixtures in the design of blended learning, so that they can take advantage of the benefits of this learning while maintaining the quality of interaction in the classroom both face-to-face interaction and interaction with e learning.

The combination of face-to-face learning and e learning aims to optimize learning outcomes and learning costs (Zainudin, 2015). This combination of face-to-face learning and e learning models is to achieve curriculum diversity (Pulham & Graham, 2018). The blended learning model does not use a single medium of learning but combines various variations of online and face-to-face learning so that two-way communication occurs in online and online learning where the lecturer acts as a facilitator in learning (Dewi, 2018). Given the many benefits of this blended learning model, the characteristics of the blended learning model are described as follows: (1) students have the opportunity to interact socially with meaning, (2) students have plenty of time to learn together and receive feedback (3) students are more flexible in learning both on line and online, (4) students are guided to critical thinking, (5) students are fully guided so that they are more focused on learning objects, (6) supportive blended learning all the benefits of e-learning include cost reduction, time efficiency and convenience of students in learning helping students to learn according to their speed and time, (7) in blended learning, students have enough freedom to study and time to time feedback is given by lecturers and is the best way to connect collaboration between lecturers and students.

Constructivistic is defined as knowledge built by humans little by little, the results of which are expanded through a limited (narrow) context in which knowledge is not a set of facts, concepts, or rules that are ready to be taken and remembered. Students need to be accustomed to solving problems, finding something useful for themselves, and struggling with ideas (Ates, Coban, Sengoren, 2018). Constructivistic approach is a learning process that explains how knowledge is structured in student thinking (Poonam, 2017).

Knowledge is actively developed by students themselves and is not passively accepted by people around them (Amineh & Davadgari, Asl, 2015). Learning like this relies on the meaningfulness that learning is the result of the student's own efforts and is not only transferred from the lecturer to the students (Bada & Olusegun, 2015). In constructive classrooms, students are empowered by knowledge within themselves (Schultz, 2015). They share strategies and solutions, debate with each other, think critically about how to best solve each problem (Dagar & Yadaf, 2016). In constructivist class, a lecturer does not teach students how to solve problems, but presents problems and encourages

students to find their own ways to solve problems (Major & Mulvihil, 2017). When students give answers, the lecturer tries not to say that the answer is correct or incorrect, but the lecturer encourages students to agree or disagree with one's ideas and exchange ideas until agreement is reached on what students can accept according to the correct scientific flow (Rhodes & Rozell, 2015).

Constructivistic approaches have the following principles: (1) knowledge is constructed from experience, (2) learning is a personal interpretation of the world, (3) learning is an active process in which meaning is developed on the basis of experience, (4) conceptual growth comes from negotiating meaning, dividing multiple perspectives, and changing internal representations through collaborative learning, (5) learning must be situated in realistic settings; testing must be integrated with the task and not a separate activity, (6) emphasis on the social nature of learning, namely students learn through interaction with lecturers or friends, (7) the closest development zone, namely learning a good concept is if the concept is close with students, (8) cognitive apprenticeship, namely students gain knowledge gradually in interacting with experts, and (9) mediated learning, which is given complex assignments, difficult, and reality then given assistance.

The rapid development of information and communication technology, especially the internet, has now made it easier and cheaper to manage information resources. This condition has implications for the increasing concern of many parties to the importance of providing knowledge resources that can be easily accessed by all people throughout the world. With web technology, a constructive approach can be created through the provision of various links to sources of information on the internet to provide opportunities for students to enter an environment that is in accordance with the courses they are currently participating in. Constructivistic learning approaches can be combined with the blended learning learning model. The combination of constructivist approaches and the blended learning learning model provides various instructional implications such as the necessity: the creation of an open-ended learning environment, the provision of multi-perspective support for every material students learn.

## 2. Method

This study aims to provide empirical evidence about the effectiveness of constructivism-based blended learning learning models in the Sutta Pitaka course. This research is an experiment conducted at Raden Wijaya State School of Religion. The research is carried out in semester 1 (one) Academic Year 2018/2019 for students of the Dharmacarya study program and the Dharmaduta study program. The sample of this study was all students of Raden Wijaya Wonogiri State Buddhist College, while the subjects of the research in this study were all Dharmacarya students and the Dharmaduta study program who took the Sutta Pitaka course. The composition of the research subject can be seen in Table 1 below:

**Table 1. Composition of Research Subjects**

| Research Subject Learning Model | Dharmacarya Study Program (A1) | Dharmaduta Study Program (A2) | total |
|---|---|---|---|
| Blended Learning | 29 | 27 | 56 |

After being determined by the subject of the study, the blended learning learning activities are then carried out. This study uses the Indonesian National Curriculum Framework (KKNI). Before the implementation of blended learning learning was carried out the pretest learning outcomes of the Sutta Pitaka course. Likewise, after the learning process has been carried out, the final test of the Sutta Pitaka course is given. Before the Sutta Pitaka study result test was used as a research instrument, the validity test and reliability test of the research instrument were first used using the SPSS 24 for Wondows program.

## 3. Results And Discussion

In order for the learning outcomes of the Sutta Pitaka course to get good results, the learning outcomes test of the Sutta Pitaka course is first tested for validity and reliability testing using the help of the SPSS 24 for Windows program. The validity and reliability of the items in the Sutta Pitaka subject matter are as follows: (1) Analysis of the validation and reliability of the items and the recapitulation of the competency indicators of the Sutta Pitaka subjects is 78 questions. The trial was applied to a sample of 20 respondents. From the trial it turns out that the correlation coefficients of all items with a total score of 3 questions are below 0.576, so there are 3 (three) items which are declared invalid, namely items number 14, 76, and 78. The rest of the statement items are declared valid. 2) Test the reliability of the items in the Civics course based on the analysis of reliability testing of two-part correlation (split half) which is analyzed by the Spearman Brown formula indicating that, instrument reliability = 0.9678. Because 0.9678> 0.576, then the items are stated to be reliable (reliable). The use of halved correlation is due to the Guttman scale instrument or dichotomy with the answers "Yes / No, or True / False". (3) Based on the trial of this instrument, it is valid and reliable for all the points, so the instrument can be used to measure the data collection for this development research.

At the stage of the implementation of the study, before the hypothesis testing is carried out, a prerequisite test for the analysis of learning outcomes data for the Sutta Pitaka subject is conducted by using the normality test and homogeneity test. Test the normality of the data using the normality test Shapiro Wilk with SPSS 24.0 For Windows. The basis for returning the decision in the Shapiro-Walk normality test if the value is significant> 0.05 then the data is normally distributed. The following are the results of the Normality test using SPSS for experimental group and control group data. Based on the following test results table both data are normal.

**Table 2. Normality Test Results (Tests of Normalit) using SPSS 24.0 For Windows**

| | Group | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|---|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| **Value** | Control | 29 | 100.0% | 0 | 0.0% | 29 | 100.0% |
| | Eksperiment | 27 | 100.0% | 0 | 0.0% | 27 | 100.0% |

*) This is a lower bound of the true significance
a) Lilliefors Significance Correction

Based on the output of the test of normality obtained a significance value for the experimental group 0.186 and for the control group 0.576 thus greater than 0.05 it was concluded that both experimental and control data were normally distributed.

**Table 3. Results of Two Variant Homogeneity Analysis Using SPSS 24.0 For Windows**

| | Levene's Test for Equality of Variances | |
|---|---|---|
| | F | Sig. |
| Equal variances assumed | 1.420 | 0.239 |

The data homogeneity test is carried out as a requirement in conducting the test learning model for the research developed. Test of homogeneity by using SPSS 24.0 For Windows on the basis of retrieval the decision if the significance value is p <0.05 => data is not homogeneous and if significance p> 0.05 => homogeneous data.

**Table 4 Statistical Test Results Using SPSS 24 For Windows**

Group Statistics

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Value | Eksperimen | 29 | 85.4372 | 2.48455 | .39118 |
| | Kontrol | 27 | 82.5011 | 2.10655 | .47815 |

Independent Samples Test

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | t | df | Sig. (2- tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | F | Sig. | | | | | | Lower | Lower |
| Equal variances assumed | 1,945 | 0,169 | z | 54 | .000 | 2.93613 | 0,61261 | 1,38773 | 3,84415 |
| Equal variances not assumed | | | 4.753 | 51.167 | .000 | 2.93613 | 0,61758 | 1,37532 | 3,85656 |

Based on the results of the levene's test for homogeneity tests (difference in variance) table 5.40. shows that F = 1, (p = 0.169) because p> 0.05, it can be said that there is no difference in variance in the experimental data and control data (equal / homogeneous data). Testing the effectiveness of constructivist-

based blended learning models in the Sutta Pitaka course was measured based on the average scores of the Sutta Pitaka test results shown in Table 4 below:
Based on the results of testing the statistics in Table 4. above, what has been done in the experimental and control groups shows that the average student learning outcomes of the experimental group are higher = 84.18 than the control group students with the average learning outcomes = 81.52. From the number of experimental group students n1 = 29 and the number of control group students n2 = 27. When viewed from the results of calculations regarding Standard Deviation (SD), the scores obtained by the experimental group = 2.02 < SD in the control group = 2.54. That is, that μ in the experimental group learning outcomes are more evenly distributed and homogeneous when compared to the control group.
The data above shows that the mean difference in the score of the learning outcomes of the experimental group and the control group is 2.61594. While the t-test that tests Ho: μ exp = μ control gives a value of t = 4.270 with a degree of freedom of 54. While the p-value for the two-tailed test (tailed test) is 0,000 which is smaller than μ = 0.05. This data proves that the statistic hypothesis Ho: μ exp = μ control is rejected.
So that it can be concluded that the mean score of the learning outcomes of the experimental group is not the same or significantly different. The results of this study indicate that there is a significant difference between the competencies of student learning outcomes in the experimental group and the control group. Based on the results of the above data analysis it can be concluded that the mean score of the learning outcomes of the experimental group and the control group is different, and the difference is significant, meaning that the constructivist-based blended learning model in the Sutta Pitaka course is effective, because learning outcomes produce learning outcomes that means for students of Raden Wijaya Wonogiri State Buddhist College.

## 4. Conclusion

There is the effectiveness of a constructivist based blended learning model in the Sutta Pitaka course for students of Raden Wijaya Wonogiri State Buddhist College. Based on the hypothesis test obtained scores on student learning outcomes of the Dharmaduta study program (as an experimental class) and students of the Dharmacarya study program (as a control class) of 2.61594. The t-test result data shows the value of t = 4.270 with a degree of freedom of 54 with a p-value for the two-tailed (test-tailed) test of 0.000 which is smaller than $\alpha = 0.05$.
This data shows that there are significant differences in student Sutta Pitaka learning outcomes in the experimental group with the control group. The use of constructivist-based blended learning model in the Sutta Pitaka course is beneficial for students of Raden Wijaya Wonogiri State Buddhist College.
The development of constructivist-based blended learning models in the Sutta Pitaka course can improve student learning independence which encourages student-centered learning that is not limited to space and time. The

development of constructivist-based blended learning models in the Sutta Pitaka course is still limited to Dharmacarya and Dharmaduta study programs.

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