The Effectiveness of Using Blended Learning Models Against Vocational Education Student Learning Motivation

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ABSTRACT

Blended learning is an approach to education that combines online education material and opportunities for online interaction with traditional place-based classroom methods. This requires the physical presence of both teacher and student, with some elements of student control over time, place, path, or speed. This study aims to find out how effectively the use of the Blended Learning model to the learning motivation of vocational education students. This research uses quantitative methods with Quasi experiment design. The design in this study used a one-group pretest-posttest with control group design, that is, a research design that contained pretests before being treated and posttests after being treated. The results of this study influence the effectiveness of the use of the blended learning model on vocational education student motivation, this is because the learning system using the blended learning model is more flexible and students feel helped by the internet as a source of learning.

Key words: blended learning model, learning motivation, vocational education students

1. INTRODUCTION

The world of education in the current era of globalization is required to prepare humans to show their superiority that is intelligent, creative, and independent. Quality education must include two dimensions, namely academic orientation, and essential skills orientation. Academic orientation focuses on students, while life skills orientation provides students with the provision to be able to survive in real life [1]. The learning system in higher education must be able to provide opportunities for students to increase and develop their potential optimally [2], [3]. What is also important to note is that the method used can stimulate students' potentials and talents, to cover the needs of students and the challenges of technological development. Such a situation encourages various institutions to utilize various systems approaches in learning strategies [4]. The approach taken by utilizing various types of media and technology to increase the effectiveness and flexibility of learning.

The learning process in the era of the development of information and communication technology (ICT) as it is now allowing the absence of teachers in the classroom. The learning process no longer depends on the teacher as the only source of learning, and can take place anytime and anywhere [1],[5]. The learning process is no longer only in the form of verbal communication between teacher and student. With the rapid development of ICT in the world of education, with the internet as an integral part in it, many educational institutions offer web-based learning, or what is often referred to as online learning or e-Learning [6], [7]. This type of learning naturally requires good and maximum management so that learning objectives can be achieved.

One of the media that can be used in the learning process is computer-based media in the form of the internet. With the internet students can access the desired material quickly. The learning process using internet-based media can be known as an e-Learning learning model. The electronic learning model is a new way of teaching and learning [8]. E-Learning is the basis and logical consequence of the development of information and communication technology. With

e-Learning, students do not need to sit sweetly in the classroom to listen to every greeting from a teacher directly. E-Learning can also shorten the target schedule of learning time, and of course save costs incurred by an educational program. E-Learning is a form of learning method that is perceived to be student centered. The use of e-learning is expected to motivate the improvement of the quality of education in Indonesia.

But in its implementation the use of e-learning cannot be fully realized because students are often unable to divide their time and utilize the information provided independently and the lack of knowledge about the use of e-learning itself and the strong influence of conventional methods for teachers. Based on the problems described above, an effort is needed to resolve the weaknesses of the conventional method and the e-learning system itself. Blended Learning Method is an appropriate alternative to be used in the learning process. Blended Learning Method is a combination of conventional learning models (face to face) with e-learning based learning models by utilizing electronic media [9]–[11]. That is, blended learning is a conventional learning model that is supported by learning models based on e-learning so that the learning process will run optimally because the advantages of the two models will be able to complement each other from the shortcomings of the two learning models. With the blended learning method, teachers and students gradually adapt to the advancement of educational technology but are still supported by the usual method of doing face-to-face. As explained earlier, in the blended learning method there are two main components, namely teaching in the conventional way (face to face) and through e-learning media [12], [13]. Blended Learning departs from the strengths found in traditional learning methods, so that blended learning aims to combine e-learning with the strengths that exist in traditional learning. In practical language, the blended learning method offers the possibility to benefit from a class that supports direct interaction and flexibility from online learning as well as using instructional media.

2. LITERATURE REVIEW

In etymology the term blended learning consists of two words namely blended and learning. The word blend means "mixture, together to improve quality so that it gets better" (Collins Dictionary), or the formula of a combination of harmony or combination (Oxford English Dictionary). While learning has a general meaning, namely learning, thereby cursing meaningful learning patterns that contain elements of mixing or merging between one pattern with another pattern. Elenena (2006) said that what was mixed were two main elements, namely classroom learning with online learning. Driscoll in Rusman argues "Blended learning integrates or blends learning programs in different formats to achieve a common goal", which can be interpreted as blended learning integrating or combining learning programs in different formats in achieving general goals [14].

According to Rusman states blended learning is a combination of various approaches in learning. So, it can be stated that blended learning 36 is a learning method that combines two or more methods of approach in learning to achieve the objectives of the learning process. One example is the combination of the use of web-based learning and the use of face-to-face methods that are carried out simultaneously in learning [15]. Blended course as a combination of onsite (i.e face-to-face) with online experiences to produce effective, efficient, and flexible learning". From this definition it is said that blended learning as a combination of conventional learning (face to face) with online experience to produce effective, efficient, and flexible learning. Blended learning can combine the positive aspects of two learning environments, namely learning done in the classroom with learning with e-learning [16], [17].

Motivation to learn as an impulse that changes the energy in a person into the form of real activities to achieve certain goals. In other words, motivation is a psychological condition that drives a person to do something. While learning motivation is a psychological condition that drives a person to learn [18], [19]. Learning motivation can be interpreted as energy and direction towards behavior which includes needs, interests, attitudes, values, aspirations, and stimulants. Needs and encouragement to satisfy needs can be the main source of learning motivation. The need for knowledge, understanding of material and self-motivation to achieve the goals of achievement are the main provisions of students to have a strong learning motivation [20].

3. LITERATURE REVIEW
3.1 Design Research

This study aims to determine whether there is an effect of the effectiveness of the use of the blended learning model on the motivation of inclusive education students. This research uses quantitative methods with Quasi experiment design. The design in this study used the design of one group pretest-posttest with control group design, namely the research design that contained pretest before being given treatment and posttest after being treated [21]. Thus, it can be known more accurately, because it can be compared with held before being treated. Implementation of the design of one group pretest-posttest with control group design is done twice, namely before the experiment (O1) is called a pretest, and after the experiment (O2) is called the posttest as for the constellation seen in the following table:

Table 1: Constellation of One Group Pretest-Posttest with Control Group Design

Pretest	treatment	Posttest
O1	X	O2

Information:
O1 = pretest value (before treatment)
O2 = posttest value (after treatment)
 X = treatment (group counseling)

3.2 Respondents

Respondents in this study were early grade students in private elementary schools in south Jakarta, while the number of respondents in this study were 40 students with different characteristics of the selection of respondents using the technique of probability sampling is a technique that takes samples that provide equal opportunities for each of which has no members.

3.3 Instrument
The instrument used in this study was a blended learning model towards vocational education student motivation. then the blended learning tools used are semester learning plans, student worksheets about practice, handouts, and online learning classes.

3.4 Data Analysis Technique
Data analysis technique in this research is by means of the data obtained from this study followed by managing the data and then drawing conclusions using statistical parameters. Hypothesis testing uses Paired Samples Test t-test with the help of SPSS 24, which compares the mean between Pretest and Posttest. If the value of t count is smaller than t table, then Ha is rejected, if t count is greater than t table then Ha is accepted.

4. RESULT

The results of the analysis in this study were to find out how effective the use of blended learning models on vocational education student motivation. As can be explained as follows:

Table 2: Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pretest	66.85	40	7.026	1.111
Posttest	77.58	40	7.729	1.222

Based on the calculation in the Paired Samples Statistics table above, the average value before using blended learning was 66.85 and after being given treatment using blended learning with Moodle increased, it obtained an average value of 77.58.

This means that there were descriptive differences in the mean average before and after the application of the use of blended learning models to the motivation of vocational education students.

Table 3: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	40	.267	.095

In the Paired Samples Correlations table above, the correlation coefficient obtained from the analysis of the blended learning model learning results in vocational education student motivation. before and after being treated using a blended learning model using a blended learning model to the motivation of vocational education students. of 267 with a sig number, or p-value = 0.095 ≥ 0.05 or not significant.

Table 3: Paired Samples Test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-10.725	8.947	1.415	-13.586	-7.864	-7.581	39	.000

In the table above obtained a mean difference of -10,725, which means the difference in the results of the use of the blended learning model of learning to motivate students of vocational education. Positive prices are meaningful after being treated using learning models of blended learning to the motivation of vocational education students. Prices are higher than before being treated. Furthermore, in this table also obtained the mean error standard which shows the standard error rate of the average difference. Furthermore, the most important result of this table is the statistical price of t = -7.581 with df 39 and significant figures. Or the p-value 0,000 <0.05 or H0 is rejected. Thus, it can be concluded that there are significant differences in results between before using the blended learning model of learning towards vocational education student motivation.

5. DISCUSSION

Based on the findings of this study, there is an effective influence on the use of blended learning models on vocational education student motivation. This is in line with research conducted by Bervel, Blended learning is used to describe a learning situation that combines several delivery methods that aim to provide experience the most effective and efficient [22]. The intended combination can be a combination of several kinds of teaching technology, for example video, CD-ROM, film, or internet with face-to-face teaching (face to face) conducted by lecturers / educators [23]. From a course design perspective, this type of blended teaching can be between fully face-to-face teaching and on-line learning. 3C framework for teachers who want to design blended learning, which includes content (learning material content), communication (communication between students and teachers and students themselves). And construction (the creation of mental states of learners to help map their position in the learning landscape) [24]. From the perspective of the teacher and in the world of education, the blended e-learning approach requires new skills so that learners can absorb as much of the lessons as possible. A successful blended e-learning environment consists of one initial face-to-face meeting, weekly online assignments accompanied by online (e-mail) consultation and closes with one final exam in the form of face-to-face or exams write in the classroom with the help of supervisors. Learning that combines a variety of ways of delivery, teaching models, learning styles, as well as a variety of diverse technology-based media. As a combination of direct teaching (face to face), independent learning, and independent learning via online [25]. Learning is supported by an effective combination of delivery methods, teaching methods, and learning styles. Teachers and parents of learning participants have the same important role, teachers as facilitators, and parents as supporters. While there are two main categories in blended learning, which can increase the form of face-to-face activities (lectures) [26], [27]. Many teachers use the term 'blended learning' to refer to the use of

information and communication technology in face-to-face activities, both in forms that utilize the internet (web-dependent) or as a supplement (web-supplemented) that do not change the activity model.

6. CONCLUSION

Blended learning is a mixture of online learning models with face-to-face learning at a low cost, but an effective way to transmit knowledge in a globalized world. The blended learning model program includes several forms of learning tools, such as real-time collaboration software, online web-based programs, and electronics that support system performance in the task of learning environment, and knowledge management systems. The Blended learning model contains a variety of activities, including face-to-face learning, e-learning, and independent learning activities. Blended learning as a mixed model of traditional instructor-led learning, synchronous online learning, independent learning with asynchronous, and task-based structured training from a lecturer or mentor. The purpose of blended learning is to combine face-to-face classroom learning experiences with online learning experiences.

REFERENCES

1. C. Tamte, A. B. Enochsson, U. Buskqvist, and A. Kårstein, **Educating online student teachers to master professional digital competence: The TPACK-framework goes online**, *Comput. Educ.*, vol. 84, no. 1, pp. 26–35, 2015.
2. T. Lucke, P. K. Dunn, and M. Christie, **Activating learning in engineering education using ICT and the concept of 'Flipping the classroom**, *Eur. J. Eng. Educ.*, vol. 42, no. 1, pp. 45–57, Jan. 2017.
3. M. S. Sumantri and R. Rachmadtullah, **The effect of learning media and self regulation to elementary students' history learning outcome**, *Adv. Sci. Lett.*, vol. 22, no. 12, pp. 4104–4108, 2016.
4. M. A. Almulla, **Social media use for educational purposes: Systematic Literature Review in higher education of Middle East Countries (MEC)**, *Int. J. Adv. Trends Comput. Sci. Eng.*, vol. 9, no. 2, pp. 1935–1944, Apr. 2020, doi: 10.30534/ijatcse/2020/159922020.
5. R. J. Krumsvik, Situated **learning and teachers digital competence**, *Educ. Inf. Technol.*, vol. 13, no. 4, pp. 279–290, 2008.
6. R. Susanto, R. Rachmadtullah, and W. Rachbini, **Technological and Pedagogical Models: Analysis of Factors and Measurement of Learning Outcomes in Education**, *J. Ethn. Cult. Stud.*, vol. 7, no. 2, p. 1, Jun. 2020.
7. S. E. Sergis, **From Teachers' to Schools' ICT Competence Profiles**, *Digit. Syst. Open Access to Form. Informal Learn.*, no. July, pp. 307–327, 2014.

8. A. O. Alsadhan, S. Alhomod, and M. M. Shafi, **Multimedia Based E-learning : Design and Integration of Multimedia Content in E-learning**, *Int. J. Emerg. Technol. Learn.*, vol. 9, no. 3, p. 26, May 2014.

9. R. Rachmadtullah *et al.*, **Use of blended learning with moodle: Study effectiveness in elementary school teacher education students during the COVID-19 pandemic**, *Int. J. Adv. Sci. Technol.*, vol. 29, no. 7, 2020.

10. R. Rasmitadila, W. Widyasari, M. A. Humaira, A. R. S. Tambunan, R. Rachmadtullah, and A. Samsudin, **Using Blended Learning Approach (BLA) in Inclusive Education Course: A Study Investigating Teacher Students' Perception**, *Int. J. Emerg. Technol. Learn.*, vol. 15, no. 02, p. 72, Jan. 2020.

11. R. Rasmitadila *et al.*, **The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia,** *J. Ethn. Cult. Stud.*, vol. 7, no. 2, p. 90, Jul. 2020.

12. Widyasari, Rasmitadila, M. Asri Humaira, R. Rusmiati Aliyyah, A. Abdul Gaffar, and R. Rachmadtullah, **Preliminary study on the development of blended learning (BLM) model: Based on needs analysis and learning independence**, in *Journal of Physics: Conference Series*, 2019, vol. 1175, no. 1.

13. H. Arshad, **Integrating Interactive Multimedia Elements to Increase Melioidosis Awareness**, *Int. J. Adv. Trends Comput. Sci. Eng.*, vol. 9, no. 3, pp. 4037–4042, Jun. 2020, doi: 10.30534/ijatcse/2020/229932020.

14. C. Riyana, **Peningkatan Kompetensi Pedagogis Guru melalui Penerapan Model Education Centre of Teacher Interactive Virtual (Educative)**, vol. 11, no. 1, pp. 50–65, 2010.

15. Rusman, *Model-Model Pembelajaran*. Raja Grafindo Persada, 2012.

16. W. Yu and X. Du, **Implementation of a Blended Learning Model in Content- Based EFL Curriculum**, *Int. J. Emerg. Technol. Learn.*, vol. 14, no. 05, p. 188, Mar. 2019.

17. W. Banyen, C. Viriyavejakul, and T. Ratanaolarn, **A Blended Learning Model for Learning Achievement Enhancement of Thai Undergraduate Students,** *Int. J. Emerg. Technol. Learn.*, vol. 11, no. 04, p. 48, Apr. 2016.

18. Rasmitadila *et al.*, **Model of instructional strategy based on the brain's natural learning system in inclusive classrooms: Special teacher perceptions,** *Int. J. Adv. Sci. Technol.*, vol. 29, no. 7, 2020.

19. Z. Arifin, M. Nurtanto, A. Priatna, N. Kholifah, and M. Fawaid, Technology Andragogy Work **Content Knowledge Model as a New Framework in Vocational Education: Revised Technology Pedagogy Content Knowledge Model**, *TEM Journal*, vol. 9, no. 2, pp. 786–791, May 2020, doi: 10.18421/TEM92-48.

20. T. Sulastri, **Hubungan motivasi berprestasi dan disiplin dengan kinerja dosen**, *J. Optim.*, vol. 1, no. 1, pp. 13–21, 2007.

21. J. W. Creswell, **Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Reseach**. New Jersey: Pearson, 2008.

22. B. Bervell and I. N. Umar, **Blended learning or face-to-face? Does Tutor anxiety prevent the adoption of Learning Management Systems for distance education in Ghana?**, *Open Learn. J. Open, Distance e-Learning*, pp. 1–19, Nov. 2018.

23. M. Oliver and K. Trigwell, **Can 'Blended Learning' Be Redeemed?**, *E-Learning Digit. Media*, vol. 2, no. 1, pp. 17–26, Mar. 2005.

24. A. Al-Azawei, P. Parslow, and K. Lundqvist, **Investigating the effect of learning styles in a blended e-learning system: An extension of the technology acceptance model (TAM)**, *Australas. J. Educ. Technol.*, Nov. 2016.

25. D. D. Curtis and M. J. Lawson, **Exploring collaborative online learning**, *J. Asynchronous Learn. Netw.*, vol. 5, no. 1, pp. 21–34, 2001.

26. V. Munro *et al.*, **E-learning for self-management support: introducing blended learning for graduate students – a cohort study**, *BMC Med. Educ.*, vol. 18, no. 1, p. 219, Dec. 2018.

27. R. Rabiman, M. Nurtanto, and N. Kholifah, **Design and development E-learning system by learning management system (Lms) in vocational education**, *International Journal of Scientific and Technology Research*, vol. 9, no. 1, pp. 1059–1063, 2020.