

THE INFLUENCE OF BLENDED LEARNING ON LEARNING OUTCOMES

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Abstract

Blended learning is one of learning methods that combines learning technology with actual work assignments to create a positive impact on learning and work which means 50% face-to-face learning and 50% online learning, it can also use 75/25 that we can use 75% face-to-face learning and 25% online learning from time allocation, and also it can combine 25/75 means 25% face-to-face learning and 75% online learning. This research used an experimental method of quasi-experimental pretest-posttest none-evaluative control group design. The sample in this research was 21 respondents divided into 2 classes namely the experimental class and the control class The experimental class uses blended learning while the control class uses conventional learning . based on the results of the paired sample T test sig value (2 tailed) $0,000 < 0,005$, it can be concluded that there is the effect of blended learning on learning outcomes While the results of the independent sample T test $0,000 < 0,005$ then there is a difference between blended learning with conventional learning with an average blended learning of 83,76 while conventional learning is 77,67 then showing blended learning is more effective or greater influence than conventional learning.

Keywords : Blended Learning, Online Learning, Face to Face

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INTRODUCTION

Blended gaining knowledge of is an strive to make use of technological and communicate advances in enhancing the first-rate of gaining knowledge of. It offers vast effect via the training and gaining knowledge of change, a number of gaining knowledge of technology undertake and adapt this modern-day findings withinside the gaining knowledge of process. as quoted through Akkoyunlu and Soylu (2008) bringing up that the gadget Blended gaining knowledge of is a gaining knowledge of that mixes using e-gaining knowledge of with numerous useful factors of conventional methods, together with face-to-face interactions. Blended gaining knowledge of brings collectively conventional gaining knowledge of with the factors of shared digital training¹

According to Blended Learning, Blended Learning is learning that combines or incorporates various web-based technologies to achieve educational goals. b). Blended Learning is a combination of various learning approaches (such as behaviourism, constructivism, cognitivism) to produce optimal learning achievements with or without learning technology. c). Blended Learning is also a combination of many learning technology formats, such as (Video tape, CD-ROM, Web Based Training, film) with face-to-face learning. d). Blended Learning combines learning technology with actual work assignments to create a positive impact on learning and work.²

One of the main benefits of blended learning is time flexibility. Students can access course materials online and study in their free time, without having to consider a fixed lecture schedule. Online learning also allows students to study course material at their own pace and review material if necessary. Apart from that, blended learning also provides opportunities for social

¹ Torre, J. (2013). *Variances on Students' Blended Learning Perception According to Learning Style Preferences*, Journal of Education and Practice, 4(20), 160–168. Retrieved from <http://iiste.org/Journals/index.php/JEP/article/view/7914>

² Walne, M. B, *Emerging blended-learning models and school profile*, Houston: Community Foundation,, 2012, . Retrieved from www.edustart.org.

interaction and discussion with lecturers and fellow students in face-to-face classes. This face-to-face interaction allows students to participate in deeper discussions, ask questions directly to the lecturer, and interact with fellow students in collaborative learning. This helps improve student understanding and engagement in learning. Blended learning also allows educational institutions to adapt their curriculum to student needs. With a combination of online and face-to-face learning, institutions can offer more choices and be more flexible in how students learn the material. This allows students to choose a learning path that better suits their learning style and needs.³

Historically, educators made some changes in face-to-face learning by utilizing the computer-based learning media, namely the mixing learning between face-to-face learning, offline and online learning (Graham, 2006). Face-to-face learning is also called by conventional learning which are students and teachers do the learning process in the classroom. However the online learning must be connected to the internet network, on the other hand offline learning does not have to be connected to the internet network.⁴

Thorne in Husamah added that blended learning is a combination of multimedia technology, video streaming, CD rooms, voice mail, virtual classes, e-mail, websites, online text animation, and teleconference. Those are combined with the traditional form of classroom training and individual training. In this case blended learning is an appropriate solution for the learning process that is appropriate not only with learning needs but also learning styles of students.⁵

In determining the composition there is no limit, but Wasis (2018) states that the composition of blended learning in the implementation of learning

³ Krismadinata, U. V., Jalinus, N., Rizal, F., Sukardi, P. S., Ramadhani, D., Lubis, A. L., ... & Novaliendry, D, *Blended learning as instructional model in vocational education: literature review*. Universal Journal of Educational Research, 8(11B), (2020), 5801-5815

⁴ Keguruan, S. F., Pendidikan, I., Mulawarman, U., & No, B, *Pengaruh Strategi Pembelajaran Blended Learning Terhadap Perolehan Belajar Konsep Dan Prosedur Pada Mahasiswa Yang Memiliki Self-Regulated Learning Berbeda*, Jurnal Pendidikan Dan Pembelajaran, (2014), 21(3), 107–117.

⁵ Rizkiyah, *Penerapan Blended Learning Untuk Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran Ilmu Bangunan Di Kelas X Tgb SMK Negeri 7 Surabaya*, 2015, 1, 40–49

with a composition of patterns 50/50, in the available time allocation so 50% face to face 50% online learning, can also use 75/25, meaning 75 % face-to-face meetings while 25% use online learning, can also be 25/75, which is 25% using face-to-face learning 75% allocated to online learning.

Blended learning in its application does not just happen. rather, firstly the teacher considers the characteristics and objectives of the learning we want to achieve, and the activities of the suitable learning process and selects or determines which learning activities are compatible with the conventional and which activities are relevant for online learning.⁶

The application of blended learning is one of the goals, namely to optimize student learning outcomes. The results of learning are changes in behavior after students have done the learning process and if students did not know then they became aware and initially the student did not understand then they would understand what was learned.⁷

Osguthorpe and Graham explained that considering implementing blended learning is to compensate for the weaknesses of face-to-face learning or E-learning learning so that mutual communication / interaction between students and instructors and online learning could not be found in face-to-face learning. It is also known that face-to-face learning still needs online learning with a variety of applications developed by education practitioners such as edmodo, boxes, google classroom and offline or online questions applications.⁸

Blended learning still adapts learning and development to the individual needs of students and offers innovative learning and the technology offered namely online learning combined with conventional learning Blended

⁶ Prasetyo, M. P, dkk, *Perancangan dan Implementasi Content Pembelajaran Online Dengan Metode Blended Learning*, . (1997). 1–7

⁷ Sjukur, S. B, *Hasil Belajar Siswa Tingkat SMK The Effects Of Blended Learning On The Learning Abstract : The Effects of Blended Learning on the Learning Motivation and Achievement Students in. Jurnal Pendidikan Vokasi*, 2(November 2012), 368–378

⁸ Riad, N. A., Saadat, M. F. M., & Badawy, A. I, *Effect of Blended Learning Approach on Student Nurses ' Attitudes and Academic Achievement*, 4(24), . (2013), 152–160

learning is a mixture of: multimedia technology; Streaming CD ROM videos; virtual classrooms; voicemail, e-mail and conference calls; online text animation and video streaming. All of this is combined with other forms of traditional learning.⁹

Blended learning is a new learning technique that utilizes online-based technology. Blended learning also changes the learning system, which during this time the teacher masters learning or the teacher center with the existence of blended learning provides opportunities for students to be active in the learning process. blended learning makes learning more effective, structured and students is more active. The use of blended learning can effectively make students think more critically and creatively.¹⁰

Robert Hogan `describes combined studying from the factor of view of a growing nation, Fiji. That is, the bankruptcy describes how combined studying, which has modified the coaching and studying system in evolved countries, has just started to unfold in growing countries, arguing that the progressed Internet get right of entry to has enabled students to be a part of the combined revolution and has created a brand new marketplace for universities to provide combined packages in Asia, Africa, and the Pacific. In particular, the bankruptcy outlines academic design, cultural considerations, technical issues, and preliminary findings from supplying combined studying courses: an undergraduate path in Chemistry and a graduate path for teachers.¹¹

Blended learning is a combination of several different learning media, namely technology, activities, and several types of events to form optimal and interesting learning designs for specific students. The term blended learning is also referred to as conventional learning which is supported by electronic

⁹ Wahyuni, S, *The Effect of Blended Learning Model towards Students' Writing Ability. Journal of English for Academic*, 5(2), (2018), 97. [https://doi.org/10.25299/jshmic.2018.vol5\(2\).1801](https://doi.org/10.25299/jshmic.2018.vol5(2).1801)

¹⁰ Atia, S., & Elsaid, M, *Blended Learning Based on Creative Approach : Enhancing The Mutual Impact of Creativity , Intrinsic Motivation and Achievement in Academic Computer Courses*, 1735(16), (2000). 53–65.

¹¹ Kitchenham, *Blended Learning across Disciplines: Models for Implementation*, . (2011),

formats or other technology. Learning Blended learning that uses various types of e-learning, perhaps combined with instructor-centered training and other hands-on formats. Purtadi also mentioned that Blended learning is a type of learning that is effective and applied in a coordinated way to achieve the desired learning goals.¹²

Blended learning, also known as hybrid learning, is in great demand among students and online learning is carried out before face-to-face so that students can prepare what they want to learn and be taught by the teacher. Learners can develop their knowledge by accessing material that has been posted on the teacher's website or can access other links with related material. Blended learning is a learning collaboration between face-to-face learning which relies on direct interaction between teachers and students in the classroom with online learning by utilizing e-learning ports, blogs, websites, social networks which aims to facilitate communication between teachers and students by conducting discussions or chatting, Students can also upload and send assignments given via social media, teachers can also edit writings or answers by giving replies to students and can give direct grades or personal comments to students regarding the answers given.¹³

Blended learning is a learning design that is spreading rapidly in education throughout the world. The concept is considered an interesting learning because it uses traditional learning concepts integrated with new technology. Many studies have been conducted regarding the use of technology which is very supportive of improving learning outcomes. Blended learning combines various elements of face-to-face teaching including personalized learning, social interaction and direct interaction and also the use of e-learning makes learning more flexible than conventional learning. The application of blended learning in the classroom is not only an online

¹² Fleck, J, *Blended learning and learning communities: opportunities and challenges. Journal of Management Development*, 31(4), 2012. 398-411

¹³ Dakhi, O., JAMA, J., & IRFAN, D, *Blended learning: a 21st century learning model at college. International Journal Of Multi Science*, 1(08), 2020, 50-65

implementation but integrates content into learning. Blended Learning is a learning system that combines face-to-face learning with internet-based training, utilizing the internet network as a supporting tool in implementing learning. The implementation of online classes in training or learning can be carried out from 30 to 79%, which allows participants to work together in the educational process. Blended learning is recognized as training inclusive by 30 to 79%.¹⁴

Blended learning is a learning approach with various types of techniques and technology in learning which aims to provide a more effective and efficient learning experience. Blended learning can usually contain two or more learning techniques with different approaches. However, nowadays most of the designs are based on online learning. In this blended learning design, it is possible for teachers to combine face-to-face learning with online learning, making students able to interact directly with teachers or students with students without limited space and time. Also of opinion regarding Blended learning as a learning model that combines various learning models, namely combining face-to-face learning with learning. distance and the use of information and communication technology, added by Singh and Reed that Blended learning is a learning program that includes various learning models to produce interesting and efficient learning. And Validating defines Blended learning as software collaboration, web-based learning, a combination of all types of educational technology and face-to-face education led by teachers.¹⁵

Blended Learning design on these studies use 25 % on-line and 75% face to face. Learning process makes use of generation media this is e-book (Epub application), YouTube as academic lesson or subject, and to assess the mastering with the aid of using the usage of on-line exam. The researcher attempts the lesson plan of the combined mastering 4 instances each meeting.

¹⁴ Kaur, M, *Blended learning-its challenges and future*, Procedia-social and behavioral sciences, 2013, 93, 612-617

¹⁵ Norberg, A., Dziuban, C. D., & Moskal, P. D, *A time-based blended learning model*, On the Horizon, 19(3), 2011, 207-216.

While the conventional mastering makes use of speech technique with electricity factor as manipulate class. The reason of the look at is to decide whether or not there may be an impact of combined mastering on mastering consequences and whether or not there may be differences the usage of combined mastering and conventional mastering.

METHODOLOGY

This research is an experimental research which aims to examine the effect of independent variables on the dependent variable. This research is an experimental research that is the quasi experiment pretest-posttest non-equivalent control group design. This research is generally based on the belief that facts and feelings can be separated and the field of study is a single reality in the form of facts that can be known in pseudo-experimental research, researchers did not choose randomly to determine the subjects involved in the treatment.

The variables in this study are free variables, namely blended learning and conventional learning while the dependent variable is learning outcomes. The researcher tested blended learning in the experimental class while the control class used conventional learning. The subject of this research is the class X MA Nurus Salam students. Class X consists of 42 students by the researchers made into two classes, namely as the experimental class and as a control class each consists of 21 students. To analysis data uses SPSS application version 21.0

The data analysis techniques in this study are stages1. Descriptive analysis

1. Descriptive analysis
2. Test for normality
3. Test paired sample t test
4. Test of homogeneity
5. Test the independent sample test.

The stages of research are:

1. Giving pretest to the experimental class and the control class,

2. Conduct learning activities using the blended learning strategy with face-to-face / conventional learning
3. Make observations and
4. Make a post.

FINDING AND DISCUSSION

The following are the results of data analysis which will be presented as follows

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
experiment pre-test	21	65	78	71,52	4,020
experiment post-test	21	78	90	83,76	3,604
control pre-test	21	65	78	71,81	4,297
control post test	21	75	80	77,67	2,058
Valid N (listwise)	21				

The Result of Tests of Normality

Tests of Normality

	Class	Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
learning outcome	experiment pre-test	,162	21	,157	,904	21	,042
	experiment post-test	,233	21	,004	,887	21	,020
	control pre-test	,171	21	,110	,902	21	,039
	control post test	,236	21	,003	,803	21	,001

a. Lilliefors Significance Correction

Based on the results of the normality test showing the output of the significance value (sig) for all data, either kolmogorav-smirnov or shapiro-wilk > 0.05, it can be concluded that the research data is normally distributed.

Because the data shown are normally distributed then we can use parametric statistics (paired sample t test and test independent sample T test) to conduct research data. The results of the paired sample t test can be shown below.

		Paired Differences				t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	experiment pre-test - experiment post-test	-12,238	5,603	1,223	-14,788	-9,688	-10,010	,000
	control pre-test - control post test	-5,857	4,912	1,072	-8,093	-3,621	-5,464	,000

Based on the above output results can be interpreted that pair 1 obtained a significant value of $0,000 < 0,05$, it can be concluded that there are differences in the average student learning outcomes for the pre-test class experiment with the control class test post. The par 2 obtained a significant value of $0,000 < 0,005$, it can be concluded that there is a difference in the average student learning outcomes for the pre-test class of the control class with the control class post test. Based on these results, it can be concluded that there is an influence of blended learning on student learning outcomes in English. To find out how much influence blended learning has on student learning outcomes can be seen in the descriptive data below.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	experiment pre-test	71,52	21	4,020	,877
	experiment post-test	83,76	21	3,604	,787
Pair 2	control pre-test	71,81	21	4,297	,938
	control post test	77,67	21	2,058	,449

Based on the above data it can be concluded that the average value of the experimental pre-test was 71.52 while the average value of the experimental test post 83.76 showed that there was an increase in learning outcomes so it could be concluded that blended learning could improve student learning outcomes.

The result of Test of Homogeneity of Variance

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Outcome	Based on Mean	8,388	1	40	,006
	Based on Median	3,989	1	40	,053
	Based on Median and with adjusted df	3,989	1	29,001	,055
	Based on trimmed mean	8,604	1	40	,006

Based on the results of the above output, the significance value (sig) is based on mean of $0.006 > 0.05$, it can be concluded that the post test class experimental variance and control class test post are the same or homogeneous, therefore the T test test requirements have been met.

The Result of Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Outcome	Equal variances assumed	8,388	,006	6,7	40	,000	6,095	,906	4,265	7,926

Equal variances not assumed	6,730	31,784	,000	6,095	,906	4,250	7,940
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Based on the results of the independent test sample as shown in the above output shows the value of sig (2-tailed) $0,000 < 0,05$, there is a difference in the average student learning outcomes between using blended learning using conventional learning. As for knowing how big the difference between blended learning learning outcomes with conventional learning is as follows descriptive data.

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Outcome	experiment post test	21	83,76	3,604	,787
	control post test	21	77,67	2,058	,449

From these data shows the results of the average experimental class learning outcomes 83.76 while the control class 77.67. Then it can be concluded that blended learning is more effective and efficient than conventional learning.

CONCLUSIONS

Based on the results of the data analysis above, it can be interpreted that there are differences in the average student learning outcomes for the class using blended learning with those using conventional learning. Based on these results, it can be interpreted that there is the influence of blended learning on student learning outcomes in English. And the effect is very much evidenced by the average yield of 83.76. There are differences in blended learning learning outcomes with results of 83.76 while conventional learning is 77.67 so it can be interpreted that blended learning is more efficient and effective than conventional learning.

Learning is more effective than conventional learning, as is also done at Moscow State University, in that the implementation of blended learning supports students' abilities and professionalism. This is also done by

implementing blended learning using face-to-face and online/offline concepts, resulting in more effective learning and making students appreciate the strategies used more. Blended learning is important to apply to learning. From this explanation it can be shown that the use of learning strategies is very important to get optimal results.¹⁶

Blended learning has several advantages compared to conventional learning. One of the advantages of blended learning is that it is easy to adapt to students' needs. Adaptation comes from the various ways online resources can be used. The most important component of blended learning is the flexible learning system. If the teacher notices problems that students have during learning, he can immediately solve these problems by changing learning materials and activities. The individual needs of the learner must be taken into consideration, otherwise even a well-designed course can fail. If the course is flexible, it contributes to increasing the motivation of learners. Another benefit is that students who are involved in learning planning can successfully develop creative and critical thinking. In addition, blended learning allows students to be independent, while learning outside the classroom at any time when students want to learn material. Independent learning provides constant feedback without the help of a teacher. Students can easily find their results and see their progress. So the teacher's role changes from that of a facilitator who helps monitor and assess learner progress, giving them the opportunity to learn independently.¹⁷

There are many advantages to using blended learning for learners, administrators, and instructors. It is a promising method for future education programs and brings benefits to students, administrators, and educators as it can save costs in educational infrastructure. In addition, learners can be more active in the learning process. Graham also combines various learning

¹⁶ Singh, H, *Building effective blended learning programs*, In Challenges and opportunities for the global implementation of e-learning frameworks, IGI Global , 2021, 15-23.

¹⁷ Al-Marouf, R., Al-Qaysi, N., Salloum, S. A., & Al-Emran, M, *Blended learning acceptance: A systematic review of information systems models*, Technology, Knowledge and Learning, 2021, 1-36

materials in blended learning, such as online systems, where materials can be presented before and after face-to-face learning sessions. Learning materials can be presented online or through conventional methods.¹⁸

Blended learning is a combination of online learning which aims to create independent and flexible active learning, helping educators and students to develop better in the teaching and learning process, providing students with multimedia content that is rich in knowledge at any time, and anywhere during the learning process. educators have internet access. The advantages of Blended Learning are that students are free to study subject matter independently, utilizing materials available online, and learning activities carried out by students outside of face-to-face hours can be properly administered and controlled by the teacher. Meanwhile, the shortcomings in blended learning cause various problems, especially for teachers, one of which is that teachers need to prepare digital references that students can refer to.¹⁹

Although blended learning offers many benefits, this learning method also faces a number of challenges. One of the biggest challenges is managing online and face-to-face learning in a balanced and effective way. Lecturers and instructors must ensure that online and face-to-face learning complement each other, and do not overlap or reduce each other's effectiveness. Apart from that, lecturers and instructors must also consider the best ways to build interaction and communication with students in online learning environments, such as discussion forums and chat rooms.²⁰

¹⁸ Graham, C. R, *Emerging practice and research in blended learning*, Handbook of distance education 3, 2013, 333-350

¹⁹ Precel, K., Eshet-Alkalai, Y., & Alberton, Y, *Pedagogical and design aspects of a blended learning course*, International Review of Research in Open and Distributed Learning, 2009, 10

²⁰ Masie, E, *The blended learning imperative*, The handbook of blended learning: Global perspectives, local designs, 2006, 22-26

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