Naeklan EB MP.pdf

by

Submission date: 09-Feb-2020 10:11PM (UTC-0600)
Submission ID: 1254455796
File name: Naeklan EB MP.pdf (2M)
Word count: 3240
Character count: 18487

ATLANTIS PRESS

Advances in Social Science, Education and Humanities Research, volume 384

4th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019)

ICT-Based English Learning Innovationto Improve Learning Outcomes of PGSD Students

Naeklan Simbolon
Faculty of Education, Department of Teachers' College
Unimed
Medan, Indonesia
Email : naeklan@unimed.ac.id

Eva Betty Simanjuntak
Faculty of Education, Department of Teachers' College
Unimed
Medan, Indonesia

Mariati Purnama Simanjuntak
Faculty of Education, Department of Teachers' College
Unimed
Medan, Indonesia

***Abstract*— This study aims to find the effect of ICT-based learning on English and to find out the percentage increase in English learning outcomes in PGSD students. This research method is quasi experimental with pretest post-test control group design. Where sample of this research was taken by using cluster random sampling method. The research population is all PGSD students who enrolled in English courses consisting of nine classes, totaling 311 people. The research sample consisted of two classes, one class applying ICT-based learning and another class using conventional learning, each class has 38 students. The average pretest of the experimental class was 39.41 and the control class was 41.25. Based on the results of the t-test obtained the initial English ability of the two classes the same. The average posttest experimental class is 75.86 and the control class is 66.38. Based on the results of the t-test obtained English learning outcomes of the two classes are significantly different, in other words there is an influence of the application of ICT-based learning on English learning outcomes. Based on the normalized gain obtained an increase in the percentage of English learning outcomes for the experimental class by 60% and the control class by 43%, respectively in the medium category.**

Keywords—ICT; learning outcomes; English; Integrated English

I. INTRODUCTION

The rapid development of communication and information technology has influenced various aspects of human life. In education, technological developments greatly affect learning outcomes. In the learning process at the at University, lecturers as one of human resources certainly determine an important role in the success and effectiveness of the learning process. The success of a lecturer in delivering a learning material is not only influenced by his ability to master the material to be delivered. However, there are other factors that must be mastered so that he is able to deliver the material professionally and effectively, one of his abilities in using learning media, especially information and communication technology (ICT) or known as Information, Communication and Technology (ICT). ICT is defined as a set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. This technology includes computers, internet, broadcasting technology (radio and television), and telephone [1].

The breakthrough in ICT has brought new opportunities to restructure language learning settings. At present, ICT has opened new avenues and brought new challenges for language learners and also educators. The responsibility of the learning task has shifted towards students and this has dramatically changed the role of educators [1].

Utilization of ICT for education has become a necessity that cannot be delayed any longer. Various ICT applications are available in the community and are ready to be used optimally for educational purposes. Utilization of information and communication technology for education can be carried out in various forms in accordance with its function in education.

Furthermore, Ghasemi and Hashemi[2] stated that based on the results of research on the utilization of ICT are as follows: (1) Improving the quality of learning and teaching students; (2) Ease of accessing information and knowledge with a very high volume available in the world; (3) Accessing information quickly and precisely in a very short time; (4) Reduction of educational costs; (5) Improving the quality, accuracy, and scientific text of academic disciplines; (6) Creation of indirect learning experiences; (7) Creating the right relationship; (8) Creating learning interest; (9) Increase learning opportunities; and (10) Educators can evaluate students who have collected the information needed and as feedback according to students serving.

Utilization of ICT in learning English can run continuously, if the lecturer is committed in carrying out the program. Lecturers must always motivate themselves to develop ICT. Being consistent is the key word and location of ICT's success so that it can be useful in learning English. Queiroz[2] argues that ongoing training in developing ICT in learning English will be needed, because technology continues to develop.

The importance of English language skills does not match the field. Based on the researchers' experience in teaching English to PGSD students, especially in English (Integrated English) courses, students generally have difficulty in reading, listening, writing, and speaking even though these four are skills that must be mastered [3].

Based on the experience of researchers, English learning outcomes of most PGSD students are still low. The low learning outcomes are due to students difficulty in expressing their ideas using English, the difficulties that occur can be sourced from individuals such as language patterns and frequent use of local languages. The pattern of English that is different from Indonesian is indeed a particular difficulty for

Copyright © 2019, the Authors. Published by Atlantis Press SARL.
This is an open access article under the CC BY-NC 4.0 license (http://creativecommons.org/licenses/by-nc/4.0/).

students, especially if students daily use regional languages, this certainly adds to the difficulty in understanding foreign languages, such as English.

Another reason for the low learning outcomes is because students entering tertiary levels come from very different backgrounds and with very different English abilities from one another. Students who study in high school equipped with facilities, facilities, human resources and adequate methods tend to have better learning outcomes while students who are less equipped with the means and infrastructure of learning outcomes tend to be low. This is supported by Sari, et al., [4] who state that one of the reasons for the low learning outcomes is the lack of use of instructional media. The optimal use of Moodle is expected to improve student learning outcomes in English.

Other causes of low learning outcomes because students consider English very difficult to learn because there are differences in writing and reading, there is intonation, different pronunciation, so they are less interested and less motivated to learn English.

To improve student learning outcomes by overcoming difficulties in learning, competence and innovation from lecturers are needed. In accordance with the rapid development of technology, lecturers have various alternatives in learning to achieve maximum learning outcomes. One way to improve learning outcomes in English, it is necessary to do technology-based learning. One alternative learning media that can be used is Information and Communication of Technology (ICT) based. ICT used in research based on E-Learning with the Modular Object-Oriented Dynamic Learning Environment (Moodle) application with on-line hybrid methods. Moodle is a web-based platform. The hybrid learning model is learning that combines offline and online learning and optimizes the benefits of both methods.

On-line hybrid lectures are designations for lecture models that integrate face-to-face learning with the advantages of e-learning using internet media. This lecture model is often called the blended learning model. In the hybrid on-line model the advantages of e-learning are used to cover the deficiencies that occur in traditional face-to-face learning. E-learning is a management of learning through internet or web media which includes aspects of material, evaluation, interaction, communication and collaboration. E-learning can provide interesting and meaningful experiences for learners because of their ability to interact directly, so that understanding of the material is more meaningful, easily understood and remembered and easily expressed again.

II. METHOD

This research was conducted at one of the tertiary institutions in Medan in the even semester of the 2018/2019 Academic Year. The population of this study included all PGSD students who contracted an Integrated English course in the second semester consisting of nine classes totaling 311 people. The technique of sampling is cluster random sampling.

This type of research is quasi experiment. The sample is divided into two classes, namely one experimental class and a control class. The experimental class taught in ICT-based learning using hybrid on-line while the control class is in conventional learning. The study design was in the form of two group pretest-posttest as shown in Table 1.

TABLE 1. PRETEST-POSTTEST CONTROL GROUP DESIGN

Class	Pre test	Treatment	Post test
Experiment	X_{1A}	T	X_{2A}
Control	X_{1B}	O	X_{2B}

Source : Cohen, *et al.*, 2010

Description:

X_{1A} = Pre Test for the experimental class

X_{1B} = Pre Test for control class

X_{2A} = Post Test for experimental class

X_{2B} = Post Test for control class

T = ICT-based learning treatment

O = The conventional learning treatment

Experimental classes using ICT-based learning using on-line hybrid methods. After the lecturer presents each topic in face-to-face lectures in class, students can access Moodle (www.integrated-english.education) using their account. Students can study each topic which is divided into four sections and each section has exercises, assignments, and quizzes.

The data collection technique was carried out using a 40-item multiple choice learning outcomes test instrument. The learning outcomes in this study refer to the four English language skills (reading, listening, writing, and speaking). Pretest data analysis using the two-party hypothesis test with t-test. Posttest data used a one-party hypothesis test with t-test. Pretest and posttest data must be normal and homogeneous. The effectiveness of the application of ICT learning to English learning outcomes is determined based on the average normalized gain score (N-gain). According to Stewart & Stewart, (2010) the high and low N-gain can be classified as shown in Table 2.

TABLE 2. CRITERIA FOR IMPROVING N-GAIN IN ENGLISH LEARNING OUTCOMES

Gain value of learning outcomes	Interpretation
$0{,}7 < g < 1$	**High**
$0{,}3 \leq g \leq 0{,}7$	**Medium**
$0 < g < 0{,}3$	**Low**

III. RESULT AND DISCUSSION

Result

Pretest was carried out in the experimental class and the control class which aimed to determine the initial ability of the two samples before being treated. After the pretest, ICT learning is carried out in the experimental class and conventional learning is in the control class, and then given a posttest. Posttest was conducted to see the effect of applying ICT and conventional learning to English learning outcomes in

both classes. Pretest and posttest data of both classes are shown in Table 3 and Figure 1. The percentage increase in N-gain learning outcomes is shown in Figure 2.

TABLE III. AVERAGE TEST LEARNING RESULTS OF BOTH CLASSES

Class	Pretest	Post-test	% N-gain	Category
Experiment	39.41	75.86	60	Medium
Control	41.25	66.38	43	Medium

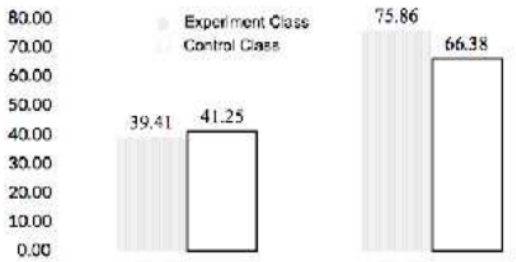

Fig 1. Average Pretest and Posttest Learning Results of Both Classes

Based on Table 3 and Figure 1, it can be seen that the average value of the pretest learning outcomes of the two classes is almost the same while the average posttest of the two classes is different. Based on Figure 2, the percentage increase in N-gain learning outcomes of the experimental class by 60%, and the control class 43%, each in the medium category. It can be concluded that with the application of ICT-based learning learning, student learning outcomes in English are better when compared to conventional learning.

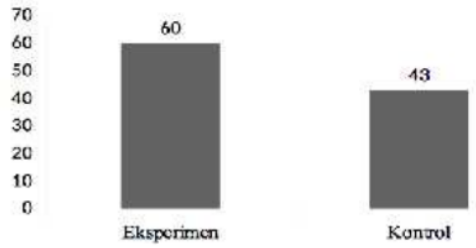

Fig 2. Percentage of Increase in N-gain of Both Classes Learning Outcomes

Pretest and posttest data analysis using different test (t-test) with the condition that the data is normally distributed and homogeneous. Data normality test uses Lilliefors test and homogeneity test uses variance test. Calculation of normality, homogeneity and different tests using SPSS. The results of normality, homogeneity, and difference tests are shown in Table IV.

TABLE IV. NORMALITY, HOMOGENEITY, AND DIFFERENCE TEST RESULTS TWO MEAN LEARNING ACHIEVEMENT ACHIEVED BY BOTH GROUPS

1	2	3	4	5
Pre-test	0.636 (normal)	0. 069 (homogen)	0.434	Same initial ability
Post-test	0.416 (normal)	0. 133 (homogen)	0.000	There are differences in learning outcomes

Description:
1: Experiment and Control Class
2: Kolmogorof-Smirnov Z a symp.sign. (2-tailed)
3: Levene Test for Equality of Variance
4: Sign.(2-tailed)
5: Information

Based on Table 2 pretest data using the average different test with the different test it can be concluded that the initial abilities of students are the same. Based on the posttest data it can be concluded that ICT-based learning has a significant influence on student learning outcomes in English. In other words, ICT learning is better than conventional learning.

Discussion

ICT-based learning has a significant influence on students' English learning outcomes because with ICT learning the learning process can be more optimal, interesting, and encourage students to be more skilled in communicating, skilled at organizing information, and accustomed to working together. Students can develop the ability to learn independently, take initiative, be innovative, be creative, and be accountable to themselves and their teams. Learning like this develops the ideas of creativity of lecturers and students. This is supported by Ismanto[6] who states that learning ICT using Moodle is a path to unlimited education, a pioneer who will build the creativity and ideas of lecturers and students. ICT-based learning has a significant influence on students' English learning outcomes because with ICT learning the learning process can be more optimal, interesting, and encourage students to be more skilled in communicating, skilled at organizing information, and accustomed to working together. Students can develop their ability to learn independently, take initiative, be innovative, be creative, and be accountable to themselves and their teams. Learning like this develops the ideas of creativity of lecturers and students. This is supported by Ismanto[6] who states that learning ICT using Moodle is a path to unlimited education, a pioneer who will build the creativity and ideas of lecturers and students.

Syahri[8] in his research found that ICT-based English learning can provide effectiveness in learning and improve student learning outcomes. ICT-based English learning can motivate the power of aggressive, participatory and productive learning in independent, super-active learning from students and can develop all the potentials that each has actively in the freedom of learning, meeting the needs of knowledge and skills independently (individuals) not bound by the presence of teachers, lecturers, face-to-face meetings in class, as well as the presence of school friends to increase the quality of their learning outcomes. This is also supported by Sari, et al., [4] who based on the results of a journal analysis conducted concluded that ICT-based learning media using Moodle can improve the quality of education. In this way, the teaching-learning process can be improved. Moodle can improve the learning process [9]. ICT-based learning with blended learning makes the learning process centered on students (student

centered) because students are more active and effective compared to conventional learning [10]. Blended learning learning makes students collaborate with their peers, teachers, schools, and other parties involved so as to increase student success and satisfaction [11]. ICT-based learning using Moodle provides a beneficial learning experience and has an effect not only on learning outcomes, but also on their attitudes towards learning [12].

Learning using ICT provides an interesting and meaningful experience for students because of their ability to interact directly, so that understanding of the material is more meaningful, easy to understand, easy to remember and easily expressed again. With a variety of content, interesting interactions, providing direct feedback, can improve one's level of understanding and memory of the knowledge conveyed. The e-learning online collaboration facility facilitates the process of information and communication transfer. Centralized administration and regulation makes it easy to access operations. Learning by e-learning, attention in learning is focused on students, and does not depend entirely on lecturers.

ICT-based learning makes learning more efficient because it makes students have flexibility in choosing the time and place of learning because they do not have to come somewhere at a certain time unlike in conventional classes, students do face-to-face meetings with their lecturers according to a predetermined schedule. This is supported by Chen [13] who states that technology-based learning media using Moodle makes learning more efficient because of the lack of engagement with educators and students.

Lecturers can update their learning material anytime and from anywhere. In terms of content, learning materials can also be made very flexible starting from text-based lecture materials to learning materials that are loaded with multimedia components. Similarly, the quality of learning, which can be very flexible or varied, which can be worse or better than face-to-face (conventional) learning systems. This is supported by Costa, et al., [14] who state that ICT-based learning using Moodle has great potential to become a center for material collection so that it is easier for students to get material.

IV. CONCLUSION AND RECOMMENDATION

The conclusion obtained based on the results of the study is that the application of ICT-based learning using hybrid on-line can have a significant influence on student learning outcomes in English or in other words ICT-based learning is better than conventional learning of English reading skills. ICT-based learning gives a percentage increase in N-gain of English learning outcomes by 60% while the percentage of improvement with conventional learning is 43%, each in the medium category.

ACKNOWLEDGMENT

Sincere thanks are conveyed to the Ministry of Research, Technology and Higher Education which has provided funds to support the superior research implementation of this university based on Decree 027 / UN33.8 / LL / 2018.

REFERENCES

[1] Ghasemi, B., and Hashemi, M., "ICT: Newwave in English language learning/teaching," ScienceDirectProcedia Social and Behavioral Sciences,15, pp. 3098 – 3102, 2011.

[2] Queiroz, V., "Roles and Competencies of Online Teachers," The Internet TESL Journal,vol. IX, no. 7, 2003. Available at http://iteslj.org/Articles/Queiroz-OnlineTeachers.html.

[3] Simbolon, N., "Pengaruh Pendekatan Pembelajaran dan Kemampuan Verbal terhadap Kemampuan Berbicara Bahasa Inggris Siswa SMA Negeri 14 dan 21 Medan," CakrawalaPendidikan, vol33 (2), pp. 225-235. 2014.

[4] Sari, A. P., Baedhowi, and Indrawati, C.D.S., "The Use of Learning Media with Moodle Approach to Improve the Quality of Education: A Literature Study," International Conference on Teacher Training and Educatio (ICTTE), pp. 54–59, 2017.

[5] Cohen, L. Manion, L., and Morrison, K., "Research Methods in Education 5th Edition," RoutledgeFalmer. Taylor & Francis Group. London and New York, 2010.

[6] Stewart, J. and Stewart, G., "Correcting the Normalized Gain for Guessing," The Physics Teacher, vol 48, pp. 193-196, 2010.

[7] Ismanto, H., "Pembuatan Aplikasi Perkuliahan Jarak Jauh Berbasis Web Menggunakan Moodle pada Universitas Musamus Merauke," Prosiding SNaPP2012: Sains, Teknologi, dan Kesehatan, vol3 (1), pp. 413-421, 2012.

[8] Syahri, I., "Pengembangan Media Pembelajaran Bahasa Inggris Berbasis TIK di SMP Negeri 35 Medan," Prosiding Seminar Nasional Tahunan Fakultas Ilmu Sosial Universitas Negeri Medan, vol1 (l), 123-127, 2017.

[9] Caputi, V., and Garrido, A., "Student-oriented planning of e-learning contents for Moodle," Journal of Network and Computer Applications, vol4 (001), pp. 1-27, 2015.

[10] Luna, Y.M., and Winters, S.A., "Why Did You Blend My Learning? A Comparison of Student Success in Lecture and Blended Learning Introduction to Sociology Courses," Teaching Sociology, vol 45 (2), pp. 116-130, 2017.

[11] Vaughan, N., "Student Engagement and Blended Learning: Making the AssessmentConnection," Education Sciences, vol4, pp. 247–264, 2014.

[12] Lin, Y. W., Tseng, C. L., and Chiang, P. J., "The Effect of Blended Learning in Mathematics Course". EURASIA Journal of Mathematics, Science and Technology Education, vol 13 (3), pp. 741-770, 2016.

[13] Chen, C., "Research on design of modern education technology course based on Moodle platform," Bio Technology An Indian Journal, vol10 (19), pp. 11310-11316, 2014.

[14] Costa, C., H. Alvelos, and L. Teixeira, "The use of Moodle e-learning platform: a study in a Portuguese University," Procedia Technology, vol5. pp. 334-343, 2012.

Naeklan EB MP.pdf

ORIGINALITY REPORT

23%	14%	13%	14%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Universitas Pendidikan Indonesia Student Paper	2%
2	Babak Ghasemi, Masoud Hashemi. "ICT: Newwave in English language learning/teaching", Procedia - Social and Behavioral Sciences, 2011 Publication	1%
3	bpm.umg.ac.id Internet Source	1%
4	qualityofscience.blogspot.com Internet Source	1%
5	Submitted to Universitas Muhammadiyah Sumatera Utara Student Paper	1%
6	Submitted to Universitas Jember Student Paper	1%
7	jurnal.uinsu.ac.id Internet Source	1%

blogformooc.blogspot.com

8	Internet Source	1%
9	Submitted to Universitas Diponegoro Student Paper	1%
10	Astin Lukum, Erni Mohamad, Mustari S. Tamalu, Kostiawan Sukamto, Yoseph Paramata. "Effect of problem solving learning models on self-confidence and student learning outcomes on topics of reduction-oxidation", Journal of Physics: Conference Series, 2019 Publication	1%
11	jurnal.unimed.ac.id Internet Source	1%
12	Submitted to TMC Education Group Student Paper	1%
13	M H Ash-Shiddieqy, A Suparmi, W Sunarno. "The effectiveness of module based on guided inquiry method to improve students' logical thinking ability", Journal of Physics: Conference Series, 2018 Publication	1%
14	Sadam Husein, Gunawan, Ahmad Harjono, Sri Wahyuni. "Problem-Based Learning with Interactive Multimedia to Improve Students' Understanding of Thermodynamic Concepts", Journal of Physics: Conference Series, 2019	1%

Publication

15	repository.uinjkt.ac.id Internet Source	1%
16	T A T Nugroho, H D Surjono. "The effectiveness of mobile-based interactive learning multimedia in science process skills", Journal of Physics: Conference Series, 2019 Publication	1%
17	N Harefa, R D Suyanti. "Science generic skills of ‘chemistry’? prospective teachers: A study on collaborative learning using Exe-media", Journal of Physics: Conference Series, 2019 Publication	1%
18	Yarni Valentina Gultom. "Teaching Reading Skills to Non-English Native Speaker Students: The Numbered Head Together (NHT) Technique and Students’ Reading Ability in Bengkulu", International Journal of Language Teaching and Education, 2018 Publication	<1%
19	aa-rf.org Internet Source	<1%
20	Rini Budiharti, N S Waras. "Analysis of student’s scientific attitude behaviour change effects blended learning supported by I-spring Suite 8 application", Journal of Physics: Conference	<1%

Series, 2018
Publication

21	aisteel2019.unimed.ac.id Internet Source	<1%
22	www.atlantis-press.com Internet Source	<1%
23	www.iserjournals.com Internet Source	<1%
24	Ainul Marhamah Hasibuan, Sahat Saragih, Zul Amry. "Development of Learning Materials Based on Realistic Mathematics Education to Improve Problem Solving Ability and Student Learning Independence", International Electronic Journal of Mathematics Education, 2018 Publication	<1%
25	eprints.uny.ac.id Internet Source	<1%
26	S Sudarmin, E Selia, M Taufiq. "The influence of inquiry learning model on additives theme with ethnoscience content to cultural awareness of students", Journal of Physics: Conference Series, 2018 Publication	<1%
27	Submitted to Hawaii Pacific University Student Paper	<1%

28	Umi Faizah, Sarwiji Suwandi, Andayani, A Rahmawati. "The Use of Learning Media on the Speaking Subject of Islamic Higher Educations in The Entire Central Java and Yogyakarta", Journal of Physics: Conference Series, 2019 Publication	<1%
29	Submitted to The Robert Gordon University Student Paper	<1%
30	Submitted to United International College Student Paper	<1%
31	iopscience.iop.org Internet Source	<1%
32	Submitted to Nanyang Technological University Student Paper	<1%
33	International Handbook of Education for the Changing World of Work, 2009. Publication	<1%
34	B Miliyawati, T Herman. "Effect of problem based learning with didactical engineering on student mathematical disposition", Journal of Physics: Conference Series, 2019 Publication	<1%
35	Submitted to Graz University of Technology Student Paper	<1%
36	Submitted to Universitas Terbuka Student Paper	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	On		