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**THE EFFECTIVENESS OF WEB-BASED LEARNING MEDIA ON THE STUDENTS’ READING ABILITY**

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**Abstract**

This study aims at: examining the difference of the third semester students' reading ability of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal between the students taught with web-based learning media and those with conventional learning. This research employs a quantitative approach with a true-experimental method conducted by using a pre-test – post-test control group design. The Population is all of the third semester students of English Education Study Program of Faculty of Teacher Training and Education, Pancasakti University of Tegal. The samples consist of 32 students classified into the experiment group and the other 29 students classified into the control group. The research instruments are questionnaire and test, while *Mann Withney* test is conducted for data analysis. Based on the results of *Mann Withney* test, it is obtained that *p* (0.000) <α (0.05) which means that the application of web-based learning media effectively improves the students' reading ability.

**Keywords**: effectiveness, web-based learning, reading ability

* + 1. **Introduction**

Improving the quality of English learning should involve various variables as the success determinants of learning processes. Recently, English learning is a subject matter which should be learned and mastered by the students at various levels of educational institutions in Indonesia.

One particular basic skill of language which should be mastered in English learning is reading. Brown (2004) states that reading is a skill taken for granted. Reading is also a skill in which the educators expect that the learners may gain something. Basically, the initial level of foreign language textbooks requires learners' reading ability. Most formal tests also use written language as a stimulus to determine the response of the test-taking participants. Thus, reading is the most essential ability to succeed in all educational contexts. To improve reading ability, the learners should practice and comprehend it as their custom.

So far, the reading learning model still relies on a reading text model to understand the text, analyse the linguistic elements and eventually answer some questions related to the text. The texts used for the questions from the textbooks or references provided by the lecturers that the reading processes are performed during the lecturing hours. Thus, learning media, in this case as web-based learning media, are required to avoid the monotonous learning.

The effectiveness of teaching and learning processes is strongly influenced by the learning method and media used as they are interrelated that the selection of a particular method may influence the types of media to use. Thus, both method and media should be well matched in order to achieve the learning objectives. The utilization of learning media may encourage new spirits and interests, increase motivation, stimulate more learning activities, and psychologically influence the students (Arsyad, 2007).

Internet technology has become the right technology with its facilities as the information and data sources can be rapidly accessed, fast communication devices without any limitation of distance. The utilization of internet technology for learning has not yet been optimized. It is shown on internet that many learning sites have not been well packaged for the students ready to use but generally only sell educational products, such as learning software and banks of questions. In facts, those educational institutions which have already been utilizing internet as their learning media result in less optimal internet use.

Based on the results of pre-research observations and interviews, it is found that due to the learning outcomes on reading subjects, there are still many students who have poor scores and should take remedies for several times to achieve the minimum course passing grade. The limitation of learning media which support the reading courses makes the development of website-based learning media is highly necessary to be implemented since the students may use the media as their learning resources, including for self-study.

Web-based learning media with the utilization of Moodle application allow the students to enter the digital classrooms to access the learning materials, quizzes, electronic journals, chat modules, polling modules, forum modules, journal modules, quiz modules, workshop, survey modules, and more. Moodle is a Content Management System (CMS) application with GNU license (General Public License).

Based on the background above, the writer is interested to create a website as a learning medium used for both lecturers and students in learning activities. The writer selects the research object on a learning-based reading website in which the controlling instruments are PCs (Personal Computer), netbooks, mobile phones connected to the computer networks and Internet with *Moodle*, PHP and MySQL software. In addition for data outputs, the software above may input the data that the presented data and information may be changed and attractively displayed as needed.

* + 1. **Literature Review**

The advantages of web-based learning media according to Elangoan (1999), Soekartawi (2002), Mulvihil (1997), Utarini (1997) in Asep Herman Suyanto (2005), among others are the availability of e-moderating facilities in which lecturers and students may communicate easily through the internet facilities on a regular basis or any time as the communication activities may be performed without being limited by the distance, place and time. Second, lecturers and students may use instructional materials or the structured and scheduled learning instructions through internet that they may easily assess the learning materials which are being, have been, and will be learned. Third, the students may learn or review materials anytime and anywhere as necessary since the materials are stored in the computer. If the students require any additional information related to the materials to learn, they may easily access the internet. Both lecturers and students may have various discussions through internet followed by a large number of participants, to add their knowledge and broaden their insights. One important point is that the role of students which is previously passive may become active in normal ways.

* + 1. **Method of Investigation**

This research uses a quantitative research method as the data are in numbers and then statistically analyzed. This is also considered as a descriptive as the information is collected to improve and modify a service or develop an inquiry due to the effectiveness of web-based learning to improve the third semester students' reading ability of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal.

This is an experimental research type. Sugiyono (2010: 107) states that experimental research is a study which uses experiments to examine the influence of a particular treatment within a controlled situation. Thus, this study aims to examine the influence of web-based learning media on the students' reading skills in learning processes.

This research employs a *true-experimental design* with a two-group design. Sugiyono (2010: 112) explains that the main characteristics of a *true-experimental design* are the samples which are used for the experimental and control group randomly selected from the population. This scientific research is conducted on the third semester students of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal, in the academic year of 2015/2016. Two groups are used in this scientific research. In other words, there are randomly selected samples classified into two groups, namely experimental group and control group. The students classified into the experimental group are taught using web-based learning media, while those in control groups are taught using the conventional method.

The writer uses pre-test and post-test to figure out the students' reading ability. Pretest is used to know the students' reading ability before and after they are taught using web-based learning media.

In this study, the writer uses two data collection techniques, namely tests and questionnaires. The tests given are tests to determine the students' reading ability before and after the experiments are conducted. The tests are in the forms of *multiple choice objective* with choice A, B, C, and D. The testing results are calculated and analyzed to determine the students' reading ability. The second data collection technique is a questionnaire which is intended to reveal the respondents' perceptions on web-based learning media.

The data are analyzed with a quantitative research technique, in the forms of descriptive data conducted using statistics. After the results of data collection are generated, the writer then immediately analyzes the data.

After the results of pre-test and post-test are obtained then the next step is analyzing the data using t-test. Hypothetical testing is then conducted to examine the role of independent variable on the dependent variable.

* + 1. **Findings and Discussion**

The result obtained from the control group before the treatment is 56.13 while that obtained from the experimental group is at the average value of 55. The mean obtained from the learning result after treatment in control group is 81.75 while from the experimental group is 91.75.

The test of the right side calculated that the data of the third semester students' reading ability of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal is distributed abnormally and not homogeneously. To test the difference of two means between the experimental group and the control group, *Mann Withney* test is employed.

The hypothesis is tested as follows: Ho: μ1 ≤ μ2 Ha: μ1> μ2. From the research, it is found that p = 0.000 with α = 5%, because p <α 0.05, so Ho is rejected while Ha is accepted. It means there is a significant difference between the students' reading ability with web-based learning media and that with conventional learning.

After the data are differentiated based on the differential test using *Mann Whitney*, then the effectiveness test is conducted. Empirically, the effectiveness of web-based learning media application on genre text materials may be figured out with manual calculation using the formula: (O2-O1) - (O4-O3). Statistically, this effectiveness test uses a comparative hypothetical testing of two samples, using one-tailed test. The formula used is the polled variance. To test the right side, the writer calculates tcount first and then compares it with ttable.

If there is a positive and significant difference between (O2-O1) the experimental group and (O4-O3) the control group, then the treatment given positively and significantly influences the students' reading ability. The significance of the students' reading ability in the pretest of experimental group is (O1) = 55, while that in the posttest is (O2) = 91.75. The significance of the students' reading ability in the pre-test of control group is (O3) = 56.13 and that in the post-test group is (O4) = 81.75. The effectiveness of using web-based learning media is: (O2-O1)-(O4-O3)=(91.75-55) - (81.75-56.13) = 36.75 – 31.62= 5.13.

The effectiveness of using web based learning media when compared with the conventional learning media on the students' reading ability on genre-based texts is 5.13 which shows a positive and significant difference. Therefore, it can be concluded that the use of web-based learning media has a positive and significant influence on the students' reading ability. The effectiveness test is then continued with the statistical testing.

Statistically, there are some provisions should be used as guidance for testing the hypothesis. The provision is that if tcount ≤ ttable, H0 is accepted while Ha is rejected and if Ho is accepted then Ha is rejected. It means that the students' reading ability improved with web-based learning media is not better than that of students taught with the conventional learning. Conversely, if tcount > ttable, Ha is accepted while H0 rejected, and if Ha is accepted then H0 is rejected. It means that the students' reading ability developed with web-based learning media is not better than that of students taught with the conventional learning.

The samples of this study are 61 students, if the samples (n) are 61 students, the degree of freedom (dk)= n-2 = 61-2 = 59. According to table t, the t table score for the two-side test is with the significance level of 0.05:1 0.05 (one side test) and the score of degree of freedom (dk) = 59 is 1.671. Then ttable score is used as a comparison of the calculation of the hypothetical testing (tcount) results.

Based on the comparative hypothetical testing of two samples using the formula of polled variance, it is obtained that tcount is 1.750. Based on the calculation, it is known that tcount is 1.750. Based on the calculation, it is known that tcount > ttable. Because the score of tcount =1.750 and score ttable = 1.671, maka tcount>ttable. Referring to the provision of decision making on the hypothetical testing that Ho is then rejected while Ha is accepted. Thus, it can be concluded that the students' reading ability classified in the experimental group is better than in the control group.

From the first data analysis, it is found that the data are normally distributed. Thus, it can be said that both experimental group and control group start from the similar or homogeneous condition. It can be seen from the reading comprehension pretest of both groups and proven by the *t* test to see the average of both equations. The results show that there is no ability difference between the experimental class and the control class which means that the both classes are well-balanced. Then those two groups are given different treatment as the experimental group is treated by applying the web-based learning media for genre-based texts and the control group is treated with a conventional learning.

After the learning process is conducted by the treatment of applying the web-based learning media for genre-based text in the experimental class and the treatment of conventional media in the control class, it shows that the final learning result of both groups is different. The learning outcome difference is shown by the mean score of the experimental class which is by 91.75 while at the control class is only by 81.75. The mean of the post-test scores shows that the learning outcome of experiment class is higher than that of the control class. To know the effectiveness of using web based learning media for genre based texts at the experimental class and the use of conventional learning media, the *polled variance* is also conducted. The effectiveness of web based learning media application when compared to the conventional learning media on the reading of genre-based texts is 5.13 which shows a positive and significant difference. Thus, it can be concluded that the use of web-based learning media has a positive and significant influence on the third semester students' reading ability of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal.

Based on the comparative hypothetical testing of both samples using the *polled variance* formula, it is obtained that tcount is 1.750. Based on the calculation, it shows that tcount>ttable. Because tcount = 1.750 and ttable = 1.671, then tcount>ttable. Due to the provision of decision making on the hypothetical testing, then Ho is rejected while Ha is accepted. Thus, it can be concluded that the students' reading ability in the experimental group is better than that of the control group.

Based on the research results on each meeting, the experimental class students are required to play more active roles in obtaining the opportunity to build their own knowledge to gain a deeper understanding, while the learning processes are more various, such as uploading, downloading, and answering the questions with the concept of understanding when reading the concept of genre-based texts that lecturers conduct by using a web-based application.

The third semester students' reading ability of English Education Study Program, Faculty of Teacher Training and Education, Pancasakti University of Tegal is improved at the experimental group because the web-based learning media have various advantages to stimulate the students' learning interest due to the characteristics of computer-based technology, both hardware and software. Thus, technology is more preferable in producing and presenting more interactive and unlimited learning materials with space and time which may be performed whenever and wherever. The existence of conducive learning atmosphere with active and enthusiastic students is visible when compared to the control class, especially in terms of the distribution of learning materials which are not considered as teacher-centered learning. The learning culture developed in the experimental class is the students' activity in building their own curiosity, building their character to sincerely help their friends who are in troubles and difficulties, and time management which may become optimal in the classroom as the activity is already well structured.

The application of web based learning media on the students' reading ability for genre-based texts is already in structured activities for each meeting that students are able to manage their learning time in the classroom which are expected in line with the optimization of the existing facilities. Thus, students' activeness in building their own knowledge is expected enable them to remember longer and understand the course better.

Besides the result improves the students' reading comprehension, one essential benefit is the support of web-based instructional media becomes more effective as shown by several indicators in the learning processes, such as the improving students' activities, both in delivering questions and presentation in the forms of completed assignments. The other benefit is that the students' assignments become more various and creative because of having more extensive learning resources that they may have more material references than those in the control class who do not use the web-based learning media.

The students may gain more benefits when using the web-based learning media as they have more abilities in making interactions with the internet and the uses, for example they understand how to upload assignments and recognize links to improve their creativity in completing the assignments. The learning implementation in the experimental group, at first, they experience a little bit resistance. A new learning method for lecturers and students requires time for adjustment. However, the arising barriers taking place may slowly be reduced due to the students' participation in the learning processes. Various activities in a classroom may add vibrancy, motivation, share character, help solving problems and create a positive learning environment that learning may become more interactive and effective.

* + 1. **Conclusion**

There is a significant difference between the reading ability of students treated with the web-based learning media and those treated using conventional learning (Mann Whitney's test p = 0.000 with α = 5%, p <α 0.05). It is proven with the average score of reading ability in the experimental group by 91.75 while that in the control group is only by 81.75.

The students' reading ability when treated with the web-based learning media is better than that treated with the conventional learning. The application of web-based learning media is proven more effective due to the score of students' reading ability on genre-based text materials by 5.13. It is alxo proven with tcount = 1.750 and ttable = 1.671, that tcount > ttable.

The suggestions that the writer may recommend are as follows:

1. Web-based learning media is one of the alternative interactive learning media to develop the students' active, independent, and creative attitudes that these instructional media should be used for the reading materials. The preparation for more active assessment format for students is also highly emphasized to obtain more complete data.
2. Before the implementation of learning using this media, the lecturers should be able to provide the supporting components, such as a more systematic learning plan, materials and assignments dealing with the web-based learning media, should have been well provided before the learning begins.
3. Web-based learning media require extra time for the preparation that before starting the courses, the lecturers should provide the materials very carefully as the media are used by the lecturers during the learning processes. The students' conditions when learning through web-based learning media should be paid more attention since the students require their independence to explore the materials taught in depth and develop their knowledge broader.
4. Needs for the internet connection facilities as the supporting factor for the application of this learning should be adequate provided that the learning effectiveness may be well achieved. The learning processes conducted with web-based learning media are highly dependent on the availability of internet connection that when the internet network facilities are disrupted, the learning processes may also be disrupted.

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**Bibliography**

Alessi, S.M, & Trollip, S.R. 2001. *Media for Learning: Methods and Development* (3rd ed.) Boston: Allyn and Bacon

Alexander, L.G. 1975. *Developing Skills*. London: Longman.

Alexander, L.G. 1975. *Practice and Progress*. London: Longman Group Ltd.

Arikunto, Suharsimi. 2006. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

Azhar Arsyad. 2011. *Media Pembelajaran*. Jakarta: Rajawali Pers.

Harmer, J. 2003. *The Practice of English Language Teaching*. Essex: Longman.

Harmer, J. (2012). *Essential Teacher Knowledge*. London: Pearson Education.

Herman, Surjono. & Maltby. 2003. *Adaptive Educational Hypermedia Based on Multiple Student Characteristics.* Melbourne, Australia.

Keskitalo, T., Pyykkö, E., & Ruokamo, H. 2011. Exploring the Meaningful Learning of Students in Second Life. *Educational Technology & Societ*y, 14 (1), 16–26.

Serian Wijatno. 2009. *Pengelolaan Perguruan Tinggi Secara, Efisien, Efektif dan Ekonomis Untuk Meningkatkan Penyelenggaraan Pendidikan dan Mutu Lulusan.* Jakarta: Salemba Empat.

Sudjana, Nana. 2008. *Tuntunan Penyusunan Karya Ilmiah.* Bandung: Sinar Baru Algesindo.

Sugiyono. 2010. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R*&D*.* Bandung: Alfabeta.