Utilization E-learning as an effort to support Eco-friendly learning

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Abstract: The use of the media as tools for the learning process is needed in addressing issues related to the time and place of learning. Things that are related to learning must be carried out without limited space and time, so it is necessary to carry out sustainable development in education. The shape of this sustainability is the use of technology as a learning medium that can help realize environmentally friendly movement. Technology in the learning process can be called e-learning. This study uses qualitative research with phenomenological approach. The purpose of this study is to determine the intensity of the use of e-learning and externalities that are generated by the e-learning method. The results showed that the intensity of using e-learning media was not yet maximally applied by lecturers and students at STKIP PGRI Lumajang so that efforts to realize environmentally friendly learning had not been carried out optimally.

1. Introduction

The learning activities are not only synonymous with the duty of a teacher to teach learners in the classroom as well as educate their students about the knowledge in a given field of science. We as individuals also have a role to always be aware of environmental concerns. Likewise, the material contains the need for technology to support environmentally friendly learning activities, which are in line with the mission of sustainable development.

Indicators of the progress of an area can be seen from the development of the world of education. Likewise, the progress of a society has a considerable influence on the education sector. Regions are considered successful in their development if benefits can be felt by later generations and so on. The task as a teacher in any field of knowledge is strived to be able to integrate technology use with learning media. One way to use e-learning as a learning medium (reading books, assignments, evaluations, etc) replaces paper and stationery that consumes a lot of natural resources. Although many studies have focused on single aspects of green education in higher education, not many have widened the scope to account for a comprehensive understanding of the practices involved in a campus-wide green effort or the processes involved in achieving this goal, [14].

The development of technology creates convenience in various aspects of life, including ease in learning. However, this convenience is not all able to be enjoyed by the people, of course those who lack understanding of the technology itself. In fact, not all academicians are able to use technology appropriately, including students. So in this context, it is necessary to have an active role of Higher Education in directing students to be more appropriate in using technology as a learning support facility. The role of STKIP PGRI Lumajang in facilitating the ease of
student learning has grown with the e-learning media that has been used since the beginning of 2018. According to Jayatri, et al research results in the Proceedings of the ICECRS (2019: 271) found that e-learning as a media to support the quality of learning is able to create effective learning activities because the material presented can be stored by students for a long period of time. The efficiency of learning activities created because it can save time and travel costs. Student learning productivity can be created because every individual has the same opportunity so they can be encouraged to play a more active role.

Based on the findings of previous studies, the use of this media is considered to be very effective and efficient to support the quality of learning, but further impacts appear more serious, namely the support of environmentally friendly learning activities. Previous studies only examined e-learning as a learning support medium in which further research designs were more focused on reducing paper so that environmentally friendly learning could be achieved. A breakthrough in the use of e-learning was created to teach students at an unlimited time and place. Furthermore, through this research the use of e-learning is nothing to awaken students and the entire academic community of STKIP PGRI Lumajang about the environmental impact caused by the reduction in the use of paper.

2. Methods

This type of research is a qualitative research with a phenomenological approach. This study contains an explanation of the use of e-learning in STKIP PGRI Lumajang students in an effort to support eco-friendly learning media. Data obtained through observation, interviews, and documentation. In this study, the focus of research is the intensity of the use of e-learning as a learning media and the use of e-learning as an environmentally friendly learning media to support sustainable development in STKIP PGRI Lumajang.

3. Results and Discussion

3.1 The concept of E-Learning in STKIP PGRI Lumajang

E-learning is one of the media that is supported by the use of information technology and telecommunications. According to [3] the characteristics of e-learning, among others: having content that is relevant to the learning objectives, using instructional methods as an example of the exercise as a learning evaluation, using the media element in the form of words and images to convey the material, allows direct learning centered on teachers, and construct understanding and skills related to learning objectives both individually and to improve group performance.

In another sense, according to [8] e-learning is defined as a form of business to make the transformation process of learning in school or college into a digital form that is bridged by technology. According to Alonso et al in [9] says that learning management system (LMS) and e-learning platform are dedicated software tools intended to offer a virtual educational and/or online training environment." LMS itself is software used to create web-based course materials online to manage learning activities and all evaluations.

Previous research by [13] titled E-Learning in Student Perceptions showed students had a good perception of e-learning; this was influenced by students' knowledge and experience in using e-learning. Students showed their willingness to do learning with e-learning by 86.3%, besides that students supported the e-learning content there was instructional that had to be done
with e-learning, a picture of learning to be done in class, as well as material that could be learned before learning as a face to face.

One form of distance education e-learning is explained by the theory Stockley [10], which defines e-learning as the delivery of learning programs, training, or education using electronic device such as a computer or other electronic device such as a mobile phone with a variety of ways to provide training, education, or teaching materials. E-learning is an effective learning process that is produced by combining material digitally consisting of support and services in learning. [6].

Soekartawi, Haryono, and Librero [15] states:

... e-learning is a generic term for all technologically supported learning using an array of teaching and learning tools as phone bridging, audio and videotapes, teleconferencing, satellite transmissions, and the more Recognized web-based training or computer-aided instruction Also commonly Referred to as online courses.

E-learning for STKIP PGRI Lumajang students especially economic education study programs provides an understanding of the ease of learning activities that can be done anywhere, not limited by time, provides convenience in accessing lecture material at any time. Students interpret online learning as ease of learning, distance traveled to campus can be overcome, lectures can be anywhere, learning does not have to be in the classroom, and devices that are not only used for social media but can be used for distance learning.

3.2 Intensity Utilization E-Learning as an Eco-Friendly Learning in STKIP PGRI Lumajang

Technological developments from year to year show that humans always want something practical. Examples of the development of communication tools, starting with correspondence, telephone coins, then move on to the emergence of telephone shops. A few years later the internet emerged and it was very easy for humans to interact without limit by place. Whatsapp, Skype, Instagram, Facebook and many other applications as communication media.

One of the positive sides of the development of Internet technology is the use of the website or search engines such as Google as a means of information. Compare that nowadays still use paper as a means of conveying information, how many thousands of sheets of paper that can be saved, how many hundred trees could be saved from the pulp making process. The agency felt there was no difficulty in issuing paper procurement costs and printing thousands of information as an announcement sheet. However, for the environment it has extraordinary benefits. So saving paper usage will help preserve the environment, decrease tree logging, and help protect the world's lungs.

The education is also affected by the rapid development of the virtual universe. Schools are using online media learning to be possible. E-learning is an alternative educational media that knows no space and time. Utilization of the e-learning can not be separated from internet services. Learning material on the internet is so complete, then this will affect the task of the instructor in the learning process. In the past the teaching and learning process was dominated by the role of the teacher, while students were only as listeners (the era of teacher). After that it was dominated by the role of instructors and printed books, for now it is dominated by teachers, books and technology. Technology can be a teaching representative as well as a printed textbook that represents an important learning resource in the world.
Intensity is understood as a measure of how often someone does something with the power or sincerity to achieve maximum results. E-learning has the understanding as a learning process that utilizes telecommunications facilities as the main media in the delivery of material and interactions between instructors how to combine the delivery of material digitally which consists of support and services in learning. According [5] the intensity of media usage of e-learning is a measure of how often a person uses media e-learning in the learning process. Based on the understanding of the intensity of the use of e-learning in the future, researchers drew several indicators of the intensity of the use of e-learning media, namely:

a. Frequency of use is its frequency or infrequency of someone using e-learning media in a given period;
b. The motivation to use the media e-learning is a supplier of power to use the media in a focused e-learning;
c. Directions attitude that one's readiness to use e-learning media.

Analysis of the intensity of the use of e-learning seen from the first, the frequency of use is the frequency or rarity of someone using e-learning media in a certain period. Second, the motivation to use e-learning media is power suppliers to use e-learning media in a directed manner. Third, someone's readiness to use e-learning media. Finally, there is an interest in someone to use e-learning.

The intensity of the use of e-learning media which measures how often a person uses media e-learning in the learning process. The data showed that the percentage of Economic Education lecturers in STKIP PGRI Lumajang using e-learning media was only 33.3% and for students as many as 46.2% who were able to participate in learning activities through e-learning. That is caused by the difficulty of changing old habits. For lecturers, if there are no assignments or examinations in the form of piles of paper, they are still not giving assignments. From the student side, student competence in the IT field is still lacking. Analysis of the intensity based on research shows that the frequency of use of e-learning media is still not maximally utilized by lecturers and students at STKIP PGRI Lumajang Economic Education; it is not because of the limited competence of lecturers but the ease in examining assignments given to students if given in print version. Enthusiastic students is high in the use of e-learning media but not matched by the ability and economic competence in the use of e-learning.

3.3 Media E-Learning as an Environmental Education Support

The quality of learning is the main thing that must be addressed in order to improve the quality of education. In this regard, [16], argues learning is basically an academic activity in the form of communication interactions between educators and students. This process is a professional process that relies on scientific principles.

According to [18], the quality of education can be seen from two sides, namely the normative and descriptive aspects. In the normative aspect, quality is determined based on intrinsic considerations, the quality of education is an educational product, that is, people who are educated according to ideal standards. Whereas based on extrinsic criteria, education is an instrument to educate a trained workforce. As for the descriptive meaning, quality is determined based on actual conditions such as the results of learning achievement tests. Based on previous exposure, so researchers obtain indicators of learning quality:

a. The suitability of learning, learning activities must be in accordance with the relevance of science and environmental needs of students.
b. Having an attraction, learning activities can attract students' tendency to continue learning.
c. Effectiveness, learning activities can be captured and stored by students for a long period of time.
d. Efficient, learning activities have a fast time to be accepted by students.
e. Learning productivity, students have the same opportunities so they can be encouraged to play a more active role.

As stated by [2] ... the objectives that induce universities to adopt the online form of teaching are mostly related to elevating the quality of traditional Didactics with the support and integration of communication online. The quality of education can also be seen from the use of the latest technology in learning activities.

Environmental education has an important role in the preservation and improvement of the environment in the world, in realizing sustainable living. The basic aim of environmental education is to make individuals and communities understand the complex nature of nature and the environment built from the interaction of their biological, physical, social, economic and cultural aspects, gaining knowledge, values, attitudes, and practical skills to participate in a responsible way and effective in anticipating and solving environmental problems, and in managing environmental quality. Every education organizer from basic education, secondary education to tertiary education must be able to invite and introduce students to understanding the current natural conditions. It aims to increase the awareness of students to be more sensitive to current natural conditions.

Environmental education is not only focused on throwing trash in its place or growing vegetables which have been a common thing that is taught at the basic education level. In explaining environmental education, students must also be aware of the fulfillment of needs that utilize natural resources. Is there any substitution of raw materials of supplying those needs? Or is there a solution to minimize the use of natural resources in supplying the needs?

Technology can be one solution to preserve the environment. Learning activities using technology-based media can support preserving nature. In the industrial era 4.0 requires the public as well, especially in the world of education to master technology. In addition to improving the quality of education, it is also able to improve the quality of the environment. Actually, the use of paper does not directly damage the environment but excessive use and continuous if not balanced with replanting it will have a negative impact on the environment.

Data contained in this website ditjenppi.menlhk.go.id:

... the use of paper every day there must be only our activities that require the use of paper. Without knowing every 15 reams of A4 size paper requires raw materials of one big tree. Imagine if hundreds of millions of people use it at least 10 sheets of paper in one day, required logging hundreds pohon. It means the existence of threatened forests. Lowland forest in Sumatra, between the years 1990-2000 was gone almost 65-80% from felling trees for plantations and industrial tree plantations to produce pulp to meet the needs of our paper.

If the view of the data presented by ditjenppi paperless concept in the digital age should be realized as a whole to support the existence of nature in the days to come. Growth in the number of people increases also increase the demand as well as demand for paper and wood-based needs.
Figure 1. World Paper Production Distribution (approximately 391 million tonnes)
Source: PPI in Skogsindustrierna, The Swedish Forest Industry Facts and Figures 2009

From the graph it was found that the largest paper production was occupied by Asia by 40%. The increase in using online media has not hampered the development of the country's pulp and paper industry. Aside from the low consumption of the country, the world community's demand for paper is still high. This has caused the potential of the pulp and paper industry in the country to be still very large, conveyed by the Ministry of Industry in 2016.

Figure 2. World Paper Production by Type (about 391 million tons)
Source: PPI in Skogsindustrierna, The Swedish Forest Industry Facts and Figures 2009

Percentage of paper needs Printing and Writing Paper around the world by 30%, the second highest number after Corrugated Material 33%. From these data the awareness of realizing the concept of paperless in the digital era should be further enhanced. The emergence of online learning or e-learning actually facilitates learning activities. Space and time are no longer a problem; technology also provides unlimited storage space.
As stated by Rickered (2016):

“Online learning saves paper by providing digital curriculum, assignment, textbooks, and other materials. According to the National Wildlife Foundation, paper represents more than 60% percent of the waste produced by educational institutions. Every ton of wasted paper translates into the death of 16 large trees. In addition, paper manufacturing is the third largest drain on fossil fuels among all industries.”

E-learning in Economic Education provides a new atmosphere for lecturers and students where e-learning as a medium to support the quality of learning is able to create the effectiveness of learning activities because the material presented can be stored by students for a long period of time while creating the efficiency of learning activities because it can save time and travel costs so that student learning productivity can be created because each individual has the same opportunity to play a more active role. The e-learning media as a support for environmental education in STKIP PGRI Lumajang has begun to be implemented. There are deficiencies in student competence and the economic situation of students in the Economic Education study program in implementing web-based learning and in terms of lecturers' old habits which are difficult to change. So the concept of paperless as an effort to support environmentally friendly learning has not been fully achieved.

4. Conclusions

Based on the research findings it can be concluded that environmental education is important to give students awareness of environmental sustainability through technology-based learning habits in this case the use of e-learning. The paperless concept still cannot be implemented optimally due to the difficulty of changing old habits in terms of teaching as well as the limited competence of students of economic education study programs at STKIP PGRI Lumajang in the application of learning through the website. The application of e-learning media by lecturers is only 33.3% and mastery by students is only about 46.2%. So that the use of e-learning as an effort to support environmentally friendly learning can be realized when the lecturer and students are able to understand the importance of environmental impacts caused when the amount of paper consumption is not changed and is not responsive to the ease of technology provided in learning activities. Starting with you gives benefits to the ongoing environment around now and in the future.

Advice can be given as follows: (1). For economic education courses should be more active to promote e-learning for faculty to be raised evenness of learning with the use of technology integrated. (2) For students of economic education in STKIP PGRI Lumajang to always keep the motivation and seriousness in learning to use e-learning media.

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References
[1] Arsyad Azhar 2011 Media Pembelajaran Jakarta: PT Raja Grafindo Persada
[2] Capogna Stefania 2012 University and E-learning Classes in Italy E-learning and Digital Media Vol 9 Numb 2 http://dxdoi.org/102304/elca201292143 (online) www.wwwords.co.uk/ELEA downloaded on August, 1st 2019

[3] Clark R C & Mayer R E 2008 E-learning and the science of instruction: proven guidelines for consumers and designers of multimedia learning Second Edition San Fransisco: John Wiley & Sons, Inc

[4] Indah Restu 2014 Dampak Penggunaan Kertas dan Tisu Bagi Hutan (online) suarasurabaya.com accessed on May, 5th 2019

[5] Jayatri Fidyah dkk 2019 Proceeding of The ICECRS: Penggunaan E-Learning sebagai Media Penguajian Mutu Pembelajaran di Prodi Pendidikan Ekonomi STKIP PGRI Lumajang Sidoarjo: UMSIDA Press

[6] Karwati Euis 2104 Pengaruh Pembelajaran Elektronik (E-learning) terhadap Mutu Belajar Mahasiswa Jurnal Penelitian Komunikasi Vol 17 No 1, Juli 41-54

[7] Minimalkan Penggunaan Kertas Online dit jenppimenlhkgoid diakses pada 5 agustus 2019

[8] Munir 2009 Pembelajaran Jarak Jauh berbasis Teknologi Informasi dan Komunikasi Bandung: Alfabeta

[9] Prasojo Diat Lantip dan Riyanto Teknologi Informasi Pendidikan Yogyakarta: Gaya Media

[10] Prawiradilaga, Dewi, Salma dkk 2013 Mozaik Teknologi Pendidikan E-learning Edisi Pertama Jakarta: Kencana Prenada Media Group

[11] Rickerd, Kristie 2016 Five Key Reasons E-Learning is A Green Option Online accessed http://www.linfield.edu/dce/blog/five-key-reasons-e-learning-green-option/ Linfield College

[12] Sadiman, Arief S 2010 Media Pembelajaran Jakarta: PT Raja Grafindo Persada

[13] Saifuddin, Fuad 2017 E-learning dalam Persepsyi Mahasiswa Jurnal Varia Pendidikan, Vol 29 No 2 Desember 2017 (online) downloaded on January, 12th 2019

[14] Shannaq, Boumedyen, Fouad Jameel Ibrahim, Richmond Adebiaye 2012 The Impact of The Green Learning on The Students Performance Asian Journal of Computer Science And Information Technology 2: 7 (ISSN 2249 – 5126)

[15] Soekarwati, A Haryono dan F Librero 2002 Greater Learning Opportunities through Distance Education: Experiences in Indonesiand the Philippines Journal of Outeast Asian education 3 (2) ISSN: 1513-4001

[16] Suhardan Dadang 2010 Supervisi Profesional (Layanan dalam Meningkatkan Mutu Pengajaran di Era Otonomi Daerah) Bandung: Alfabeta

[17] The Swedish Forest Industries: Facts and Figures 2008 Online downloaded on August, 2nd 2019

[18] Toatubun, Fathul, Arifin, dan Rijal, Muhammad 2018 Profesionalitas dan Mutu Pembelajaran Ponorogo: Uwais Inspirasi Indonesia