

# Media Literacy of E-Learning System in State Universities

Aulia Puspaning Galih\*, Anita Tri Widiyawati, Lestari Eko Wahyudi

Department of Public Administration  
Universitas Brawijaya  
Malang, Indonesia

\*auliapuspa@ub.ac.id, anitatriw@ub.ac.id, lestariekow@gmail.com

**Abstract**—Media literacy of OU and UB e-learning users is very important because in the learning process through e-learning system demands independency from the students who are fostered directly by the lecturers or tutors. E-learning system of OU and UB both use Moodle application. In using of Moodle application, users are required to be able to master learning medias, such as television, radio, internet, video, ppt, chat, quizzes, and other learning media devices simultaneously. The low literacy ability of e-learning media can affect the ability of courses taken. The research method used is mixed methods. The results of this study are media literacy of e-learning users of the Open University and Universitas Brawijaya: 1) Knowledge structure of students and tutors/lecturers in UB and OU is good; 2) Personal locus of students and tutors/lecturers in UB and OU is good; 3) Competencies and Skills of students and tutors/lecturers in UB and OU is good; 4) Information Processing Task Flow of students and tutors/lecturers in UB and OU is in good category for the tutors/lecturers, but the students are in bad category. This topic can be expanded with more universities as sample of the research.

**Keywords**—*e-learning, media literacy, education, state university*

## I. INTRODUCTION

Distance education system (DES) which is perceived as a 21st century innovation is an education system that has broadly reached, across space, time, and socio-economics condition [1]. The DES opens access to education for anyone, anywhere and anytime. With these characteristics, the DES is often seen as a solution to various educational problems, especially those relating to equity and democratization of education, as well as expanding access to quality education to all levels of society. Through various legal instruments issued by the government, such as Minister of Education and Culture Regulation No. 24 of 2012 concerning the Implementation of Distance Education in Higher Education, Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, Government Regulation Number 17 of 2010 concerning Management and Implementation of Education which was later amended by Government Regulation Number 66 of 2010, and Law Number 12 of 2012 concerning Higher Education, the PJJ

system has become an integrated part in education system in Indonesia, and has become the choice of society to gain access to education. This situation opens up opportunities and opportunities for various higher education institutions to actively participate in DES.

In its development, the DES has benefited greatly from the development of media, information and communication technology that can bridge the need for mass education. Rapid technology developments have led to a model of distance education system that is flexible and intelligent, able to open access to education for anyone across space and time, as well as overcome various socio-economic constraints [1]. Electronic learning (e-learning) is a learning process that utilizes electronic information packages for the benefit of learning and education, which can be accessed by students, anytime and anywhere on an ICT basis. Based on those reasons, every higher education institution competes to provide access to e-learning system in the learning process. Likewise, OU and UB are trying to provide the best learning by utilizing e-learning in supporting a quality learning process.

Open University (OU) implements distance and open learning systems. The term “distance” means that learning is not done face-to-face, instead uses media, both print media (modules) and non-print (audio/video, computer/internet, radio broadcasts, and television). The “open” meaning is that there are no restrictions on age, year of diploma, study period, registration time, and frequency of taking exams. The only limitation is that each OU student must have completed high school or equivalent.

OU students are expected to be able to study independently. How to learn independently requires students to learn on their own initiative. Independent learning can be done alone or in groups, both in study groups and in group tutorials. OU provides teaching materials that are designed to be independently studied. In addition to using teaching materials provided by UT, students can also take the initiative to utilize other reading materials in the library and e-library. If the students experience learning difficulties, students can request an assistance from the Open University Distance Learning Program Unit (DLP-OU) [2].

The main problems of e-learning at OU are the inactivity of students in responding to tutors' initiations in discussions, as well as students being less active in collecting assignments given by tutors. Lack of student understanding of e-learning systems is a major obstacle in the success of e-learning. Most of tutors complained about the lack of active students in the learning process by using e-learning.

Universitas Brawijaya (UB) also has an *e-learning* system ([vlm.ub.ac.id](http://vlm.ub.ac.id)) in supporting the distance learning process. The faculty which is actively using e-learning system is Faculty of Computer Science, because that faculty is part of the pioneers in Universitas Brawijaya in utilizing information technology including vlm.

There are two types of e-learning, namely e-learning as distance learning (DES) and e-learning as a supporter of conventional learning systems [3]. UT's e-learning is included in the type of e-learning system as distance learning (DES). While UB's e-learning system is included in e-learning as a supporter of conventional learning systems. However, regardless of the type of e-learning, the two types of e-learning need to know the extent of the media literacy ability of its users.

One of the causes of the emergence of the e-learning system in Indonesia is because the development of the system of learning that is student oriented (student centered learning). The system of learning is emphasized in the process independent study so the tutors only have supporting role. Students can be actively learning by using a variety of facilities and sources of information, while the tutors' duties are to deliver, direct and monitor the students' progress. To integrate a student-centered learning process with e-learning system requires a complete tool that is well coordinated in certain matters. The tool referred is the availability of infrastructure that can facilitate the implementation of e-learning itself, as well as the existence of academic condition that supports the creation of the SCL climate in universities. This cannot be separated from the performance of the Rector, Deans, lecturers, staff, and students themselves with different cultures and styles in each fulfillment of their learning needs [3].

## II. LITERATURE REVIEWS

Open University made a Tutorial Activity Design (RAT), Tutorial Activity Unit (SAT), and compiling all materials for 8 initiations. The implementation of the online tutorial was carried out in 8 initiations. One initiation runs for one week. Every initiation there is an initiation and discussion. At initiation 3, 5, and 7 there are tasks that students must do. Formative evaluation is assessed by being active in participating in discussions and working on assignments, while summative evaluation is combining the value of discussions with assignments. Tutors face several obstacles, such as, limited access, underactive students, too many classes, and network security [4].

Ratmilah's research [5] shows that the learning process in using e-learning system is very supportive of lectures in the

classroom. The lecture process is not limited by space and time, students and lecturers can, whenever and wherever, do the learning process. Students can easily access material from lecturers who have been presented in e-learning system. Interaction and communication between lecturers and students are also more easily established [6].

Wijaya's research shows that (1) The policy underlying e-learning system originates from the 2005-2009 strategic planning policy, the 2010-2014 strategic planning, the 2005-2025 Long Term Development Plan of the Ministry of National Education, and the implementation of the 2013 Curriculum; (2) Implementation of e-learning, in terms of Human Resources is still minimal use of e-learning system, the lack of teaching and learning materials, infrastructure is good in terms of hardware and software owned by schools; (3) The implementation of e-learning system has not been going well; (4) Factors driving the implementation of e-learning system are motivation in the of the Internet is very large, both from tutors and students, the infrastructure owned is sufficient for the implementation of e-learning system. Inhibiting factors are the limited ability of teachers to apply e-learning learning in schools, human resources that have not been optimal in the implementation of e-learning implementation, and awareness of all parties in the importance of e-learning system in advancing education in schools still a little bit.

If seen from the three studies regarding the implementation of e-learning system above shows that e-learning system is very supportive of a quality learning process. However, there are still many problems that arise that need in-depth study. This research answers the problems that arise that have not been answered by other similar studies that is related to media literacy.

There is also research on media literacy. For example, research conducted by Adiarsi, Stellarosa, and Silaban [7] explains that the use of internet media among private university students in Jakarta is either with a smart phone or computer. The aim is to find out the extent of the use of the Internet in connection with media literacy. Internet that is easily accessible makes users need education or media literacy in the use of media access, so they can know the purpose and benefits that can be taken from what is accessed.

It shows that media literacy is very important to be mastered. Research on media literacy related to e-learning has not been conducted. Media literacy that has been carried out is still partial. Media literacy of e-learning system combines all media in one online learning process. So that requires understanding from all media in supporting the success of e-learning. In accordance with the background that has been described previously, the purpose of this study is to analyze the media literacy of e-learning users at the Open University and Universitas Brawijaya.

## III. METHODOLOGY

Mixed methods were used in this research to get more comprehensive research results. Mixed methods were research

designs that are carried out with assumptions and research methods that unite the quantitative and qualitative approaches in one study that aims to get better results than using only one approach [8]. In this study, quantitative data was collected first, the results were coded and analyzed, and then from the results of the quantitative data, it was proceeded to search for qualitative data to strengthen the results of quantitative data while looking for facts that could not be obtained only through questionnaires.

Data collection techniques used to obtain data in the form of numbers and personal opinions from research participants. To obtain quantitative data, survey and observation methods were used, while to obtain qualitative data, interview, observation and documentation data collection methods were used. The number of respondents were 100 people from OU and UB, while the informants on qualitative research methods were 9 UT students, 9 UB students, 5 UB lecturers, and 5 UT tutors.

This study used two types of data analysis, the first was statistical data analysis and non-statistical data analysis. This data was processed using SPSS to describe the actual state of the study sample. While non-statistical data analysis is used to process data that are not numbers. Qualitative data were analyzed with several activities, such as, data reduction, data display and conclusion drawing or verification [9]. While quantitative data is firstly coded, validity and reliability are tested, data presentation and data analysis are tested.

#### IV. RESULTS AND DISCUSSION

Distance education functions to provide educational services to groups of people who cannot attend face-to-face or regular education [3]. This statement is emphasized again in Law Number 12 Year 2012 article 31 paragraph 2 concerning Higher Education that in addition to providing Higher Education services to community groups who cannot attend face-to-face or regular education, distance education aims to expand access and simplify Higher Education services in education and learning.

Meanwhile, Government Regulation of the Republic of Indonesia Number 17 of 2010 concerning Management and Implementation of Education (article 118 paragraph 1) states that distance education aims at increasing the expansion and equitable access to education, as well as improving the quality and relevance of education. In line with that, Regulation of the Minister of Education and Culture of the Republic of Indonesia number 24 of 2012 concerning the Implementation of Distance Education in Higher Education, in article 2 stated that distance education aims to increase the expansion and equitable access to quality and relevant education as needed. Thus, the implementation of distance education must be in line with the functions and objectives that have been formulated in the applicable legislation, namely to expand and spread access to quality education that is relevant to the needs of the community. In general, the principles of organizing DES include access, equity, and quality.

#### A. Demographic Data

In table 1 it can be seen that the majority of respondents are in the age range of 17-26 years, a total of 52%. 29% of respondents aged between 27-36 years. The remaining 12% and 7% are in the age range of 37-46 years and aged 47 years and over.

TABLE I. AGE OF RESPONDENTS

Age	Frequency	Percentage (%)
17-26	52	52
27-36	29	29
37-46	12	12
≥47	7	7
Total	100	100

Table 2 presents data on employment of respondents. Researchers only made two options because the subjects of this study were university e-learning users, that are lecturers and students. 59% of respondents are students, while the remaining 41% are lecturers.

TABLE II. OCCUPATION OF RESPONDENT

Occupation	Frequency	Percentage (%)
Lecturer	41	41
Students	59	59
Total	100	100

Table 3 presents the results of demographic data regarding the origin of the respondents of this study. Respondents from Universitas Brawijaya and Open University are 50:50 in order to get balanced data between e-learning users for this research.

TABLE III. UNIVERSITY OF RESPONDENT

University	Frequency	Percentage (%)
Universitas Brawijaya	50	50
Open University	50	50
Total	100	100

#### B. Media Literacy of E-Learning Users at OU and UB

The researcher made 13 detailed questions. The coding of the questionnaire question items in this section is L1-L13.

**TABLE IV. MEDIA LITERACY OF E-LEARNING USERS IN OU AND UB**

Item Questions	University Origin	N	Mean	P value
L1	UB	50	5.72	.207
	OU	50	5.38	.208
L2	UB	50	5.66	.058
	OU	50	5.12	.058
L3	UB	50	5.54	.061
	OU	50	5.00	.061
L4	UB	50	5.52	.254
	OU	50	5.16	.254
L5	UB	50	5.64	.86
	OU	50	5.18	.087
L6	UB	50	6.08	.792
	OU	50	6.14	.792
L7	UB	50	5.96	.807
	OU	50	6.02	.807
L8	UB	50	5.90	.410
	OU	50	6.10	.410
L9	UB	50	5.40	.716
	OU	50	5.30	.716
L10	UB	50	5.56	.938
	OU	50	5.58	.938
L11	UB	50	5.82	.977
	OU	50	5.44	.977
L12	UB	50	5.64	.860
	OU	50	5.60	.860
L13	UB	50	5.64	.723
	OU	50	5.56	.723

From the thirteen item questions made in Table 4, it can be seen that all question items have  $p\text{-value} > 0.05$ , which means that those 13 questions have no significant difference in the survey results of respondents from Universitas Brawijaya and Open University.

The highest mean value (6.08) from the results of Universitas Brawijaya respondents is on item L6 questions that discuss the ability to search for information on the Internet. While the lowest mean value (5.40) is in the question item L9 which discusses the ability of respondents to handle difficulties in using e-learning without the help of others. This means that although respondents from Universitas Brawijaya are able to find information easily on the Internet, but if they face difficulties in the e-learning system, respondents still need help from others.

The highest mean value (6.14) from the results of the questionnaire distributed at the Open University is on item question L6. L6 is a question that addresses the ability of respondents to find information on the Internet. While the lowest mean value (5.00) is generated from L3 question items that discuss the respondents' basic knowledge of the use of

additional media in the use of e-learning. This means that although respondents are able to use the Internet well, they lack knowledge in the use of additional media, such as the addition of other files, which are found in the e-learning system.

The definition of literacy is the ability to read and write; knowledge that relates to a specified subject. The term literacy in Indonesia is usually called literacy or free of illiteracy. Literacy that used to be limited to the ability to read and write, has now developed along with the development of technology and information also in context, with the main goal of preparing individuals to participate in society [10].

Media as a tool or means used to convey messages from communicators to the public. Some of these opinions can be concluded that what is meant by the media are tools or means used to convey messages, both in printed form and in non-printed or electronic form [11]. The media has several forms such as those classified by Robert Heinich et al in Pribadi and Yuni [12] as follows: non-projected visual images, projected images, sound media; multimedia system, film, television, and computer. It is also mentioned the following media classifications: print media, media on display, voice recording, film strips, multi-picture presentation, videos and films, and computer based learning.

Media literacy is the ability to access, analyze, evaluate, and communicate messages. This definition means that media literacy is the ability to access, analyze, evaluate, and convey messages [6]. The UNESCO Institute for Information Technologies in Education (IITE) explains that as with the term media itself. media literacy has many definitions. here we take the view that the core of media literacy is an analytical attitude toward the media environment. being media critical and a courage to express oneself through media [13].

Literacy theory has four main factors: the structure of knowledge, personal locus, competencies and skills, and the flow of information processing tasks. each of these factors works interactively in a system [14].

E-learning refers to the use of internal technology to deliver a broad array of solutions that enhance knowledge and performance [15]. This understanding explains that e-learning refers to the use of internet technology to provide broad solutions to improve knowledge and performance. E-learning is essentially a form of conventional learning as outlined in digital format and presented through information technology. Based on the definitions explained, e-learning can also be interpreted as an abbreviation of Electronic Learning, or in free translation it can be interpreted as electronic learning. Electronic learning means that the learning system is based on electronic devices/media [16].

Rusman, et al [17] mentioned four characteristics of e-learning as follows:

- **Interactivity:** the availability of more communication channels, either directly, such as chat or messenger or indirectly, such as forums, mailing lists or guest books.

- **Independency:** flexibility in aspects of providing time, place, instructor, and teaching material. This causes learning to be more centered on students (student-centered learning).
- **Accessibility:** learning resources become easier to access through distribution on the internet network with wider access than the distribution of learning resources in conventional learning.
- **Enrichment:** learning activities, presentation of lecture material and training materials as enrichment, allows the use of information technology devices such as video streaming, simulation and animation.

UT and UB e-learning have fulfilled the four characteristics above. This is because e-learning OU and UB alike use apps Moodle (modular object-oriented dynamic learning environment). Moodle is a kind of software packages produced for the learning activities based on the internet and web sites that use the principle of social constructionist pedagogy. Below are the results of qualitative analysis related to OU and UB e-learning media literacy.

1) *Knowledge structure:* Tutors are required to know the influence of the media, media content, the media industry, as well as the real world and self. In the training process that is done online for 2 weeks. Tutors are required to attend each session. Tutors must enter the system every day. The more frequently entered the e-learning system, the better the value, because the system will automatically record the activities of tutors in e-learning. Tutors have an obligation to practice teaching through e-learning systems. Including doing tasks related to the learning process. For example: compiling SAT (Tutorial Program Unit), RAT (Tutorial Program Design), Rating Rubric; make initiation for 3 times (3 weeks/3 times online tutorial meetings), answer questions, even connect material with other media besides the OU module (for example TV online, online journal, online radio, online newspaper, or other media from the internet). Tutors are required to develop material sourced through other medias.

In addition to tutors required to master the knowledge structure, tutors are also required to be able to manage classes online. So basically distance learning using e-learning is a manifestation of face-to-face learning that must follow the rules of face-to-face lectures. Here it shows that tutors are also required to be able to link the teaching and learning process face to face with the learning process through e-learning. When viewed from the side of students, based on teaching and learning activities in the e-learning system basically students already have a good knowledge structure. Although there are many students who are not active, but there are at least 60% of students who get a minimum grade of 60. Based on observations, lecturers are able to decide on the information needed related to the material and assignments to students. In addition, the lecturer also has a good decision regarding the processing of information needed to make an initiation along with the topic of discussion through e-learning. Feedback from

lecturers must be informed to students through the e-learning system which will be automatically sent to the student's personal email. In addition, students can also respond to e-learning systems that will be sent automatically in tutor emails.

2) *Personal locus:* Tutors and students at OU as well as in UB have good personal locus. Without a good personal locus, tutors / lecturers and students will not be able to carry out tutors' activities through e-learning. Personal locus related to the ability of tutors/lecturers in making decisions related to information needed when carrying out teaching and learning activities through e-learning. Students who do not have a good personal locus will automatically not graduate in online learning activities. If based on the results of surveys and interviews, the personal locus of OU and UB students is in the good category. If based on OU student grade data, no more than 60% of OU students score 60, and only 25% get grades in categories B and A. Many indicators are behind the inactivity of students in e-learning activities, namely: difficult internet access or unstable in the area and the business of students related to their work. Students who are actively participating in e-learning have a personal locus in the good category.

3) *Competence and skills:* In Open University, tutors must have basic competence and skills in processing and processing information that has been obtained. This is related to the processing and processing of information to be disseminated to students during the learning process in the e-learning system and also the processing and processing of information related to policies issued by OU. If from the students themselves, there are some students who can process and process information well but not a few who actually do not have good competence and skills in processing and processing information. Value data shows, no more than 60% of students who score above 60. So this is the background, UT Center issued a new policy. In order to make the teaching-learning process more effective through e-learning.

In Universitas Brawijaya, lecturers must have basic competencies and skills in processing and processing information that has been obtained. This is related to the processing and processing of information to be disseminated to students when teaching and learning face to face and when compiling questions in the quiz as student assignments. If from students themselves, students can process and process information in the form of answers based on questions provided through quizzes uploaded on e-learning.

Tutors / lecturers and students at OU as well as in UB have good abilities and skills in processing the information that has been obtained. Without good skills and skills, tutors / lecturers and students will not be able to carry out tutors' activities through e-learning. Ability and skills related to the ability of tutors/lecturers in giving initiation, answering discussions, and providing feedback on assignments that have been given. Students who do not have the ability and good skills, will automatically not graduate in online learning activities because

this is related to the quality of the work done. The abilities and skills of OU and UB students in both categories. If based on OU students' grade data, no more than 60% of OU students get a score of 60, and only 25% get grades in categories B and A. Many indicators are behind the inactivity of students in e-learning activities, namely: difficult internet access or unstable in the area and the business of students related to their work. Students who are really active in participating in e-learning who have abilities and skills in both categories.

4) *Information processing task flow*: In Open University, tutors have good abilities in terms of filtering information, matching meanings, and constructing meaning. This is because the planning of the tutors' activities at OU itself is already good, although improvements are still ongoing.

Meanwhile in Universitas Brawijaya, the Information Processing Task Flow associated with three information processing tasks is filtering information, matching meanings, and constructing meaning. Based on the results of interviews and observations show that OU and UB tutors/lecturers have competence in filtering information, matching meanings, and constructing meaning in the Good category. However, this is very different from students. Students tend to be less able to filter valid information as a source of reference when working on assignments. Students mostly use blogs as a source of reference in working on college assignments. This will automatically be very influential on the results of matching meaning and meaning development.

## V. CONCLUSION AND FUTURE SCOPE

The conclusion of this study are:

- Knowledge structure of students and tutors/lecturers in UB and OU is good.
- Personal locus of students and tutors/lecturers in UB and OU is good.
- Competencies and Skills of students and tutors/lecturers in UB and OU is good.
- Information Processing Task Flow of students and tutors/lecturers in UB and OU is in good category for the tutors/lecturers, but the students are in bad category.

For the future research, the next researcher can use more universities that have e-learning system to be research sample.

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