

DIGITAL LITERACY AMONG SRIWIJAYA UNIVERSITY LECTURERS

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Abstract

This article aims to describe patterns of digital literacy among Sriwijaya University (SU) lecturer and its contribution to the implementation of eLearning. We used the mixed approach. Our population is 635 subjects which have been running and organizing through e-learning plat-form of SU. We, then, selected 30 lecturers randomly as our samples. Data were collected through offline and online questionnaires, in-depth interviews, and secondary data collection. Likert Scale is used to measure digital literacy among respondent and e-learning implementation is explained using SIMPLE model. We find that digital literacy competence among SU lecturers is in a high position. This situation is the initial capital for the implementation of e-learning at SU. However, this situation has not contributed to the implementation of e-learning because of (a) lecturer is not willing to adapt to the e-learning environment system; (b) policy makers have not been intervening several factors that contributed to e-learning implementation at university level.

Abstrak

Artikel ini bertujuan menggambarkan pola literasi digital di kalangan dosen Universitas Sriwijaya dan kontribusinya terhadap implementasi e-learning. Artikel ini berasal dari penelitian empiris yang menggunakan pendekatan campuran (kualitatif dan kuantitatif). Populasi penelitian adalah 365 mata kuliah yang telah dijalankan dan diorganisir dengan platform e-learning yang diadopsi Universitas Sriwijaya. Dari populasi ini, peneliti memilih 30 dosen secara acak sebagai sampel penelitian. Data dikumpulkan dengan menggunakan kuesioner online dan offline, wawancara mendalam, dan pengumpulan data sekunder. Skala Likert digunakan untuk mengukur tingkat literasi digital responden penelitian. Sedangkan implementasi e-learning dijelaskan dengan model SIMPEL. Kami menemukan bahwa tingkat literasi digital dosen Universitas Sriwijaya berada pada posisi yang tinggi. Situasi ini merupakan modal awal untuk mengimplementasikan e-learning di Universitas Sriwijaya. Tetapi, situasi ini belum berkontribusi terhadap implementasi e-learning karena (a) para dosen belum bersedia beradaptasi dengan lingkungan sistem e-learning; dan (b) para pembuat kebijakan belum mengintervensi beberapa faktor yang berkontribusi terhadap implementasi e-learning di level universitas.

Keywords: *eLearning, Digital Literacy, Higher Education, Indonesia, Sriwijaya*

INTRODUCTION

Sriwijaya University (SU) is very enthusiastic in adopting information and communication technologies (ICT) to support its function as a higher education institution. SU creates three policies related to ICT development, i.e., (a) encouraging and facilitating ICT-based learning process; (b) promoting institutional capacity building in planning, management, and implementation of performance-based services; and (c) improving and developing the capacity of manager and administration staff (Unsri, 2014). Related to the first policy, SU has encouraged their lecturers to apply a blended approach (integrating e-learning into conventional learning system). To support this policy, SU has launching e-learning grant which has been running since 2012. As a result, SU has 635 subjects course enrolling in e-learning platform and choose Moodle® as an e-learning platform. Based on a total number of subject's course which is running through e-learning platform, faculty position in e-learning ranking at Sriwijaya University could be made as follows: Faculty of Engineering (143 course), Faculty of Computer Science (127 course), Faculty of Agriculture (114 course), Faculty of Mathematic and Natural Science (67), Faculty of Medicine (46 course), Faculty of Economics (26 course), Faculty of Law (14 course), and Faculty of Social and Political Science (13 course) (Unsri, 2014). It indicates how social science cluster does not have many courses that running through e-learning system. While natural science cluster has many subject courses, which have been running through e-learning system. This data show that digital divide is no longer meaningful as "the have" and "the have not", but it is the problem of "using" and "not using" e-learning system. If the number of credits for one undergraduate program is 144 credits, and each subject course has three credits, then a total number of course for each undergraduate program is 48 courses. Because SU has 56 undergraduate programs, then the total number of courses is 2,688. Based on this calculation, SU has 24 percent

subject course which is organizing through the e-learning platform.

The low penetration of e-learning at SU, especially in the cluster of social sciences, is the serious problem. It is one of the obstacle for SU to maximize utilization and ICT integration to achieve their mission. As a higher education, SU has no option but to reconsider its objectives in the light of growing societal demands and new sociocultural trends. The changes demanded for higher education are based on a social need to make it scientifically and economically beneficial (Pons, 2010, pp. 6–15). New technology, new generation, and new environment need innovation in learning process. ICT literacy required to navigate the twenty-first century has to do with recognizing our own human limitations, developing critical measures and acknowledging feelings of estrangement, puzzlement as well as sheer wonder of technology (Riis, 2015, pp. 385–394). SU will losses their market if they do not make adjustment in their business.

In the digital environment, student can learn from many sources. However, the role of teacher still important to support this process (Erstad et al., 2015, pp. 641–654). The problem emerges when the teacher does not have enough competency to managing digital resources in learning process. For example, e-learning environment requires all teacher to make digital contents using a specific software. Of course, it is not an easy task, especially for a teacher who just familiar with Microsoft Office software. They also have to find, collect, select, choose, and recreate various digital information to support e-learning. This process is very time-consuming. It is why, for SU, very urgent to get an overview on digital literacy of their lecturers so that they can full engagement in information society. This paper is designed to elaborate this phenomenon. Our focus is to construct the pattern of digital literacy among SU lecturer and identify factors that contributed to e-learning implementation.

Like other terminology in social science, digital literacy has a different meaning for different people. Ilomäki et. al., (2014, pp.

655–679) found a total of 34 terms that had used to describe the digital technology related skills and competences. Oxford English Dictionary (2014), for example, defines literacy as a person's ability to read or write. Meanwhile, the digital term has many meanings and can be simplified as everything related to digital technology. However, according to Ensmenger (2012, pp. 753–776), digital technology does not necessarily connote a computer technology. Thus, digitization is not always meaningful computerization. Digitizing a broader meaning than computerization. Therefore, there is not all digital devices shaped computer.

Digital literacy can be defined as the ability and the skills necessary to access the available digital technology and to engage in the practice and digital culture (ACRL, 2014; Jaeger et al., 2012, pp. 1–20; Meyers et al., 2013, pp. 355–367).

It is consisting of technical and non-technical issue (Vlieghe, 2015, pp. 1–4). For Hockly (2012, pp. 108–112), this concept contains four skill that is related to each other; that is language skill, information skill, connection skill, and re-design skill (see also Davies, 2011, pp. 45–52; Gamire & Pearson, 2006, pp. 19–40; Koltay, 2011, pp. 33–35). The first ability, language skills, relating to a person's ability to process online texts (e.g., blogs, wikis, and discussion in online forums). Included in this category is (a) hypertext literacy (ability to read and use online text navigation that contain hyperlinks); (b) visual and multimedia literacy (the ability to process image, signs, and symbols in the digital media); and (c) mobile literacy (the ability to maximize the functions of mobile phones as a tool for processing digital information). The second ability, information skills, refer to a person's ability to manage the flow of digital information on the internet. Included in this category is (a) search literacy (the ability of a person to seek online information effectively); (b) tagging literacy (the ability of a person to give sign on the digital material so that it is easy to find it); (c) information literacy (the

ability of a person to evaluate and criticize the substance and online resources), and attention literacy (the ability of person to know when he should be online or offline). The third ability, connection skills, consisting of personal literacy (the ability of a person to manage digital identities on the Internet), network literacy (the ability of a person to build the online network that fit their needs), and participatory literacy (the ability to create digital content that is distributed online). The fourth ability is re-design skill (the ability to process digital materials into other digital material that can be used for a certain purpose).

Digital literacy is prerequisite for people to participate in the Information Age or the Internet Age. In this era, advances in ICT has changed the way of people to produce, distribute, consume and reproduce information. ICT also creates virtual work, virtual environment, and virtual roles that affect the lifestyle of modern peoples (Bradley, 2010). ICT make long distances, and various social barriers-economic-cultural-politics becomes not fade due to its ability to connect people from the diverse world. This development gave birth to a new generation of mankind, namely digital native (someone who was born, grew up in the era of digital technology, including computers, mobile phones, video games, connect socially with others through text messaging and various social networks) (Brumberger, 2011, pp. 19–46).

Previous research on digital literacy among lecturer has indicated a series of variables can interfere in the appropriation of technologies by teachers, such as a lack of the skills necessary for teachers to perform activities that involve the use of ICT; a lack of knowledge of how to use them didactically; unfamiliarity with digital technologies; not enough time to prepare the activities using the computer; lack of technical support and computer instructors for the teachers themselves and the students; no computer maintenance service; lack of a good and fast network to load websites; lack of collaboration between teachers; lack of

flexibility in curriculum; academics' beliefs and perceptions of what constitutes good teaching in their contexts; cognitive load; socio-demographic factor, workload, self-efficacy; and little confidence that they are able to teach using ICT (Albion et al., 2015, pp. 655–673; Alvarenga et al., 2016, pp. 1–28; Canhoto & Murphy, 2016, pp. 98–106). Since we did not find previous research on digital literacy of lecturer at Sriwijaya University, we suspect that these variables will also affect the digital literacy phenomena at Sriwijaya University even though they are produced by research in different times and spaces.

In education sector, the ICT produce e-learning. It refers to the use of electronic devices for learning, including the delivery of content via electronic media such as internet, audio or video, satellite broadcast, interactive TV, CD-ROM, and so on (Edrees, 2014, pp. 1–14). It necessitates that student-teacher relationships no longer focused on the classic patterns (limited space and time), but develops into a relationship that is more fluid, flexible, dynamic, and always connected virtually (Fearon et al., 2011, pp. 446–450; Smith, 2015, pp. 189–198). Previous studies has showed a series of variable that influence e-learning, such as infrastructure, access, curriculum integration, students learning, teacher professional development, leadership and capacity building, academics' low digital fluency, various views and e-learning definitions, limited standards-based tools to guide academic practice, skeptical perception about e-learning, salary, teaching workload, perceived use of e-learning, educators' reluctance, belief about useful-ness and ease of use (Al-Shboul, 2013, pp. 93–113; Kong et al., 2014, pp. 187–212; Mirriahi et al., 2015, p. 28451; Radovanović et al., 2015, pp. 1733–1749)

To implement e-learning, Wilmes et al., (2008, pp. 126–134) proposed a SIMPLE (student/instructor assessment, inventory, measurement, planning, leadership, and evaluation) model to assessing e-learning adoption which consists of six areas. The first area is (a) assessing the level of student and/or teacher skill in using ICT; (b) identify

the type and form of required ICT in the learning process. The second area is mapping the inventory, especially hardware and software, which are needed or compatible with e-learning environment. The third area is measuring the gap between current condition and the future, both in terms of technology, finance, and learning standards. The fourth area is planning instructional design, e-learning training for student and teacher, and developing broader ICT policy at the institution level. Fifth and sixth area is leadership and evaluation which can occur at all levels of the higher education organization (university, faculty, or department). In our mind, the SIMPLE model is not linear, but a cyclical process. However, leadership is a critical point in this process because it has the power to determine another area could function correctly. In higher education setting which consists two outstanding players: academics and administrator (Middlehurst et al., 2009, pp. 311–329), leadership has a unique function and competencies. Smith & Wolverton (2010, pp. 61–70), for example, finding that there are five leadership competencies at higher education institution at the university level. In department level, Bryman (2007, pp. 693–710) identify 13 forms of leader behavior that are associated with departmental effectiveness. These competencies are essential to make higher education more responsive to societal demand.

METHOD

We use a mixed approach and survey as research design. We believe that this method will help researcher to show research finding quantitatively and qualitatively. Per definition, a survey is a type of research that aims to explore the opinions, behaviors, attitudes of respondents through collecting samples data derived from specific populations (Crano & Brewer, 2008; Marczyk et al., 2005). We use a Likert scale to measure respondents' attitudes. Our population is all subjects course that has received e-learning grant. Based on this population, we choose 40 subject courses randomly. Because of one

course could be managed by two or more teachers, then will contact the lecturer who is ready to become our informant. We use an offline and online questionnaire to collect primary data by utilizing Google Form.

Secondary data are gathering through interviews with some informants who is determined by the snowball technique. Five lecturers will be in-depth interviewed to explore their view and attitude towards e-learning. Questionnaires are processing with SPSS version 17.00. Some of the techniques of descriptive statistics (frequency table) will be used to analyze the research data. Meanwhile, data from in-depth interviews will be analyzed using Framework (Ritchie & Spencer, 1994). This research has two variables: digital literacy and implementation e-learning. To explain these variables, based on the review of the literature described earlier, we will synthesize arguments from Hockly (2012) on digital literacy and SIMPLE model from Wilmes et al., (2008) on e-learning. To explain digital literacy, we use the individual as the unit of analysis. But, we use individual and institution as the unit of analysis when analyzing e-learning.

RESULT AND DISCUSSION

Characteristic of respondent

Our respondents are SU lecturer who has implemented a blended approach, especially in the undergraduate program and has received e-learning grant from the University. We, then, use the list of e-learning grantee in 2013 and 2014 as a sample frame. The number of targeted sample is 40 people. However, due to technical problems, the returned questionnaires are only 30 people. 11 respondents fill out online surveys at the address: <https://docs.google.com/forms/d/1sxL4jgxXYaBoQq2aITks3NeUuhJIOU43-4NcIYWbVnw/viewform>.

Regarding to sex, our respondent dominated by female (56.7 percent). There is only 43.3 percent male respondent. Based on their age, our respondent consists 5 group: 42-38 years old (43.3 percent), 36-31

years old (30 percent), 30-25 years old (10 percent), 55-43 years old (6.7 percent), and 60-55 years old (3.3 percent). Finally, based on their faculty, our respondent comes from Faculty of Engineering (20 percent), Faculty of Computer Science (16.7 percent), Faculty of Public Health (16.7 percent), Faculty of Education (13.3 percent), Faculty of Mathematics and Natural Sciences (13.3 percent), Faculty of Social and Political Sciences (10 per-cent), Faculty of Agriculture (6.7 percent), and Faculty of Medicine (3.3 percent). Faculty of Economics and Faculty of Law do not participate in our research. If clustered by type of science, the respondent from natural science has more quantity than social science.

Pattern of digital literacy among Sriwijaya University lecturers

The pattern of digital literacy among SU lecturer explaining by the Likert scale containing 16 questions (see Table 1). Each respondent is only asked to select five alternative answers: strongly disagree (1), disagree (2), do not know (3), agree (4), and strongly agree (5). The respondents will obtain the maximum total score is 80, and a minimum total score is 16. Each question represents one of three digital literacy dimensions: information skills, connection skills, redesign skill.

Table 1. Questionnaires item group based on dimension of digital literacy

| No. | Dimension | Questionnaire item |
|-----|-------------------|---------------------------|
| 1 | Information skill | 1, 3, 4, 6, 9, 12, 13, 14 |
| 2 | Connection skill | 2, 5, 7, 8, 15, 11 |
| 3 | Redesign skill | 10, 16 |

We use Microsoft Excel program to record data and analyze data using three methods: (a) total score obtained by the respondent; (b) total score of questionnaire item. The first method will provide the map of digital literacy among SU lecturer. Based on the maximum (80) and the minimum (16) of

score value, we created a digital literacy scale as guidelines for mapping the score obtained by each respondent. This scale consists of five clusters with interval is 16: very low (16-31), low (32-47), middle (48-63), high (64-80), and very high (>80). Based on this scale, we find that (a) 3 percent of SU lecturer has low competency on digital literacy; (b) 43 percent lecturer has middle digital literacy competency; (c) 53 percent lecturer has high competency on digital literacy. The average value of sample (64) means that digital literacy competencies among SU lecturer are in a high position. The second method calculates an average score for each questions item in each dimension. As visualized by Table 2, SU lecturer has a high competency on connection and redesign skill, but small competency on information skill.

Computer, whether desktop, laptop, netbook, become mandatory equipment used by SU lecturers to implement e-learning process. Tablet, earphones, Android mobile phone, modem, projectors, and mouse is optional equipment. For 53.5 percent of respondents, the availability of current hardware, either public or private, is sufficient to support e-learning process. Only 46.7 percent of respondents who consider the availability of current hardware is not adequate. In terms of software, the widest e-learning platform used by SU lecturer is Moodle™. This is not surprising because the university chooses e-learning Moodle as their official platform. In addition to Moodle, there is also a lecturer who use other e-learning platforms, such as Edmodo, Acatar, Blackboard, but the proportion does not reach 15 percent. The lecturers also began to use the official website of SU lecturer, social media (Facebook, WhatsApp, Line, etc.) to support e-learning process. In contrast to hardware, current software is considered not adequate by 53.3 percent respondents. However, 46.7 percent respondents considered this software is adequate.

One of the elements that distinguish e-learning with conventional learning process is digital content. Related to these elements, many respondents have completed their

course with various forms of digital content, both documents, videos, images, and text online. Another distinguishing element between e-learning with conventional learning is the kind of activity of faculty and student activities.

Restriction and supporting factors

We use SIMPLE model Wilmes et al., (2008) to explain the factors that supporting and restricting e-learning implementation at SU. We concluded that there are 3 factors have been supported (leadership, planning, and evaluation) and do not support (inventory, measurement, and culture) e-learning implementation at SU.

In terms of leadership, SU leader at the university level has a strong political commitment to practice e-learning. This is indicated by the provision of e-learning grants to all lecturer from 2013 until now. Unfortunately, the implementation of blended approach so far is perceived as supplemental for conventional learning (BS, interviews, 21/09/2015). There is no legal or administrative decision from the top executive at the university level to interpret legally what is exactly the meaning of supplemental. Unclear guidance, then, often make miscommunication between dean, head of the undergraduate program, lecturer, and student.

The second supporting factor is planning. In this aspect, e-learning manager at the university level has been build design instructional, organize e-learning training for the lecturer, and formulate more widely ICT policy (for example, paperless office, institutional repository, integrated official webmail to Google for Education, etc.). Unfortunately, the university has not given e-learning training to their students. All lecturer should teach Moodle for their student in the first round of e-learning. For BS, e-learning training for students is the responsibility of Center for Career Development and coordinated by Vice Rector III. "There is a direction to organize e-learning training for all student. But, until now, there

Table 2. Total score for each questionnaire based on dimension of digital literacy concept

| | Information skill | | | | | | | | Connection skill | | | | | | Redesign skill | |
|--------------------|-------------------|----|----|----|----|-----|-----|-----|------------------|-----|-----|-----|-----|-----|----------------|-----|
| Question number | 1 | 3 | 4 | 6 | 9 | 12 | 13 | 14 | 2 | 5 | 7 | 8 | 15 | 11 | 10 | 6 |
| Total score | 15 | 19 | 21 | 25 | 20 | 111 | 105 | 121 | 123 | 124 | 139 | 123 | 118 | 120 | 116 | 127 |
| Mean | 117 | | | | | | | | 125 | | | | | | 122 | |
| Median | 120 | | | | | | | | 123 | | | | | | 122 | |
| Mode | 121 | | | | | | | | 123 | | | | | | <i>n.a</i> | |
| Standard deviation | 6 | | | | | | | | 7 | | | | | | 8 | |
| Interpretation | Middle | | | | | | | | High | | | | | | High | |

n.a = not available

is no realization” (interview, 21/09/2015). The third factor that supporting e-learning at SU is evaluation which is conducted per semester by Center for Education Development (CED). “As an operator, we have access to view e-learning activities of each course which running by our Moodle. Until now, there is only 5 percent of total subject course enrolled in e-learning server is inactive” said BS (interview, 21/09/2015).

Meanwhile, based on SIMPLE models, there are three factors which tend to restrict e-learning implementation at SU. First, student/instructor assessment which related to the level of teacher/student ability or skill to operate ICT device. Ideally, before introducing e-learning, the university could make the map of ICT competency that contains information about teacher and student digital literacy. In the classroom, there is only 30 percent of the lecturer who conducts a preliminary assessment of the ability of students to use e-learning. there are several reasons why the teacher does not make preliminary ICT assessment, for example, Moodle has been taught in Computer Application subject course, the student is familiar with computer and the internet so that they can learn Moodle without mentoring. In another side, the teacher makes a preliminary assessment because of they perceived that some students still do not understand and not familiar with e-learning, and the digital divide between student.

The second factor is related to hardware and software needed by lecturer or student to interact in e-learning platform. At the faculty level, as outlined in the above, the lecturers recognized the availability of e-learning hardware, only software that was considered inadequate. However, the university level, SU does not make standardization about hardware and software equipment to be used in e-learning. Meanwhile, in terms of network infrastructure, e-learning at SU has supported by one server as the storage device. Now, this storage remains 9.28 GB left. The third factor is related to the measurement of the gap between the current and the future condition, both regarding technology, finance, and learning standards. Management at university level tends to see that this information in not important so that they give attention to financial and learning standard only.

Beside three obstacles on the above, we also find a definite influence of cultural factors on e-learning implementation at SU, particularly at the lecturer level. BS, an e-learning administrator, said that lecturer adaptation to ICT which can be used to support learning process is very low. E-learning produces a new challenge for all teacher. They should be more creative in selecting and sorting out a variety of digital resources in the learning process. Off course, they need allocation more time to search information on the Internet. The problem is they do not have available time, skill, or device at home, to do this task (interview,

21/09/2015). Additionally, lecturers also complained about personal costs which they should spend to pay internet access from home. Not surprisingly, then, several lecturers suggested a series of policies to remunerate internet cost that spent by the lecturer with personal money. For example, several informants propose cost-sharing, direct payment per semester for each subject course, and procuring original software and hardware.

In our view, lecturer adaptation as manifestation of cultural factor is not a simple thing. Adaptation is not the technical problem only as explained by BS, an e-learning administrator (interview, 21/09/2015). Culture is a mental construct. In our case, it is about value, belief, and norms on e-learning. Culture is also referring to the “total way of live” that guides individual behavior and attitudes (van Heffen & Aschheim, 2003, pp. 289–306). Based on depth interview, we find two type of keys informant opinion that representing their value, belief, and norms on e-learning. The first type is positive perception on e-learning. One key informant said that “Lecturer is a human who has limitation to process information. We need technology to make our lives more productive”, ZM, a young lecturer (interview, 10/09/2015). With a similar voice, SA, a young lecturer said that “today, I think, a teacher is not the only source of knowledge. A student can learn from many sources. Our primary task is not transferring knowledge, but how to guide student to find, collect, analyze, and build knowledge based on their interest” (interview, 12/09/2015). It is supported by RA who said that “we live in the Internet Age. You can sell and buy something through the internet. It is amusing if we still maintain traditional teaching process when our external environment has been changed drastically. We adopt e-learning so that our student more competitive in labor market” (interview, 23/05/2015).

The second type is negative perception on e-learning. AS, a senior lecturer, said that “technology is just a tool. If we can live without tools, then why should we make life more complicated using tools” (interview,

17/09/2015). Meanwhile, HA, senior lecturer, give attention to negative effect of e-learning. “Teaching is not similar to educating. Teaching is a part of the education process which consists of three aspects: cognitive, affective, and psychomotor. E-learning makes the social distance between teacher and student wider. For me, offline interaction is more valuable than online interaction in the education process”, HA (10/09/2015). Finally, NH, a senior lecturer, who teach Islamic religion said that “have you ever read the story of Moses and Khidr in the Qur’an? In this story, Khidr uses a lot of learning media, for example, boat and house. Through this story, the God wants to convey a message to the human being that the learning process will be useful if it organizes offline communication, practicum and dialogical. I know that e-learning can facilitate dialogue, online communication, and practicum. However, I believe that the presence of teachers in the knowledge transfer will make the learning process more effective”, NH (interview, 05/09/2015). This data show how cultural aspect is still important variable to explain e-learning.

CONCLUSION

We use two methods to calculate the level of digital literacy proficiency among SU lecturer. In general, lecturer of SU has high skill on digital literacy. However, SU lecturer has a strong competency on connection and redesign skill, but low competency on information skill. There are two types of ICT equipment used in operating e-learning respondent: hardware and software. On the hardware side, computer, whether desktop, laptop, netbook, become necessary equipment employed by SU lecturers to implement e-learning process. Half of the respondents also use the tablet, earphones, Android mobile phone, modem, projectors, and mouse as optional equipment. Availability of the current hardware, either public or private, is sufficient to support teaching and learning process under e-learning platform. On the software side, Moodle is the most widely used by SU. However, there is also the

lecturer who use other e-learning platforms, such as Edmodo, Blackboard, and Acatar. The lecturer also began to integrate social media to support e-learning process.

Based on SIMPLE model, we conclude that three factors (leadership, planning, and evaluation) supported e-learning implementation of e-learning at SU. However, there is also three factors (student/instructor assessment, inventory, and measurement) restricted it. Furthermore, our study found strong influence between cultural factor to e-learning implementation, particularly at the teacher level. Additionally, lecturers also complained about the high personal costs they should spend to pay for internet access from home. SU lecturer has medium and high proficiency in digital literacy. This situation is the initial capital to trigger e-learning implementation massively. However, this situation would not be helpful if the teacher has not been willing to adapt to e-learning environment system that requires more creative thinking while using a variety of digital resources in teaching and learning.

Our finding supports previous research finding on this topic as mentioned on the above. For SU management, it is important to make special training for their student so that their information skill will increase significantly. SU management could focus on their attention to financing, student/instructor assessment, inventory, and measurement. One of SU's challenge is how to make lecturer thinking more creatively to prepare, manipulated, and exploit digital resources to support learning process in e-learning environment. Cultural factor in our finding is similar with educator reluctant terminology proposed by Radovanovi et al., (2015). They stated that educators' reluctance to adopt new technology as a reaction to the technology's capacity to challenge the educators' legitimacy, expertise, and preferred teaching materials. Although different in context, these findings are similar to Turner (2007, pp. 117-134) arguments about the capacity of ICTs to delegitimize religious authority (Ulama). We know that cultural factor is very difficult to change.

However, human is an immortal learner who can learn from many sources. We believe that this situation will be change gradually if policymaker at SU willing to change it gradually. For example, SU can create a room to facilitate learning process between teachers who have different perception on e-learning.

We know that our research has serious limitation such as too small sample, too simple calculation (descriptive statistics), and simple theoretical framework. We, for example, do not ask how is age influencing level of digital literacy? What is the contribution of lecturer digital literacy level toward e-learning performance? We concluded that our research does not have the power of prediction. Based on this limitation, we suggested other researcher should investigated digital literacy with different framework, theoretical approach, methods, and instrument (Bhatt et al., 2015, pp. 477-492; Greene et al., 2014, pp. 55-69; Keane et al., 2014, pp. 1-13; Rowsell et al., 2016, pp. 121-129; Sparks et al., 2016, pp. 1-33; Steffens et al., 2015, pp. 73-86) so that we can portrait this phenomenon more completely.

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