

Digital Literation Based Learning Strategy in Improving Student Learning Participation in Education in Pandemic Era

Mundir

Jember State Islamic Institute (IAIN)
mundzirrosyadi@gmail.com

Abstract This phenomenological qualitative research aims to analyze and describe the steps of internet-based learning, the underlying learning model, and the experience of lecturers and students while carrying out internet-based learning in the context of strengthening digital literacy. The results showed that internet-based learning in a pandemic situation to strengthen digital literacy must be started by preparing an internet connection, attendance list (online and manual), shared RPS via WhatsApp, pretest / quiz, learning offline / online, then presentation. review the material, posttest / quiz and end with motivation. The learning model used is active learning, a model that can provide special experience for lecturers and students. They always prepare attendance lists and material online, are disciplined, and are accustomed to using the internet. But they still encounter technical obstacles related to the use of digital media and the internet, as well as electricity and digital media disruptions that were difficult to predict beforehand.

Keywords: Internet-Based Active Learning, and Digital Literacy

1. Introduction

The spread of Corona Virus which is rapidly increasing its status to become a Pandemic. COVID-19 virus is a health crisis that has the most victims, especially in New York, USA, This is certainly the first and priority concern in various countries. As a result, the state's situation is not normal. Both economic, political, social life. Including the education process. Many educational institutions are closed, student study at home. Based on the ABC News report March 7, 2020, the United States has canceled classes due to school closures occurring in more than a dozen corona viruses. UN data (UNESCO) experienced a sharp increase related to this case, there were 290.5 million students worldwide whose education and learning activities were shifted from face to face (offline) to online.

The presence of Information and Communication Technology (ICT) is the solution to all of these life problems. With it can transform from manual and traditional to digital and modern. Computers (Personal Computers, PCs) laptops, tablets, smartphones, and tablets, are a number of ICT devices that are very familiar to modern humans. Life that was originally run linearly following the old tradition, is now changing drastically following the development of modern science and technology that are all digital and connected to the internet. All these changes are very much felt in daily life [1], business [2], and education [3], especially in higher education [4].

In the midst of a pandemic like this, higher education is demanded to innovate in the field of learning or lectures from traditional textbook-based and offline learning to web-based and online learning. This second type of learning conditions or even requires students to have literacy, a literacy in the field of digital media such as smartphones, social media, computers, and the like. Without digital literacy it is difficult for students to carry out web-based learning. Especially in a pandemic situation that requires teachers to be creative in learning.

Literacy in the 21st century is not just an ability related to reading writing and counting. Literacy based on context has a broader understanding to include the ability to interpret and create various texts, both written on paper and note and digital, such as information on access results on the internet, YouTube, and others [5]. This is digital literacy, creativity and the ability to access and disseminate information through information and communication technology (ICT) and the internet [6]. Digital literacy has 7 basic elements as shown below.

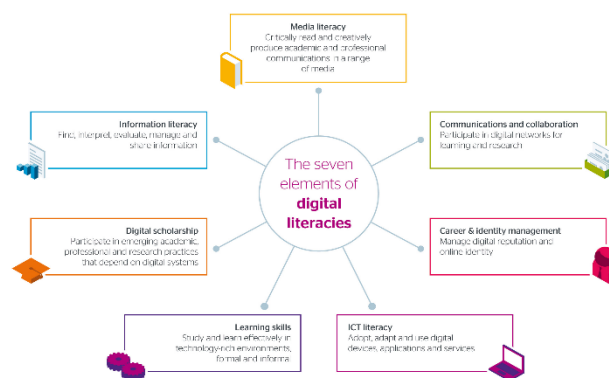


Figure 1: The Seven Elements of Digital Literacy

The Seven elements of digital literacies: (1) Digital scholarship: participate in emerging academic, professional and research practices that depend on digital systems.(2) Information literacy: find, interpret, evaluate, manage, and share information.(3) Media literacy: critical read and creatively, produce academic and professional, communications in a range of media. (4) Communication and collaboration: participate in digital networks for learning and research. (5) Career & identity management: manage digital reputation and online identity. (6) ICT literacy: adopt, adapt and use digital devices, applications and services. (7) Learning skills: study and learn effectively in technology-rich environments, formal and informal.

In learning practice, digital literacy is very close to the web and the internet. Because the web (world wide web) is

a collection of multimedia documents, or various media, which are entered into the internet using the HTTP protocol, the web is software, while the internet is the hardware. So that internet-based learning is very tight with the use of digital devices such as laptops, computers, smartphones, and others by utilizing web software online. In this case literacy is often understood as competence and skills in the computer field, so media literacy (the ability to use media such as laptops, computers, smartphones, etc. for access to information) is often referred to as information literacy [7].

The results of the initial interview with the dean of the Faculty of Tarbiyah and Teacher Training, internet-based learning and e-learning have been initiated since the academic year 20014/2015 by IAIN Jember through a number of workshops and training (Dean of the Faculty of Tarbiyah and Teacher Training Iain Jember, 30 December 2019) . The activity was attended by representatives of lecturers from 5 faculties. Hopefully, the lecturer representative can provide knowledge and experience to other lecturers who happen to not participate and have not been able to carry out internet-based learning or e-learning. The purpose of this activity is to improve the quality of learning. From those that have so far still used the strategy of group paper presentations, power points and laptops, as well as textbooks in an offline condition to an internet-based learning strategy or e-learning that is able to increase the digital literacy of lecturers which has an impact on increasing student digital literacy.

Universities (including IAIN Jember) do have to innovate in the field of learning, both from the aspect of models and sources and learning media that are utilized. One of them is a conditional internet-based learning model. This is realized because a learning model will have an impact on the types of approaches, strategies, methods, and techniques used [8]. While internet-based learning can condition students to skillfully utilize digital media in online learning [9].

Lecturers and students will eventually have personal experiences related to innovative learning, and that experience will be a strong motivation for learning innovation in the form of ICT and subsequently ends in increasing information literacy, media literacy, and general digital literacy [10]

A number of research results have proven it. First, [11] research entitled Phenomenological View of the Teacher's Perceptions of Technology Integration in Jordan. The results show that Jordanian teachers who are the subject of research keep their distance from researchers and are reluctant or even seemingly unwilling to provide information about their perceptions about technology integration in learning, worrying that their weaknesses will be revealed. But finally they began to understand that researchers only collected information that could improve their learning situation by continuing efforts to integrate technology. More computers, better internet access, and increased understanding of what still needs to be done will be the driving force for this change. Finally, they instead recommended an action that must be taken by policy makers, and considered by the Ministry of Education and the Jordanian government, namely the integration of technology in learning.

Second, [12] research entitled Listening to student voices: A phenomenological investigation of the student's

experience of using technology for learning. The results of his research are as follows. 1) Each teacher who is a researched subject offers details of their personal experiences. For them the definition of "technology", are technological features that are worth fun and entertainment. The value of fun and entertainment in computer games is what drives them to get involved with computers. They don't consider the value of education that games can offer. 2) Another value expressed by them regarding technology is the presence of application features that make things easier, for example to write and read on a computer, and access information through the internet. They can use email to communicate with teachers anytime and from anywhere, while still having the moral responsibility of being a digital innovator. They recommend that the responsibility for the use of technology in learning is not only done by teachers and students, but also the school management and the Ministry of Education. 3) From a number of students who identified themselves as heavy users (addicts) of gadgets and smartphones, the results of the interview revealed how quickly their learning outcomes improved and their learning methods were innovated, as well as awareness of how to use technology in life.

Third, [13] research with the title Exploring Teacher Perceptions and Motivations to ICT Use In Learning Activities In Indonesia. The results showed: (1) The teacher has a positive perception of the use of ICT in learning activities. Although they face several obstacles related to facilities and technical knowledge. (2) Factors that motivate teachers to use ICT in learning activities are self-efficacy, and the impact of ICT on teaching. (3) Regarding the intensity of the use of ICT, data shows that computers and the internet, e-mails, slide presentations / PowerPoint, and smartphones are the most commonly used by teachers in learning activities.

Fourth, [14] research with the title Fostering Digital Literacy through Web-based Collaborative Inquiry Learning - A Case Study. The results showed that web-based collaborative inquiry learning (WCIL) can improve students' digital literacy.

Relevant to the four studies above, this study has 3 objectives as follows. (1) Analyze and describe the steps of internet-based learning that can strengthen student digital literacy. (2) The learning model which is the basis for implementing internet-based learning processes in order to strengthen student digital literacy. (3) Analyze and describe the experiences felt and discovered by lecturers and students during the internet-based learning process in order to strengthen the digital literacy of students. The intended students are students who are taking the Research Methods (Qualitative and Quantitative) courses in the odd semester of Academic Year 2019 / 2020 Faculty of Tarbiyah Science and Teacher Training (Faculty of Tarbiyah And Teacher Training) State Islamic Institute (IAIN) Jember.

This research is important because of two arguments. First, this research supports the policy of the Ministry of Communication and Information of the Republic of Indonesia (2018) which was delivered in (a) Press Release No.21 / HM / KOMINFO / 01/2018 dated 31 January 2018 concerning the Joint Launch of 18 Digital Literacy Book Series "Working Together with Stakeholders Indonesian Internet Interests Encourage Indonesian Digital Literacy "(b) Press Release No. 181 / HM / KOMINFO / 08/2018 dated 16 August 2018 concerning Digital Literacy

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Secondly, the Research Methods (Quantitative and Qualitative) courses really need digital media aids that are connected to the internet for the purposes of compiling a proposal and writing research report. Both require relevant previous research articles, references, data analysis, etc. that are very easily obtained and done through the help of digital media online.

The use of digital media online does not mean to rule out the role of offline digital media and non-digital media such as libraries. But the convenience offered by online digital media is far more than that offered by the offline library. In analyzing quantitative research data, for example, students are greatly helped by Statistical Package for Social Science (SPSS) software, Linear Structural Relationship (LISREL), Statistical Analysis System (SAS), Econometric Views (EViews), (Data Jakarta, 2017). Or programs similar to SPSS, such as G * Power, PSPP, R, Regressit, Salstat, Develve, SOFA, Statistical Lab, Statistics, and MacAnova [15]. Whereas in analyzing qualitative data, students were greatly helped by the ATLAS program, Code-A-Text, Ethnographic, Quality 4.0, QDA Miner, and Hyper RESEARCH [16], or other programs.

2. Research Methods

This study uses a qualitative approach and type of phenomenological research. The qualitative approach does not focus solely on visible social phenomena, but on the latent meanings behind individual social behaviors and interactions that encourage the realization of these social phenomena [17]. Therefore, it cannot be explained partially, apart from other symptoms in the system and its unity.

This type of phenomenology was chosen as a knife of analysis [18]. because this research aims to analyze and describe internet-based learning models and processes, as well as personal experiences [19, 20] lecturers and students during their internet-based learning process in order to strengthen student digital literacy. The subject that was being programmed at the time was the Research Methods (Quantitative and Qualitative) course in semester V of the academic year 2019/2020 at the Faculty of Tarbiyah and Teacher Training IAIN Jember,

INSTRUMENTS AND INFORMAN RESEARCH

In qualitative research there are known key instruments. In this case, the researcher acts as a key instrument. The success of this phenomenological qualitative study depends very much on the role of the researcher. The role has been started from the data collection process to the conclusion.

The research informants consisted of the principal, some of the teaching council, some of the teaching staff and some of the students. Data collection techniques used were observation, in-depth interviews, and study of documentation. Determination of informants is determined by purposive sampling techniques and snowball sampling techniques [21].

Observation was carried out by directly observing the learning process of supporting lecturers and students who were programming the Research Method course. The observations focused on how the lecturer conditioned students to use the internet through digital media such as

laptops, cellphones, smartphones, and LCDs. and how students compile papers and make summaries in PowerPoint (Ppt). In-depth interviews were conducted to explore further information related to the results of observations, and look for evidence in the form of documents: syllabus, Semester Learning Plans, and lecture contracts. The rest of the interviews were conducted to dig up information about the experiences of lecturers and students during the internet-based learning process.

Data collected through observation, interviews, and documentation are then analyzed using interactive qualitative data analysis techniques consisting of data condensation, data display, and conclusion: drawing / verifying [22]. Data condensation is actually carried out continuously throughout the study from the time the data was collected until the writing of the report was completed. As a result of data collection, further data condensation is carried out through making summaries, coding, developing categories, producing categories, and presented in the form of brief descriptions, charts, relationships between categories, flowcharts and the like. Conclusion / verification is the third channel in the data analysis technique after condensation and data presentation.

The validity of the research data is carried out by triangulation. Triangulation is a way to obtain valid data by conducting consistency tests through source triangulation, triangulation of methods [23], and confirmability through member check techniques and Focus Group Discussion or Round Table Discussion techniques [24].

3. Results and Discussion

In accordance with the title and focus of the study, the description of the results of the research and discussion is divided into 2 parts, namely about the internet-based learning model, as well as the experience of lecturers and students while carrying out the internet-based learning process in order to strengthen student digital literacy.

Internet-based learning models and processes in order to strengthen student digital literacy. The learning model is a plan, design, or pattern that is used as a guide in planning learning. Learning model is a learning design model that refers to the approach to be used, including strategies, methods, and techniques [25]. Based on the data collected, the learning design model used by the lecturers of the Research Method course is an internet-based active learning model with steps as described in the following picture or flowchart.

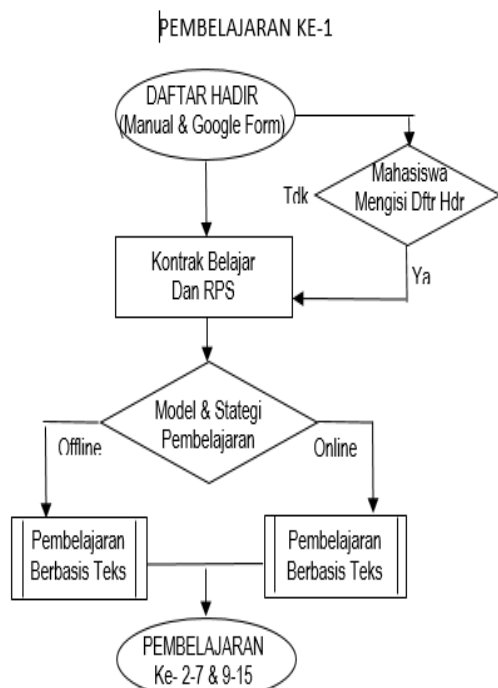


Figure 2: Initial Meeting

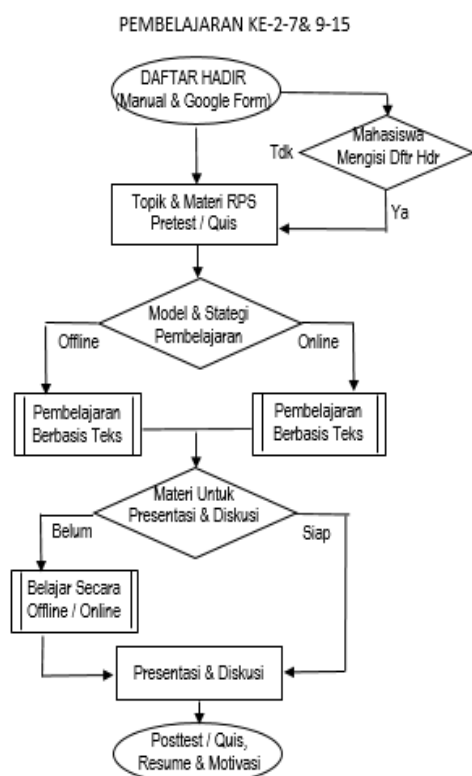


Figure 3: Second Meeting, etc.

The picture presents a number of stages of the internet-based active learning model. Lecturers and students since the initial meeting have been conditioned to be ready with internet devices. The lecturer has prepared a attendance list in the form of a google form (in addition to a manual attendance list) which must be filled out by students online. While the Semester Learning Plan (RPS) prepared by lecturers is shared with student class groups via social

media (WhatsApp) to be analyzed and criticized together, accompanied by pretest or quiz.

Google form and WA are applications that use the digital media connected to the internet. Both of them are part of digital communication conducted between students or between students and lecturers or between lecturers. In both applications there is media literacy and information literacy which are supporting elements of digital literacy of all parties, both lecturers and students. This is in line with the results of research by [26]. The use of digital media and the internet for beginners can indeed be quite difficult. But for those who want to innovate in the field of ICT and learning, all of that becomes a challenge that conditions them towards digital literacy [27]. Lecturers and students realize that the use of the internet for learning can bring benefits such as being present on time, easy access to material, conditioned for collaboration, RPS and group assignments can be known together. But on the other hand there are also weaknesses, for example lecturers must be prepared with the material and online attendance list every time they have a face-to-face meeting, and attendance lists cannot be manipulated.

RPS deliberately shares with students at the initial meeting, so that they are motivated to study independently or in groups, offline and online, at home or in the library. If they want to learn online, of course this requires tools in the form of digital media (laptops, cellphones, or smartphones) connected to the internet. Here students from the beginning of the learning meeting have been conditioned to have media literacy, communication and collaboration as part of digital literacy [28].

The next stage is conducting a learning contract (between lecturers and students). All the rules that can facilitate and hinder the learning process are discussed, then agreed and set forth in a learning contract sheet signed by lecturers and student representatives, followed by the formation of groups and the determination of learning strategies (offline or online) in accordance with the topics or material in the RPS. Students realize the importance of learning innovation through the use of ICT smartly and responsibly [29]

Specifically for the 2nd to 7th and 9th to 15th lessons, after determining the model or strategy for the defense, the next step is the presentation of material or topics according to the RPS by the group that gets their turn at that time. If it turns out that they are not ready, then all students are asked to study offline (textbooks) or online (browsing material on the internet via cellphone) and then present the material. Learning closes with a review of material, posttest or quiz and motivation. In this kind of emergency conditions learning skills are needed so that learning can be effective, and shrewdness or intelligence in utilizing ICT, both of which are supporting elements of digital literacy [30-36].

Based on the results of in-depth interviews, there is a very valuable experience for lecturers. With an internet-based active learning model the lecturer must prepare a list of attendees on the Google form and the material is ready to be uploaded from the beginning before the lecture is held. This, according to them, is not easy or easy, because they have to equip themselves with digital literacy [32] and a number of supporting elements. One of them is the preparation of multimedia content. Digital literacy-based learning for students in tertiary institutions must focus on the principle of andragogy, content in online learning must

be student-centered. Collaboration with peers is another strategy to increase learning and involvement in digital literacy-based learning through online. All of this requires perseverance and special time, as well as collaboration between fellow lecturers related to the material and digital literacy. It's just that lecturers are not versatile with digital media and the internet, so they still have a lot to learn and continue to learn too [34]. Natural constraints sometimes can't be predicted, namely in the form of digital media and trouble internet or power outages. So the learning process cannot go according to plan. Students also feel challenged by this internet-based learning model. They try to attend not too late, because their attendance hours have been recorded automatically through the attendance list in the form of Google form. Armed with a number of literacy supporters of digital literacy, students become actively utilizing digital media (lap top, mobile phones and smartphones) for the sake of learning freely without being limited by space and time as if a flat world exists.

That means, that students are principally happy with the internet. The survey results of the Indonesian Internet Service Providers Association (APJJI) regarding the number of internet users in Indonesia in 2018 mentioned that 171.17 million people had used the internet, and there was an increase of 10.12% from the population compared to the previous year [1]. In terms of education, the number of internet users shows 88.24% are S2 / S3 students, 79.23% are S1 / Diploma students, 70.54% are high school students, 48.53% are junior high students, 25.1% are student Elementary school, and the remaining 5.45 are those who are not in school.

But admittedly or not, students still feel comfortable with the attendance list manually, because it can sign at any time not bound by time. Limitations in the field of digital literacy remain, because there are still students who do not yet have laptops or smartphones. On the other hand, natural constraints often interfere, such as lap top or cellphone with dropped batteries, laptop programs do not support, cannot enter into Google form, data packages run out, power outages, Trouble WiFi, and so forth. That is a plus minus a learning media, both manual and digital. Each has advantages that are not possessed by other learning media, and vice versa.

If the process of active internet-based learning model is associated with digital literacy, and the experience of lecturers and students during the learning process, then the research results can be visualized as follows.

Digital literacy, and the experience of lecturers and students during the process of learning innovation is indeed important, including active learning models that are internet-based learning. However, it should be noted that any active learning and using any sophisticated learning media must remain in the corridor of the formation of physical abilities (healthy), logical ability (intelligent) and character, through an institutionalized socialization and enculturation process, both in formal, non-formal and informal (BSNP) 2010).

4. Conclusion

Based on the results of the data description and discussion, the following conclusions can be drawn.

1. The steps of internet-based learning that can strengthen student digital literacy are as follows.

At the initial meeting, lecturers and students prepare digital media and internet connections since the beginning of the first learning meeting. Lecturers prepare attendance lists (online in the form of google forms and manuals) and Semester Learning Plans (RPS). RPS is shared with student class groups via WhatsApp to be analyzed and criticized together. After that, students work on pretest / quiz, conduct learning contracts, form study groups and determine learning strategies.

At the second meeting and so on, after the lecturer and student determine the model or strategy of the defense, the next step is the presentation of the material or topic according to the RPS by the group that gets their turn at that time. If it turns out that they are not ready, then all students are asked to study offline (textbooks) or online (browsing material on the internet via cellphone) and then present the material. Learning closes with material review, posttest / quiz and motivation,

2. Learning model

The learning model that is the basis for implementing the internet-based learning process in order to strengthen student digital literacy is active learning. Since the beginning, lecturers and students have been demanded to be equally active. Lecturers are required to be active in preparing attendance lists, materials or topics according to the RPS, and guiding the learning process from determining strategy, presentation and (a) discussion, to closing (posttest / quiz, reviewing material, summarizing, and motivation).

3. The experience of the lecturers and students during the internet-based learning process

Positive experience of the lecturer. With internet-based learning, lecturers are conditioned to prepare a list of attendees in the Google form and the material is ready to be uploaded from the beginning before the lecture is held. Lecturers must equip themselves with digital literacy and a number of supporting elements. There is a special perseverance and time for lecturers, as well as collaboration between fellow lecturers related to the material and digital literacy.

Positive student experience. Students are conditioned to attend on time, the attendance hours are recorded automatically through Google form, and become active in utilizing digital media (lap top, mobile phones and smartphones) for learning purposes.

Negative experience of the lecturer. Lecturers are not people who are versatile with digital media and the internet, so there is still a lot to learn about digital literacy and its supporters. It's just that natural constraints sometimes can't be predicted, namely in the form of digital media and internet that is trouble or power outages, so the learning process cannot always go according to plan.

Student negative experience. Students are still comfortable with the manual attendance list, because they can sign at any time. Student feels that there are limitations in the field of digital literacy that still exist, because there are still among those who do not have a laptop or smartphone. Natural constraints often interfere, such as lap tops or cellphones that drop batteries, laptop programs do not support, can't enter into Google form, data packages run out, power outages, trouble wifi, and so on.

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