A Study on Students' Digital Literacy in Reading Comprehension at SMAN 5 Pekanbaru

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ABSTRACT

The objective of this research was to find out how is students' digital literacy at SMAN 5 Pekanbaru. There is one class that was being sample that was consisted of 35 students which were 35 students of class MIPA 2. The instrument of this research was open questionnaire of digital literacy indicators. In this research digital literacy consisted of four factors containing 12 indicators. The first factor and its related operation skills consisted of cognition, invention, and presentation. The second factor was thinking skills consisting of analysis, evaluation, and creativity. The third factor was collaboration skills consisting of teamwork, networking, and sharing. The fourth factor was awareness skills consisting of ethics, legal literacy, and safeguarding self. Students digital literacy can be seen by indicators of digital literacy by find out from students answer on the questionnaire. Most of students who answer in that questions it seems like they understand and have their opinions about learning in digital literacy. These results were employed to develop digital literacy students at SMAN 5 Pekanbaru.

Keywords: Digital Literacy, Reading Comprehension

1. INTRODUCTION

Literacy is one of the most important needs in the world of education that can be owned by everyone, especially in reading, because in order to be able to process and understand information or ideas that is conveyed visually while carrying out the reading process. So, Literacy is the main door to motivate students in reading, namely through education. Each subject teacher plays an important role in developing, strengthening and improving literacy. Students need to be taught how to read various types of written texts and understand the contents of the reading and express themselves related to each subject using a particular vocabulary.

Digital Literacy is an attraction for someone who likes to read, that is understanding and making information with various digital technologies; Digital Literacy includes all digital devices such as computer hardware, software, internet and cellphones. As a teacher, Digital Literacy such as Infocus tools using Power Point is one way of teaching that can make students interested in what the teacher explains and as a system to improve the quality of student education.

In addition, students can used computers and mobile phones at home as a tool in finding new knowledge or looking for those who do not understand home work through the internet provided by the teacher. For example, in giving assignments it will be difficult to evaluate and help students become digitally smarter and Digital Literacy can sharpen critical

understanding and broaden students' insights about the value of social media so they can exchange ideas such as blogging with other online platforms. Digital literacy includes understanding the characteristics and features of digital technology and the effects of digital identity, having the ability to manage, understand, assess, share, and communicate information using digital technology and interact in the digital world safely.

Twing (2013, in Zhang & Zhu, 2016). In fact, not all students have the same ability because there are still many students who are wrong in using digital technology such as playing games so that in understanding content in reading is not sustainable and getting information in various digital systems is still weak. According to Young (2008) states that teachers, students, and the use of technology as a whole depends on how a teacher utilizes technology in the classroom so that the lack of teacher competence is a major obstacle in the application of technological devices in teaching. - learning process. So, digital literacy can be combined to have the ability to manage, understand, assess, share and communicate through digital technology. In addition, teachers and students can utilize digital technology to facilitate teaching and learning in the classroom.

According to researchers if not using digital technology, the teaching and learning process will feel more rigid because in this day and age it is timeless as the name digital technology. and as a teacher must be able to understand where students are saturated in learning, therefore digital technology is very helpful for teachers so that they can make students interested in continuous learning in the form of literacy.

Based on the explanation above, the researcher concluded that it is very important to know about students' problems in digital literacy. Therefore, researchers are interested in knowing how digital literacy is in second grade students at SMAN 5 Pekanbaru. This study was intended to find out how is A Study on Students' digital literacy in Reading Comprehension at Senior High School 5 Pekanbaru.

The competencies of digital literacy include many domains with various models. Eshet-Alakali and Amichai-Hamburger (2004) proposed a DL model that includes the ability to use digital software and hardware that includes cognitive, motoric, sociological, and emotional skills. Gilster (1997), who initiated the term in his book "Digital Literacy", defined it as the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. Digital literacy is using digital tools that are useful for improving student skills and the ability of students to understand various formats through a computer.

In Martin's (2005) terms, for example, "digital literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process". Similarly, Hague and Payton (2010) stated that to be digitally literate is to have access to a broad range of practices and cultural resources that you are able to apply to digital tools. Understanding and

reproducing data and images through digital manipulation, interacting with others using language appropriate to the media, and evaluating and applying new knowledge gained from digital environments (Hamilton & Penman, 2013). Students must experience, practice, and apply tasks within the classroom that will lead to their ability to function in a digital world (Jenkins, 2015).

Digital Literacy is a facility that helps students to access, manage, integrate, evaluate, and analyze using digital resources to make it easier for students to discover new knowledge. Digital Literacy is access to understand and produce data and images to make it easier to interact with other people who aim to gain new knowledge. In addition, it can hone students' abilities in the digital world by applying tasks that lead to the digital world.

Digital literacy can be building new knowledge and creating awareness and attitudes of the ability of individuals to access, manage, integrate, evaluate, and analyze digital resources. Make it easier for students to gain new knowledge by applying tasks in the classroom using digital so that they can understand and produce data and images to make it easier for students to interact with others who aim to gain new knowledge.

The Characteristics of Digital Literacy: Bawden, followed in 2001 with a specified list of characteristics or skills associated with the idea of digital literacy:

a. Awareness of "people networks" as sources of advice and help
b. Knowledge Assembly or building a "reliable information hoard" from diverse sources.

c. Retrieval Skills, plus "critical thinking" for making informed judgments about retrieved information, with wariness about the validity and completeness of internet sources.
d. Reading and Understanding Non-Sequential and Dynamic Material.
e. Using Filters and Agents to Manage Incoming Information.
f. Information literacy as the construct that incorporates all the different kinds of literacy, digital literacy in providing individuals with online reading and understanding abilities.

Bawden (2008) explains that the concept of digital literacy is very broad and can include very specific skills and competencies to general awareness and perspectives. He distinguishes four components of digital literacy:

a. Underpinnings - the ability to read and write as well as to use software packages and computers.
b. Background knowledge- an understanding of how digital and non-digital information is created from various forms of resources and communicated.
c. Central competencies - the ability to assemble knowledge from multiple sources.
d. Attitudes and perspectives - the ability to learn independently as well as to exhibit good behavior in a digital environment.

1. Operations Skills

Computer operation skill entails the ability of the operator or the student to operate a computer with proficiency. Operation skill is an operator's knowledge of the system and the ability to utilize such knowledge to keep the system running or recover from full or partial failures. Kinzie, Delcourt and

Powers, (1994) Operation skill operates a digital tool as a tool in the teaching and learning process of students, operating a digital tool aimed at training students' skills in knowledge of operating computers.

According to Ng (2012), the technical dimension refers to the operational skills we need to use information and communication technology, and the operational skills are developed through understanding the structure, features and capabilities of technology. At present not a few teachers use visual as a teaching tool but many students who are not interested, therefore through operational technology skills are used as learning media to improve students' understanding in reading.

2. Thinking Skill

The goal of these courses should be "to bring students to the point where they are willing and able to use thinking skills independently and effectively in a variety of settings" (Beyer, 1984). With the thinking skills of students it is emphasized to think creatively and effectively by using students' thinking skills.

To develop the ability to think critically, there are five lessons that can be taken, namely: (1) determine the learning objectives, (2) teach through inquiry, (3) practice, (4) review, refine and improve understanding, and (5) practice feedback and assess learning (Limbach & Waugh, 2010). It needs an assessment to see the development of higher order thinking. According to minister education and culture's regulation (Permendikbud) No 53, 2015, the assessment of study result by educator is information or data collecting process about student's

achievements in attitude aspect, knowledge aspect, and skill aspect which is done systematically to observe the process, study progress, and study result improvement by giving an assignment and evaluation of study result. In addition, Barnett & Francis (2012: 209) states that the higher order thinking questions may encourage students to think deeply about the subject matter. With the existence of thinking skills can encourage students to think critically and deeply that aims to improve learning progress and increase student learning outcome.

The types of Thinking Skills are determine learning goals, teaching through Inquiry, Practice, Reviewing, and Increase understanding

3. Collaboration Skills

Roschelle and Teasley (1995) define collaboration as "coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem". Collaboration is an activity to build cooperation between one another aiming to solve a problem.

One process found to enable collaboration and teamwork skills to be taught and measured was a face-to-face collaborative work and class-wide activities supported by wirelessly connected hand-held devices (Cortez & et al., 2009). The authors of the study concluded that it is possible to effectively teach collaboration skills through the use of immediate feedback provided by a supporting technology. Student collaboration helps students to raise the achievements of the whole team, to provide opportunities to work together, and to build positive relationships in the team (Leon & Tai, 2004). Here it can be concluded, Collaboration is an activity that helps improve student achievement in

education, and fosters a sense of social students to work together in building positive relationships within the team. But when students collaborate in groups to create knowledge, students also have to work with the teacher to avoid the nature of authority within the team.

4. Awareness Skills

Eckroth-Bucher (2010), defines the concept as "Self-awareness involves the cerebral exercise of introspection. This attribute reflects the cognitive exploration of own thoughts, feelings, beliefs, values, behaviors, and the feedback from others".

James and Garrett (1991) believe that in Language Awareness "the level of awareness is not stable, but can be both raised and focused and that this is done in an inductive manner" and the aim of teaching is "to shape and increase conscious thought around a chosen aspect of language by offering the students such data that they are, for example, able to induce rules and regularities that underlie. We agree that the aim of teaching culture is 'to increase students' awareness and to develop their curiosity towards the target culture and their own, helping them to make comparisons among cultures' (Tavares & Cavalcanti, 1996). Group awareness was discussed in the field of computer-supported cooperative work (CSCW) (e.g. Dourish & Bellotti, 1992; Gutwin & Greenberg, 2002) and then it became an increasingly investigated issue in the field of computer-supported collaborative learning (CSCL) (Bodemer & Dehler, 2011).

Dourish and Bellotti (1992) defined awareness as "an understanding of the activities of others, which provides a context to your own activity." Group awareness, then, refers to being informed about various aspects of the group and its members (Gross et al., 2005), such as what group members are doing and, where they are, what they are interested in, and how others feel about them Based on the explanation, Awareness Skills where to shape and increase students' awareness in developing curiosity towards culture and helping them to compare cultures. In additional, raising group awareness to understand group activities and student activities themselves. The awareness of the group in question is to refer to information about the group and its members.

The types of Awareness skills are exploring the cognitive of thoughts, feelings, beliefs, values, and behavior. Awareness skills to form awareness in the field of cooperation understand the activities of groups and students themselves.

2. METHODS

This study use case study design. A case study is an in-depth exploration of a bounded system (e.g., activity, event, process, or individuals) based on extensive data collection (Creswell, 2007) in. This research was intended to A Study on Students' Digital Literacy in Reading Comprehension at Senior High School 5 Pekanbaru.

The data of this research a form of questionnaire that was given to the students. used "yes or no" and students give reasons for what they answered. The population in this study was the second grade of Senior High School 5 Pekanbaru, they were being the representative of the school to participate in this research and the sample one class of second grade in Senior High School 5 Pekanbaru. The sample choose by used purposive sampling as tool for informant

selection, According to (Patton, 1990; 169 in Indrawan, 2014: 107) the standard that use to choose the participant was they are that know well about the information. The questionnaires of this research include the indicators of Digital Literacy; Operation skill, Thinking skill, Collaboration skill, Awareness skill.

In this research, the researcher was took a respondent from the second grade of Senior High School 5 Pekanbaru, that was the students of XI MIPA 2 and the researcher will choose one class consisted of 35 students. The procedures of gathering data the researcher went to the schools and asked for permission to get the data from one class, the researcher distributed to the samples, forty-five minutes given to the samples to answer the question in questionnaire. The researcher made sure that the students answered the question and gave their reason to help the researcher easier to analyze the data. After the samples finished with the questionnaire, the researcher collected the questionnaires and analyzed it.

This research is intended to find out digital literacy students of English education at the second grade of Senior High School 5 Pekanbaru. The researcher collects the data through a questionnaire consisted of 12 questions that had given to the students and categorize the answers used yes or no and the reason about the students answered describe how students were digital literacy at the second grade of Senior High School 5 Pekanbaru

3. FINDING AND DISCUSSION

Data Description

The researcher was explained analysis of students' answers on the questionnaire of indicators of digital literacy of second grade students at Senior High School 5 Pekanbaru, according to Wawta Techataweewan and Ujsara Prasertsin 2018 there are four indicators; Operation skills, Thinking skills, Collaboration skills and Awareness skills.

Data Presentation of Operation Skills

Operation skill is the ability of the operator or to operate a computer with proficiency and the ability to utilize such knowledge to keep the system to train students to operate a digital tool in learning process. therefore through operational technology skills are used as learning media to improve students' understanding in reading. The sub indicator of operation skills are Cognition, Invention, Presentation.

Table 1*. Operation Skills*

Operation Skill	Answered	Did Not Answered
Cognition	33	2
Invention	29	6
Presentation	32	3

Table 1 showed that 33 students answered cognition questions, 2 students who did not answer. Furthermore, there are 29 students of Invention questions, and 6 students who did not answer. Meanwhile 32 students answered rather than Presentation questions, and 3 students who did not answer at all.

In cognition question, researcher saw students are able and understand the question given. researcher saw that students cannot escape from the internet because they feel that the internet can make it easier to found the latest

information in the world such as news. and in their explanation the internet was very important in everyday life, besides that the internet can make it easier to complete some of the tasks given by the teacher in the teaching learning process. but among the 35 students there were 2 students who did not answer. It means that, the students not to understand what they materials about. They hard to convey their information's in this question material to be presented in front of the class. in this question there were 6 students who did not answer at all, the researcher saw students did not understand the material.

There were 32 answered the question about presentations with various opinions that they could explain in the questionnaire. the researchers saw these students understand the material so they can answered questions. they feel that making power points is fun and with the power points can help in the presentation easily, besides that they feel the presence of power points can make it easier to explain because there are points and students' explanations the teacher always gives power point assignments to be presented as homework. But among the 32 students there were 3 students who thought "no" because they did not understand using power points. But there were 3 students who did not answer and emptied their answers to the researcher saw students did not understand the material provided through the questionnaire.

Data Presentation of Thinking Skills

Thinking skills it is emphasized to think creatively and effectively to develop reviews, refine and improve understanding to the students or to development of higher orders. Think deeply about the subject matter. So that thinking skills can encourage students to think critically and increase students in the learning process. The sub indicators of Thinking skills are Analysis, Evaluation and Creativity.

Table 2. *Thinking Skills*

Thinking Skills	Answered	Did Not Answered
Analysis	33	2
Evaluation	33	2
Creativity	34	1

Table 2 showed that there were 33 students answered about Analysis, and 2 students did not answer the Analysis question. Furthermore, based on Evaluation question 33 students answered question and 2 student did not answer. Meanwhile, there were 34 students answered Creativity questions and 1 only student who did not answer Creativity questions at all.

There were 33 students answered the question about analysis. In here the researchers saw that there are many different answers to this question but, there are several students who have the same opinion in this question. The researchers read their questions and in here the researchers look some of students really understand about this question and they can explain their answer about this question. But in here there were 2 students who emptied their answers; researchers saw they did not understand the questions given.

And another question about evaluation 33 students answered the question. but among the 33 students there was 1 student in the "A14" sample who thought differently by answering "no" to the questionnaire, because the students did not like reading, other than that other students could provide answers and explanations that they liked reading like newspapers,

magazines, book or article. Therefore students feel like reading will get the latest information. Meanwhile, there were 2 students not answering and choosing to leave their answers blank, the researcher saw the students did not understand the material.

There were 34 students who answered the creativity questions. Researcher saw there were differences in answers, but not a few students also have the same opinion on this question. Students read and understand about creativity questions. but among the 34 students there were 2 students saying "no" on the samples "A16 and A18" they explained that they were not accustomed to and its not their expertise in editing photos, videos and text. Meanwhile, there was 1 student not answering this question. The researcher sees that the student does not understand the creativity question given through the questionnaire.

Data Presentation of Collaboration Skills

Collaboration skill is to improve student achievement in education and fosters a sense of social students to work together in building positive relationships within the team. so get new knowledge and raise the achievements of the whole team to solve a problem. The sub indicators of Collaboration Skills are Teamwork, Networking and Sharing.

Table 3. *Collaboration Skills*

Collaboration Skill	Answered	Did Not Answered
Teamwork	35	-
Networking	35	-
Sharing	35	-

Table 3 showed that there were 35 students answering the Teamwork

questions. Furthermore, there were 35 students answering Networking questions, and 35 samples answered questions rather than Sharing. of the three sub indicators there was not a student who did not answer the question in the questionnaire.

In here on the question of teamwork, networking and sharing. The researcher saw that all students on these 3 questions can answered and give their opinions through questionnaires. 35 students who made samples answered and no one student did not answer. In here the researchers saw that students understood and read questions well so that they understood and could answer and explain based on the opinions they had.

Data Presentation of Awareness Skills

Awareness skills it is to increase students' awareness of understanding of others who refer to information about the group and its members in developing curiosity and understanding of group activities and the activities of the students themselves who aim to refer to information about the group and its members. The sub indicators of Awareness skills are Ethics, Legal Literacy and Safe Guarding Self.

Table 4. *Awareness Skills*

Awareness Skills	Answered	Did Not Answered
Ethic	32	3
Legal Literacy	33	2
Safeguarding Self	33	2

Table 4 showed that there were 32 students answered Ethics questions, and 3 samples were not answered Ethics question. Furthermore, there were 33

students answering the Legal Literacy question, and 2 students not answering the Legal Literacy question at all. Meanwhile, from the Safe Guarding self-question there were 33 students answering question with their respective opinions and only 2 samples were not answering the Safe Guarding self-question.

There were 32 students answered the question about ethnics. In here, the researcher saw their answer there are several of students have same answer and there are so many students have different answer. But in here the students can explain their opinion about this question although they have a different opinion but they can answer well.

But, there are 3 students not answered the questions at all. The researcher saw that they do not understand, and they cannot give their opinion about this question. Its mean that, the students not to understand and comprehend the material well.

In here, there are 33 students who answer the question about legal literacy. The researcher saw, in this there are so many same opinions about this question, but several students have an opinion well. Its mean that, the researcher saw from their answers and they look understand about the material and what they read, so they can convey their meaning in this question. But there were 2 students not answered at all, the researcher saw students not reading the question so they could not understand the questions and gave their answers into the questionnaire.

In here there were 33 students answered the question about safeguarding self. more than half of the students can answer and explain this question. That was, students can read questions well and answer questions with a variety of opinions that they

provide. But there are 2 students who did not answer this self-safeguarding question, researchers saw the students not to understand what they are materials about. They are hard to convey their information in this question.

Data Analysis

The researcher analyze the data based on the four indicators of digital literacy, they are; operation skills, thinking skills, collaboration skills, awareness skills.

1. Operation Skills

Operation skill is to help students' operation skill proficient in operating computers and get new knowledge by using information technology. Operation skill is one of the indicators of digital literacy.

a. Cognition

Cognition it is about how to familiar with issues related to web-bases activities. Only 33 students truly understood the questions from the sub indicator cognition. Although they have different opinions, researchers see students having their own opinions which mean that they understand the material they are reading. In contrast to students who do not answer questions at all, researchers see students that students do not understand the contents of the material provided through questionnaires.

b. Invention

It is about how students have the technical skills, need to use learning and create artifacts like presentations that demonstrate the understanding of what they learned. In sample A to the Invention question, the researcher sees that students in sample A there are those who answer the Invention question. they

understand the question about it. And only a few students who do not understand this question, they prefer to leave the answers blank and they find it too difficult to answer.

c. Presentation

The presentation is about how to create a presentation and slideshow presentation. In students sample A on the presentation question the researcher saw there were similarities and differences of opinion rather than the students' answers. But from the whole students prefer to make a power point as a presentation task in front of the class that they feel making a power point is easier than writing and the teacher always gives a power point assignment as a presentation task in front of the class.

2. Thinking Skills

Thinking skills help gain broad thinking to find new challenges. Thinking skills is to apply information or new knowledge which includes knowledge through the activities of remembering, analyzing, understanding as well as skills called intelligence in obtaining information.

a. Analysis

Analysis it is about how to critically analyze a problem situation to suggest solutions. Based on the answered of student the researcher saw, in the sample A35 student can analyze a problem in the text. But there are 2 students not answered the question at all, they are; A15 and A24. The researcher saw 2 students did not understand about the question given on questionnaire.

b. Evaluation

Evaluation is about how to evaluate the information that gather for it usefulness. In here the researcher can conclude in

sample A on the evaluation question, students can develop by giving different opinions based on their material. That is, they understand about their material. however, there are some students who think differently and prefer to leave their answers blank. researchers saw they students did not understand, so they did not answered the question.

c. Creativity

Creativity it is about how the students express creatively through digital media and technologies. In student sample A in the question creativity of researchers saw more than half of the students understood the question given. only 2 students according to the students' researchers were not interested in editing photos, videos and texts and only 1 student who did not answer the question was considered not to understand the questions given through the questionnaire.

3. Collaboration Skills

Collaboration skills to help students improve achievement in team form, students need to be involved in class discussions to gain new knowledge and express ideas of each student among the team, in addition to collaboration skills help foster students' social sense between individuals and group friends aiming to get the latest information.

a. Teamwork

Teamwork it is about how to working synchronously in the distance with other team. It's mean that, in here the researcher sees that the teamwork question is only 1 student who thinks differently in this question, most students answer yes although they have different opinions, the researchers saw the students have their own opinions mean that they understand about

material that they read. They comprehend their material.

b. *Networking*

Networking is about how to use social networks as a source of information. From networking questions that are not answered and do not give their opinions. all students on networking questions give their reasons and answers through questionnaires. The researcher saw the situation above, the students can understand about the question networking. because all students answered yes in the questionnaire with a variety of opinions according to the research students really need the internet as a tool in finding information in the learning process.

d. *Sharing*

Sharing it is about how to be comfortable with sharing information with others in the discussion. The researchers saw in this question most students understand and agree with the questions given through the questionnaire, they can explain using their own language which according to researchers with the group discussion can help students in the learning process. But there are also students who think differently in this question, they answered no because they are shy to talk in front of people and not all students are looking for information in the group.

4. *Awareness Skills*

Awareness Skills to help and increase students 'awareness of students in developing curiosity, leads to an understanding of group member activities such as knowing what is being done by group members, sharing in giving new ideas fostering a sense of awareness of students' feelings to understand group activities. In addition,

awareness skills also refer to forming and enhancing and developing students' curiosity of the culture in society through technology.

a. *Ethics*

Ethics it is about how the students understand human, cultural and social issues related to technology and practice legal and ethical behavior. In here the researcher can saw the students who answer the question about ethics. The students who understand about the question they can answer the question based on material, and in here the researcher saw the students who not answer the question. It feel like they do not understand and comprehend their material well.

b. **Legal Literacy**

Legal Literacy it is about how to that the access to use of and distribution of digital information complies with relevant laws and regulations. In here the researcher can saw the students who answer the question about legal literacy. The students who understand and can answer the question based on material, they can comply with relevant laws and regulations about digital. But only 2 students don't answer the question about legal literacy and the researchers say they don't about the question so they emptied their answers.

c. **Safeguarding Self**

Safeguarding Self it is about how to a policy relating to the safe use of mobile phones, cameras and other internet enable devices. The researcher found out that the students can understand about the question safeguarding self. Because more than half students answered yes in the questionnaire with a variety of opinions according to the research students can maintain policies related to the use of cell phones, cameras and the internet in accordance

with what is needed in the laerning process. but only 2 students do not answer the question about safeguarding self and the researcher saw they do not understand and comprehend the question.

4. CONCLUSION

After conducting a research, the researcher analyzed the data and found out that the students were digital literacy through several sub indicators, they were students of 33 of 35 students. 33 students who answer the question in cognition, it seems like they understand about the question. The researcher saw the students have a big anthusiasm while they answer questions and they can answer and explain with their respective opinions. The students seem to like, they have different opinions from each other, but they look understand and this is very different from the Invention question. of all questions from the digital literacy sub-indicator. there were 6 out of 35 students who did not answer the questions about invention. here researcher saw the students do not understand the questions and do not understand learning with digital literacy.

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