Assessment of Digital Literacy Competence for Non-Formal Education Study Program Students

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ABSTRACT

Purpose: Current educational transformation focuses on the process of utilizing information and communication technology. What's more for students, digital technology makes it easy to access, share, analyze, and present information obtained from various digital sources. The research aims to develop indicators and assess students' digital literacy competencies.

Methods: This research is a descriptive quantitative study. The population taken was students of non-formal education at the State University of Padang. The sample was taken 117 respondents using a purposive sampling technique. The data was collected by distributing questionnaires. Measurement of the level of digital literacy based on the Likert scale (1-5), the results are interpreted as never, rarely, sometimes, often, and always.

Results: Of the 117 students, 45.01% of students often use and choose digital media in learning and digital media can complete assignments. 37.61% of students had never checked a trustworthy website and on a different website. 30.39% of students never post the latest information they get. 38.46% of students never communicate via the internet with colleagues from other disciplines and professional experts to complete assignments. 43.02% of students never used the internet to search for ideas through the internet to improve products and find new techniques in completing assignments.

Conclusion: This study reflects the initial ability and willingness of non-formal education students to develop digital literacy competencies which in turn provide opportunities for education and policymakers to develop curricula and learning based on information and communication technology.

1. Introduction

The current educational transformation focuses on the process of utilizing digital technology. In line with this, the importance of increasing digital literacy competence, especially for students, is to make it easier to get digital sources of information and change the way people communicate, collaborate, and innovate. Of course, this is a challenge for the Study Program of Out-of-School Education or Non-Formal Education at Padang State University to make regulations or standards and service programs that can make it easy for students to develop digital literacy competencies to support educational programs for the community. Helping students to improve digital literacy competencies will in turn have an impact on increasing their competence in facing the digital society. Developing digital literacy through a new pedagogical approach that utilizes information and communication technology (ICT) substantially as a resource must be designed to be applied in learning.

Findings from other research are that developing digital literacy competencies is important for the future of students, by involving digital technology students can work together with their peers for knowledge development [1]. Learning through web-based education helps students get information about the subject and the interconnections built by the use of social media are the best sources for exchanging information and sharing knowledge [2]. Of course in the 21st century, digital literacy competencies are becoming very important in the world of education [3]. Therefore, the use of information and communication technology provides principles or guidelines for the development of non-formal education. Developing digital literacy through a new pedagogical approach by utilizing technology substantially is a resource that must be designed to be applied in the curriculum.

Non-formal education as an institution that prepares professional educators for society must reflect changes in digital reform. On

this basis, research activities are oriented towards developing indicators of digital literacy competencies and assessing students' initial abilities. This aims to map digital literacy skills and further researchers can develop a curriculum based on information and communication technology for out-of-school education study programs or non-formal education at Padang State University.

2. Theory Study

2.1 Digital Literacy

In general, today's students are close to technology and can access information, create content, and share digital information [4]. A digitally literate person can not only seek and manage information but also can research and integrate digital information [5]. Although students today are generally considered tech-savvy, many of them find it difficult to do so effectively. Digital literacy is the awareness, attitude, and ability of individuals to use digital media appropriately to identify information, access information, and analyze digital sources, create new knowledge, invest digitally, and communicate and collaborate with others [6].

Digital literacy consists of three key dimensions: technical, cognitive, and socio-emotional [7]. The technical dimension relates to how the skills needed to use information and communication technology correctly. The cognitive dimension is an important skill for critically seeking, evaluating, and synthesizing digital information. Meanwhile, the socio-emotional dimension is a skill needed to socialize online in a wise manner. So it can be concluded that 5 indicators can be concluded as a reference when someone who has digital literacy competence, namely; 1) individual ability to use digital media for life (digital media), 2) ability to identify, access, manage, evaluate, analyze, and synthesize digital information sources (digital information), 3) ability to communicate using digital media (digital communication), 4) the ability to collaborate with others so that a constructive digital social culture is built (digital collaboration), 5) the ability to find creative ideas and new techniques in completing work (digital innovation).

2.2 Information and Communication Technology in Education

One of the basic requirements of education for the future is to prepare learners to participate in an information society where knowledge is the most important resource for social and economic development and where distributed expertise and networked activities characterize the types of emerging jobs. Educational institutions are required to use appropriate pedagogical methods to overcome these new challenges. In this development, new information and communication technologies, taught and used properly, can play an important role as a tool for the general restructuring of the teaching-learning process, facilitating the development of students' skills in collaborating and working productively with knowledge.

Educational reform focuses on the learning process and the use of technology in education which is basically to improve the quality of teaching and learning. With ICT, students can access, share, analyze, and present information obtained from various sources and in various ways. The use of ICT provides opportunities for students to work collaboratively and independently. Information and communication technology has changed social structures, lifestyles, communication processes, and even ways of obtaining education and has led to the phenomenon of the information society. Applying information and communication technology in education causes the educational context to lead to metaphorical world development in information and communication technology helping to expand learning opportunities and access to educational resources and accelerate and facilitate the educational process. In the educational definition of information and communication technology, one can say that information and communication technology is the process of planning, and facilitating the use of computing, internet software, and communication tools covering teaching, learning, and other educational activities with different methods.

3. Research Methods

This descriptive quantitative research aims to analyze and assess the initial ability of digital literacy competencies. The digital literacy indicators that have been developed based on interviews and literature review analysis can be seen in table 1.

	Indicator	Description
1	Digital Media	Using digital media in learning activities; Choosing digital media according to your needs; The media used can help complete tasks or activities.
2	Digital Information	Check for trustworthy websites; Check out the information found on different web sites; Checks that what is found is the most recent information
3	Digital Communication	Post new information on the internet; Share information on the internet to start discussions; Find professional experts on the internet to start a job; Initiate a conversation with a professional in another field over the internet
4	Digital Collaboration	Share important information with the team via the internet; Using the internet to share information that supports the work of other teams; Communicate via the internet with colleagues from other disciplines; Make use of professional experts to complete tasks.
5	Digital Innovation	Use the internet to find innovative ideas for your field; Ideas over the internet can enhance the product or task you produce; Search for new techniques or procedures for completing tasks on the internet

Table 1. Digital literacy indicator

The population taken was students of non-formal education at the State University of Padang. The sample was taken 117 respondents using a purposive sampling technique. Data collection methods used were observation, documentation, and questionnaires. The data was collected by distributing questionnaires. Responses to the questionnaire were divided into five levels from never to always (Linkert scale). There are 17 statements on the questionnaire consisting of 5 indicators. The first indicator is 3 statements about digital media capabilities. The second indicator involves 3 statements of digital information

capabilities. The third indicator contains 4 statements of digital communication capabilities. The fourth indicator has 4 statements of digital collaboration capabilities. The last indicator has 3 statements of digital innovation capability.

4. Research Results and Conclusions

4.1 Research Results

The digital literacy factors and indicators described above were used in a questionnaire containing 17 statements. The collection of digital literacy assessment data on non-formal education students is as shown in table 2.

Competence	Percentage				
	Never	**Rarely**	**Some times**	**Often**	**Always**
Digital Media	0,00%	1,71%	19,94%	45,01%	33,33%
Digital Information	16,52%	37,61%	28,21%	8,26%	9,40%
Digital Communication	30,56%	29,49%	24,57%	10,47%	4,91%
Digital Collaboration	38,46%	21,58%	15,38%	11,11%	13,46%
Digital Innovation	43,02%	29,34%	11,68%	9,40%	6,55%

Table 2. Assessment of digital literacy of non-formal students of Padang State University

Based on the results of research through the distribution of digital literacy assessment questionnaires, it was found that the ability of digital media for non-formal education students, as many as 45.01% of students often use digital media in learning. They can choose media that suits their needs and in this case, digital media helps students complete assignments. This correlates with the findings in the field that every student has a smartphone and some students have a laptop. However, the media used is limited to students who make presentations. In digital information capabilities, 37.61% of students never checked the reliability of the website in obtaining information. Nor do they have the ability to check the latest information and on different websites. This is more due to the lack of student collectivity on sites that provide information by their fields.

In terms of digital communication skills, 30.59% of students did not post the latest information they got. The inability to take advantage of the latest information on the internet is a reason to start a discussion. The discussion only perpetuates the routine assignments given by the lecturer. The ability to communicate with professional experts in their fields as well as professional experts who support them is rarely done by students. Lack of opportunities provided and lack of confidence are obstacles for students. Another literacy indicator is the ability to digital

collaboration, with 38.46% of students never sharing important information with other teams via the internet. In completing assignments, they rarely build communication with other students and professionals outside of scientific disciplines. This is related to students' low digital communication skills, which causes them to never collaborate. The last capability is digital innovation which is still low. This can be seen from as many as 43.02% of students never use the internet to look for innovative ideas in their fields. The latest ideas should be able to improve the resulting performance. Using a new strategy is fundamental for a student today.

4.2 Conclusions

Media skills, information, communication, collaboration, and digital innovation are important indicators or factors for students to be digital literate. A digitally literate person can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share content, and use the internet and technology to achieve personal, academic, and professional goals [8]. Digital media skills refer to the technical skills of using effective media technology. Digital information capabilities allow students to obtain information quickly, validly, and accountably. Communicating using technology is an interesting thing for students to collaborate with by sharing information with peers and professional experts. Also, they can collaborate with professionals outside of scientific disciplines. Digital innovation skills provide space for students to find new ideas and strategies in carrying out learning activities. They also have to think creatively to produce works that are beneficial to themselves and society [9].

The quantitative data from this study explains that the digital literacy competence of students is still low. The lack of utilization of information and communication technology (ICT) in learning is a major factor in this problem. The routine of students who always use digital technology does not guarantee that students have digital literacy competencies. For this reason, digital literacy competence needs to be improved and developed in learning. This research reflects the initial ability and willingness of non-formal education students to develop digital literacy competencies which in turn provide opportunities for education and policymakers to develop curricula. The effective integration of ICT in pedagogy is to provide opportunities for students to use media and create an environment that supports active, creative learning, creates new knowledge, communicates and collaborates with peers and professionals, and works interactively in the classroom [10]. So it can be said that an uncommunicative and collaborative learning environment will make learning limited to mastering the material and not developing digital literacy as a student's ability to support the teaching and learning process.

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