



# Digital Literacy Praxis in Diploma III Cadets of Marine Transportation Management Study Program at Merchant Marine Polytechnic of Sulawesi Utara

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## ABSTRACT

**Purpose of the study:** This research was conducted to investigate how the praxis and effectiveness of digital literacy praxis in diploma III students of the Marine Transportation Management study program at the Merchant Marine Polytechnic of Sulawesi Utara.

**Methodology:** The type of approach used in this study is a mix method approach, which is by combining quantitative and qualitative research. Quantitative research was used to calculate the number of correspondent responses. Qualitative research is the activity of exploring and developing the phenomena that occur. Usually, qualitative research makes a complex picture, examines words, detailed reports from the respondent's point of view and conducts a study on the situation that occurs.

**Main Findings:** From the findings and discussions that have been carried out regarding the praxis of the four pillars of digital literacy in Marine Transportation Management students in the 3rd semester at Merchant Marine Polytechnic of Sulawesi Utara, 2 (two) conclusions can be reached. The first conclusion is that digital skills are the pillars in digital literacy that are most mastered by Marine Transportation Management students in the 3rd semester at Merchant Marine Polytechnic of Sulawesi Utara. Students are very proficient in using digital devices and utilizing the internet network in processing information.

**Novelty/Originality of this study:** In common ways, the result of this research will offer valuable information to set up appropriate solution to make learning materials in order to empower and enrich students skills on literacy understanding and its practice.

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## 1. INTRODUCTION

During the pandemic, education in Indonesia has entered a transition period towards the era of digitalization. All learning activities are carried out online by utilizing the internet network so that students can still experience a varied learning experience and interact within limitations [1]. The need to collaborate technology in the learning process, regarding the emergence of new literacy as an impact of 21st century learning is happening currently [2]-[4]. Formal educational institutions are required to have creative thinking,

critical thinking and problem solving, communication, and collaboration skills known as the four basic competencies (4C) in 21st century learning.

This happened considering the major changes in the world of education that are happening in society. The six types of literacy are literacy, science literacy, numeracy literacy, financial literacy, digital literacy, and cultural literacy. The six literacy movements promoted by the government; digital literacy is the literacy that is most in line with the demands of educational change during the pandemic [5]-[7]. In general, digital literacy is limited to a person's ability to use a platform supported by ICT (Technology, Information, and Communication) [8]-[10]. However, in practice, digital literacy and related skills will be the basis and essential skills to survive in this highly competitive [11]-[13].

The measurement of the digital literacy index in Indonesia refers to the framework in the Digital Literacy Road Map 2020 [14]-[16]. This framework is used as a basis for designing programs and curriculum for the Indonesian Digital Literacy National Movement Program 2020 - 2024. This indicator can also be used as a reference for the application of digital literacy in society. The problems and objectives studied in this study are how the praxis and effectiveness of digital literacy praxis in diploma III students of the Marine Transportation Management study program at the Merchant Marine Polytechnic of Sulawesi Utara. This research was carried out especially for students of the D-III study program majoring in Marine Transportation Management.

The novelty of this research is variable of research as mention above is newly scope of the research during the institution established since 2019. Relevant research conducted by Agnesia et al., [17] which discusses digital literacy practices. The purpose of this research is to find out how the praxis of digital literacy in diploma III students of the Marine Transportation Management study program and the importance of this research is expected to be an input and study to develop digital literacy skills, especially in vocational education in the shipping sector.

Theoretically in digital literacy, it is hoped that this research can be a study material and add insight in developing digital literacy skills, especially in the realm of shipping polytechnics. Practically, this research can be useful as an evaluation and input material for the Merchant Marine Polytechnic of Sulawesi Utara in organizing digital learning for cadets and cadets at the Merchant Marine Polytechnic of Sulawesi Utara. The methodological benefits of this research are expected to be a development reference for other researchers who are interested in developing research in the field of digital literacy, especially at the D-III education level.

## **2. RESEARCH METHOD**

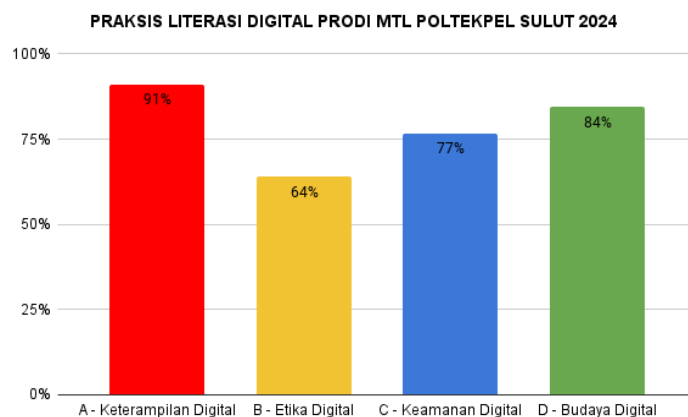
The type of approach used in this study is a mix method approach, which is by combining quantitative and qualitative research. Quantitative research was used to calculate the number of correspondent responses. qualitative research according to Cresswell [18] is the activity of exploring and developing the phenomena that occur. For the population is all students of 3rd Semester in Marine Transportation Management study program about 70 people. Usually, qualitative research makes a complex picture, examines words, detailed reports from the respondent's point of view and conducts a study on the situation that occurs [19], [20]. The research instrument used are questionnaire, interview, class observation and test.

The data collection are giving questionnaire to students, interview with randomly sampling students and some lecturers, the researcher also make documentations of learning activity. Data analysis techniques such as; data reduction, scientific paper review and do verification of validity of problems and findings through literature review which is some previous reseach.

## **3. RESULTS AND DISCUSSION**

### **3.1. Results**

According to CSIS the literacy pillar can be measured based on the elements of complementarity (communication and critical thinking), proximity (respondents' habits in using data and ICT devices), and security (respondents' habits in protecting devices and personal information) are representations of the pillars of digital skills, digital culture, and digital safety [21]. Kominfo then lowered the four main pillars to 30 indicators of digital literacy competency representation [22].



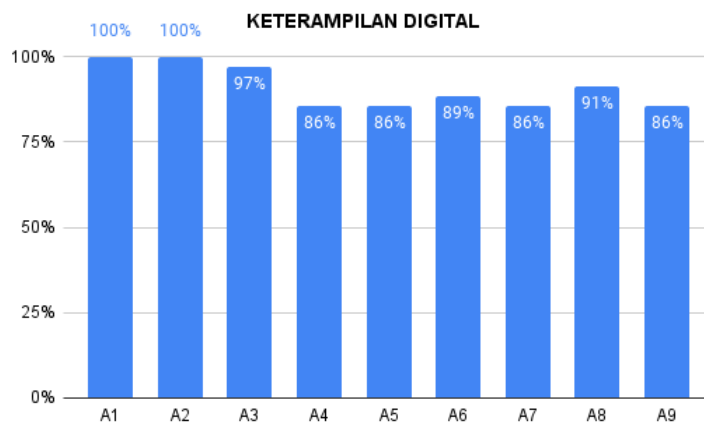
Picture 1. Digital literacy praxis of Marine Transportation Management study program.

The four pillars of digital literacy that have been set by Kominfo [22], the average student of the Marine Transportation Management study program at Merchant Marine Polytechnic of Sulawesi Utara understands digital skills as much as 91%. This figure proves that students at Merchant Marine Polytechnic of Sulawesi Utara are very proficient in using digital devices and operating them. The ability of students to understand and apply ethics in the digital world is 64%. This shows that students' proficiency in using digital media is not supported by the application of ethics in the digital world. This proficiency also needs to be supported by the ability of students to maintain security in digital media because it shows a figure of 77%. Meanwhile, the ability of students to read, decipher, habituate, check, and build national insight into the values of Pancasila, and Bhinneka Tunggal Ika in daily life and cultural digitization through the use of ICT showed a figure of 84%.

### 3.2. Discussions

#### Digital Competency

According to Kominfo [22], there are 9 indicators showing digital skills that can be used as parameters in assessing digital skills. The following graph shows the digital skills indicators of Marine Transportation Management study program students in the 3rd semester of Merchant Marine Polytechnic of Sulawesi Utara:

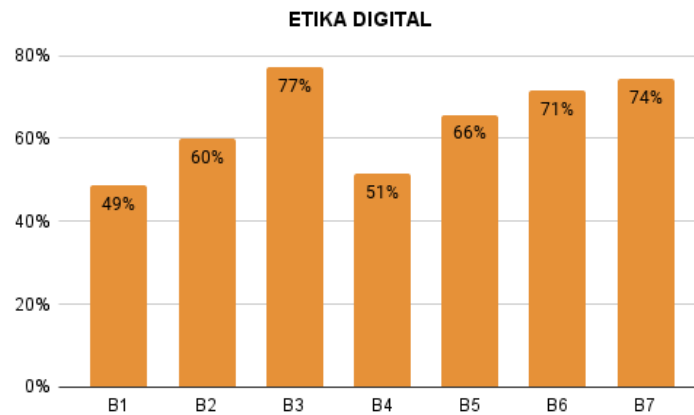


Picture 2. Graphic of Marine Transportation Management student digital skills

Overall, students show very perfect digital skills, especially in connecting devices to the deep internet network in downloading and uploading files/applications. This is evident from the values that show 100% and 97% figures. Students are also proficient in interacting using digital devices, such as in the use of zoom or gmeet to study with lecturers online. This is proven because 91% of students can interact through digital devices. In several aspects such as the ability to store data, information, and content in digital media (A4), the ability to find out whether the information on the website is true or false (A6), the ability to compare various sources of information to decide whether the information is correct (A7) and the ability to shop through the market (A9) requires attention even though the values shown are quite good. This is important because students must be able to sort the truth and feasibility of information on social media, especially those that will be used as learning media. The inability to filter information in the digital world will provide misunderstandings in learning.

### Digital Ethics

The study found that 77% of students believe that teaching ethics is the most important aspect of coping with negative comments. However, 74% of students believe that teaching ethics are not enough to overcome negative comments on social media. Some students argue that teaching ethics is a form of personal expression and should be taught on social media to ensure ethics and risk.

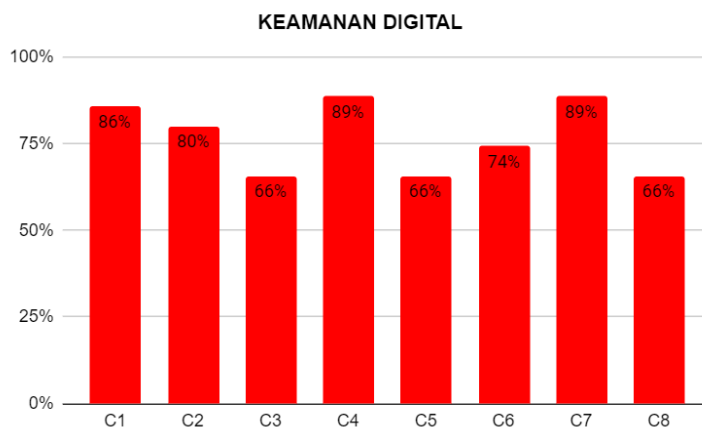


Picture 3. Digital ethics indicators for Marine Transportation Management study program students

However, there are some important aspects to consider, such as teaching ethics in involving children in sharing photos, which affects 49% of students, and teaching ethics in creating groups and engaging others without involving them. This is especially important for children who are still in school, as it requires parental consent. Jessica Barron in Forbes also highlighted the importance of parental actions in involving children on social media, as it has the potential to increase the risk of identity theft, abuse, and discrimination.

### Digital Security Awareness

The following picture shows students' ability to maintain the security of personal information in the digital world.



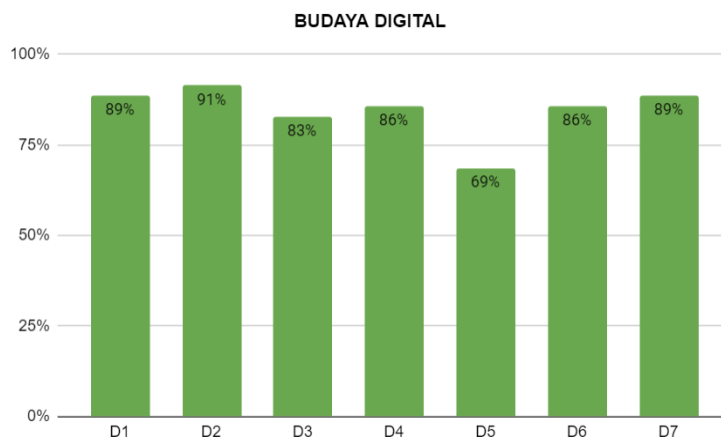
Picture 4. Graphic of Marine Transportation Management students' digital security awareness

The study revealed that Marine Transportation Management students in north Sulawesi realize that personal data is not public consumption and must be shared on social media. They also learn to create strong passwords using a combination of letters, numbers, and symbols. This is shown in the diagram with a percentage of 89%. Students also understand the importance of active social media in identifying potential sources of information and preventing abuse on social media.

The study also highlights the importance of understanding how students can enable or disable their geographic position (66%), use apps to prevent viruses on their apps and digital devices, and be able to back up important personal data.

### Digital Cultural Awareness

The following graph shows the ability of students to read, decipher, habituate, check, and build national insight into the values of Pancasila, and Bhinneka Tunggal Ika in daily life and cultural digitization through the use of ICT.



Picture 5. Graphic of Marine Transportation Management students' digital security awareness.

From the images that have been displayed, it is clear that students are able to build national insight into the values of Pancasila, and Bhinneka Tunggal Ika in daily life and cultural digitization through the use of ICT. This can be seen from the percentage level in all indicators that reach more than 80% except in the ability to share Indonesia's traditional and contemporary cultural arts digitally. In fact, sharing Indonesia's traditional and contemporary cultural arts digitally is one of the most effective ways to preserve and introduce cultural wealth to the wider community, especially to today's youth.

The use of social media can be used to sharpen the cultural awareness of the all-virtual millennial generation in the digital era [2], [23]. This opportunity can build cultural awareness and social sensitivity to the advancement of telecommunications and internet informatics. Reporting from the Kompas page, there are several effective ways to preserve and introduce cultural wealth to the wider community, including distributing artworks through social media, Virtual Reality and Augmented Reality (VR/AR) to places that have art value such as museums, and virtual art exhibitions.

Social media owned by the campus or students personally may be used to share student activities with nuances of art and culture [24], [25]. In fact, social media owned by students or campuses, not only to provide information about the campus to the wider community, but can also be used as a reference for the spread of arts and culture, especially Minahasa culture. The implication of this study is to provide information and open-review about maritime education and its challenges regarding to literacy courages and competency of high vocational education in North Sulawesi. The study is limited to find out kinds of digital literacy competencies which suitable for language study for college students in Merchant Marine Polytechnic of North Sulawesi.

This study put some findings as talk above as the way of the institution to add more some teaching supplement materials involved by lecturers and academic unit about digital literacy in practice learning scenarios. All aspects should be put as together; culture awareness, digital security, and manner of using the technology-social media.

## 4. CONCLUSION

From the findings and discussions that have been carried out regarding the praxis of the four pillars of digital literacy in Marine Transportation Management students in the 3rd semester at Merchant Marine Polytechnic of Sulawesi Utara, 2 (two) conclusions can be reached. The first conclusion is that digital skills are the pillars in digital literacy that are most mastered by Marine Transportation Management students in the 3rd semester at Merchant Marine Polytechnic of Sulawesi Utara. Students are very proficient in using digital devices and utilizing the internet network in processing information. The second conclusion is that digital ethics and digital security are two pillars of digital literacy that need special attention. Lack of knowledge and awareness of

students in applying ethics and maintaining security when using social media can cause problems such as hate speech, cyberbullying, misinformation, cyber dangers, etc.

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