Proceeding
2nd International Conference on Multidisciplinary Studies
Universitas Riau Kepulauan, Batam, December 14, 2024
E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

LEARNING MANAGEMENT WEAKNESS ANALYSIS OF THE DIGITAL LITERACY PROGRAM BASED ON MARITIME LITERACY IN MAN KARIMUN

Peri Yudianto*, Febri Swendi Indra
Universitas Riau Kepulauan, Indonesia
Corresponding Author: periyudianto@gmail.com, fsi1002@gmail.com.

Abstract

This research aims to analyze the weaknesses in the management of the digital literacy program based on maritime literacy for students at MAN Karimun. The focus of the study includes the planning, implementation, and evaluation of the program designed to enhance students' digital literacy skills while emphasizing the local maritime context. Data were collected through interviews, observations, and document studies, and analyzed qualitatively. The results reveal several key weaknesses, including the lack of integration of maritime literacy into the digital curriculum, limited teacher training or workshops on maritime-based digital technology, and suboptimal supporting infrastructure, such as digital devices and internet access. Additionally, the involvement of local stakeholders, including the maritime community, remains minimal in supporting the success of the digitalization program. Recommendations include improving teacher training, providing adequate digital learning infrastructure, and fostering more intensive collaboration with relevant maritime stakeholders to strengthen the local context of digital literacy in the learning process. The study concludes that digital literacy based on maritime literacy will contribute to the development of education policies that are relevant to the needs of maritime regions, enabling students in these areas to better engage with the evolving digital landscape.
Keywords: Digital Literacy, Maritime Literacy, Learning Management, MAN Karimun

INTRODUCTION

Technological developments are felt in various fields of life, especially education. The world of education in improving the quality of learning is required to always adapt to technological developments. Eggen et al, in Anggraeni & Sole (2022) asserted that education standards for schools in the 21st century or digital century for teachers and students are related to the application of technology in learning. Teachers must be able to prepare their students to utilize digital literacy.

Digital literacy is a crucial skill for students in today's globalized digital era. Digital literacy is defined as the ability of an individual to utilize information and communication technology so as to find relevant information, evaluate critically, and work based on the information that has been obtained (McDougall, Readman, & Wilkinson, 2018). In learning, Chaw stated that digital literacy is one of the skills that must be possessed by students in order to follow distance learning well (Tang & Chaw, 2016). However, in maritime areas such as MAN Karimun, strengthening digital literacy requires integration with maritime literacy to reinforce local identity. The digital literacy program based on maritime literacy aims to connect digital technology understanding with the maritime context that characterizes the region.

The implementation of this program faces several challenges that hinder its effectiveness, such as inadequate planning, limited supporting facilities, and minimal involvement of the local

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

maritime community. MAN Karimun Regency is a school in Riau Islands Province by implementing education to improve human resources, one of which is in the field of digital literacy. Thus, researchers want to see the extent of the implementation of learning management in the maritime-based digital literacy program at MAN Karimun. Analyzing the weaknesses in the learning management of this program is of paramount importance.

This study aims to: 1) Analyze the weaknesses in the planning, implementation, and evaluation of the digital literacy program based on maritime literacy. 2) Provide recommendations for improving the effectiveness of this program at MAN Karimun.

The research draws upon several theories of management and education, particularly the POAC (Planning, Organizing, Actuating, and Controlling) model, which serves as a guiding framework for evaluating the learning management process. According to this model, successful program management hinges on careful planning, efficient organization of resources, systematic implementation, and constant monitoring and adjustment to ensure that learning objectives are achieved. The model highlights the importance of having a clear, strategic plan for the integration of digital literacy within the local maritime context, organizing resources to support the curriculum, and controlling for issues such as infrastructure and stakeholder involvement.

Furthermore, the theory of stakeholder involvement, as outlined by Freeman (1984), emphasizes the role of community engagement in the success of educational programs. In the case of MAN Karimun, a lack of active participation from local maritime stakeholders, including community members and maritime industry leaders, has been identified as a significant limitation. Their engagement could help tailor the program to meet local needs and increase its relevance to students' future careers in the maritime industry.

Learning management refers to the systematic planning, implementation, and evaluation of educational programs to achieve desired learning outcomes. The effectiveness of learning management can be understood through several theoretical frameworks. POAC Model (Planning, Organizing, Actuating, Controlling) The POAC model emphasizes the importance of strategic planning, resource organization, systematic execution, and control to ensure that educational objectives are achieved. This model highlights the necessity of having clear goals, efficient use of resources, and regular monitoring to assess program progress.

Planning: In the context of the digital literacy program, planning refers to designing a curriculum that integrates both digital skills and maritime knowledge. It involves the creation of teaching materials that reflect local maritime contexts and the selection of appropriate digital tools. Organizing: Effective organization involves allocating resources such as digital devices, internet

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

access, and training for teachers. Organizational strategies should focus on how to effectively implement technology into classrooms while ensuring that students can connect the digital content with local maritime issues.

Actuating: This phase focuses on the execution of the program, ensuring that teachers are adequately trained and that students are engaged in the learning process. This involves facilitating interactions between students and the local maritime community, allowing them to apply their digital skills to real-world contexts.

Controlling: The control phase involves monitoring the progress of the program through regular evaluations, assessing the achievement of both digital and maritime literacy goals, and adjusting strategies when necessary.

According to Freeman (1984), the involvement of all relevant stakeholders (teachers, students, parents, and the local maritime community) is crucial for the success of educational programs. In the context of this study, the lack of engagement from the local maritime community is identified as one of the weaknesses. By actively involving local stakeholders, such as maritime professionals and community leaders, the program can be tailored to better meet the needs of the region and enhance its effectiveness.

This can be achieved through regular communication, collaboration, and consultation with stakeholders to gather feedback, insights, and suggestions for improvement. By incorporating the perspectives and expertise of these key stakeholders, the program can be more relevant, engaging, and impactful. Additionally, building strong partnerships with the maritime community can create valuable opportunities for students to gain real-world experience, access resources, and develop networks that can support their academic and career goals. In essence, stakeholder theory emphasizes the importance of inclusivity, collaboration, and responsiveness in educational initiatives to ensure their long-term success and sustainability.

The ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model is often used in educational program development. This model aligns closely with the POAC framework and provides a structured approach to developing effective learning programs.

Analyze: Conducting a needs analysis to determine the gaps in digital and maritime literacy among students.

Design: Designing a curriculum and digital learning materials that bridge the gap between digital technology and maritime education.

Develop: Developing appropriate digital tools and resources to support the curriculum.

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

Implement: Implementing the program with the involvement of trained teachers and active participation from students.

Evaluate: Ongoing assessment of the program's effectiveness in achieving its learning objectives.

In recent years, digital literacy has become a critical competency for students, particularly in the face of a rapidly evolving technological landscape. The concept of digital literacy, as defined by Hague and Payton (2010), extends beyond the mere ability to use digital tools. It encompasses the skills required to critically evaluate, use, and navigate information within digital environments, all of which are essential for participating effectively in the 21st century. However, in maritime areas such as Karimun, where local knowledge of maritime environments plays a central role in the community, integrating digital literacy with maritime literacy can significantly enrich students' learning experiences and their connection to the local context. Maritime literacy, as discussed by (Berkes, n.d.), involves a deep understanding of maritime resources, cultures, and potential, all of which are vital to students in coastal and island regions. Therefore, it is important that educational programs in such areas not only impart digital skills but also align with local cultural and environmental realities. In order to foster a holistic understanding of the maritime world. By incorporating local knowledge and practices into digital learning initiatives, students can develop a strong sense of place and appreciation for their unique coastal environment. This approach not only enhances academic learning but also instills a sense of pride and stewardship for the oceans and waterways that surround them. Additionally, by connecting digital literacy with maritime literacy, students are better equipped to navigate the complex challenges and opportunities presented by our increasingly interconnected and technologically-driven world.

The involvement of stakeholders is critical in ensuring that educational programs align with local needs and realities. Fullan (2022) emphasizes that the collaborative effort between educators, local communities, and policymakers is necessary to create sustainable and relevant education systems. In this study, the lack of involvement from maritime stakeholders, such as local fishing communities or maritime authorities, is identified as a major weakness in the implementation of the digital literacy program.

Effective collaboration between schools and local maritime industries can provide students with hands-on experience, allowing them to see the practical application of digital technology in maritime contexts. This collaboration also promotes a sense of local relevance, making the program more engaging for students. Additionally, involving maritime stakeholders in the development of the digital literacy program can ensure that the skills being taught align with industry needs and

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

standards. By working together, schools and local maritime industries can tailor the curriculum to better prepare students for future careers in the maritime sector. This holistic approach not only benefits students, but also strengthens the overall sustainability of the education system by creating a pipeline of skilled workers for the maritime industry. Ultimately, collaboration between schools and maritime stakeholders is essential for fostering a well-rounded and relevant education system that meets the needs of both students and industry.

Madrasah education consists of three levels of formal education: ibtidaiyah, tsanawiyah, and aliyah. In addition, madrasah also develops vocational madrasah to produce graduates who are ready to work and have special expertise in certain fields. Madrasah Aliyah is a public secondary school characterized by Islamic religion. madrasah functions to prepare students to become members of society who understand and practice the values of their religious teachings and / or become experts in religious science.

In the National Education System Law, madrasah education is included in the category of religious education with formal channels. As outlined in Article 30 paragraph (1) and paragraph (2) of the National Education System Law, religious education is organized by the government and/or community groups of religious believers, in accordance with statutory regulations. Education in madrasas that combines academic life with social life with the provision of religious education that is more than general education from people who live in their neighborhood.

RESEARCH METHODOLOGY

This study adopts a qualitative approach using a case study design. Menurut Sugiyono (2023), Qualitative research is research conducted in a natural way to produce qualitative data and analysis**.** This research was conducted at MAN Karimun with 500 students consisting of 254 male students and 246 female students, 40 teachers at MAN Karimun. The selection of this research site is in accordance with the geographical location of MAN Karimun which is in the Riau Islands Province where it is the only madrasah awaliyah school in Karimun Regency.

Data collection techniques include: 1). Interviews: Conducted with teachers, students, and school administrators to gather in-depth perspectives on the strengths and weaknesses of the program. 2). Observations: Classroom observations were made to assess how the digital literacy program is implemented and how maritime content is integrated into the lessons. 3). Document Analysis: The analysis of curriculum documents, lesson plans, and reports was carried out to evaluate the extent to which maritime literacy is embedded in the digital literacy program. Data analysis follows the model proposed by Miles and Huberman (1994), involving data reduction, data

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

presentation, and conclusion drawing. More details of these stages are as follows: 1) Initial Data Collection: at this stage all data is collected from various sources. 2) Data Reduction: Irrelevant research data is filtered to focus on information that supports the research objectives. 3) Data Presentation: Data that has been reduced is organized into narratives or tables to facilitate analysis. 4) Data Analysis: Data were analyzed using a qualitative approach to identify relevant patterns, relationships, and themes. 5) Verification and Validation: Data validity was tested through triangulation of sources, methods, and theories to ensure the accuracy of the findings. 6) Conclusion Drawing: Conclusions were drawn based on the verified research findings.

RESULTS AND DISCUSSION

Weaknesses Identified in the Learning Management of the Digital Literacy Program

The study identifies several challenges that have impeded the complete implementation of the digital literacy program that is based on maritime literacy at MAN Karimun. One of the major weaknesses identified is the insufficient integration of maritime literacy into the digital curriculum. Although the program covers fundamental digital skills like data literacy, internet navigation, and responsible technology use, it lacks a robust link to the maritime context of the region. Given the importance of maritime knowledge to students in coastal communities, it is critical to incorporate local maritime themes into the digital curriculum to enhance student engagement and make learning more relevant to their lives (Van Leeuwen et al., 2020).

Another key issue identified in the research is the limited professional development opportunities for teachers in the areas of maritime-based digital technologies. Teachers at MAN Karimun are faced with challenges when it comes to incorporating digital tools that reflect the local maritime context. Despite the global availability of digital tools, there is a lack of tailored training programs that equip teachers with the knowledge and skills to effectively use technology in ways that reflect the region's maritime identity. This gap in teacher training is a common issue in many schools, especially in rural or remote areas, where professional development resources are often limited (Fullan, 2022).

The study also highlights infrastructural weaknesses as a significant barrier to the successful implementation of the program. The digital facilities at MAN Karimun, including the availability of computers, tablets, and stable internet access, are insufficient to meet the growing demands of the program. Research by Reinders and White (2011) has shown that adequate infrastructure is a critical factor in the success of digital learning initiatives. Without reliable access to digital devices

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

and the internet, students cannot fully engage with the curriculum, and the program's goals cannot be effectively achieved.

Furthermore, the study points to the minimal involvement of local stakeholders, particularly from the maritime community, in the design and execution of the program. The lack of collaboration with local maritime industries and organizations has led to a disconnection between the curriculum and the local context. According to Hill et al. (2013), involving local stakeholders in the educational process not only enhances the relevance of the curriculum but also provides students with practical, real-world experiences that are essential for bridging the gap between classroom learning and the workforce.

Recommendations for Improving the Program

Based on the findings, the study makes several recommendations to address the weaknesses identified in the program. First, it is essential to enhance the integration of maritime literacy within the digital curriculum. This can be achieved by revising the existing curriculum to include local maritime content and aligning it with digital literacy objectives. For example, students could be taught to use digital tools to analyze maritime data, explore local marine biodiversity, or learn about sustainable fishing practices. Integrating local knowledge into the curriculum not only strengthens the learning experience but also deepens students' understanding of their cultural heritage (King et al., 2015).

In addition to curriculum revisions, there is a pressing need to improve professional development opportunities for teachers. Teachers should be provided with targeted training that focuses on the use of digital tools in maritime education. Workshops and in-service training programs could be organized in collaboration with maritime professionals and digital education experts to ensure that teachers are equipped with the skills they need to effectively teach digital literacy in the maritime context. This training should include both pedagogical approaches and technical skills, ensuring that teachers can confidently integrate digital tools into their lessons (Culp et al., 2013).

Upgrading the school's digital infrastructure is another critical step in ensuring the program's success. Investments in modern devices, high-speed internet access, and digital learning platforms will provide students and teachers with the resources they need to engage fully with the curriculum. A recent report by the International Society for Technology in Education (ISTE, 2020) underscores the importance of equitable access to technology in supporting digital literacy programs. Schools in remote or underserved regions must prioritize infrastructure development to

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

create an environment conducive to digital learning. Digital literacy is an urgent need to be met immediately which is then synergized with education (Kuntari, 2022).

Finally, fostering greater involvement from local maritime stakeholders is crucial. The program should actively seek to engage the local community, including maritime businesses, environmental organizations, and government agencies, in the planning and implementation of the digital literacy program. This could involve inviting local maritime experts to share their knowledge with students, organizing field trips to maritime industry sites, and involving stakeholders in curriculum development. Research has shown that partnerships between schools and local industries can provide students with valuable hands-on learning experiences and strengthen the connection between education and real-world applications (Berge et al., 2002).

Conclusion

This study underscores the importance of integrating digital literacy with maritime literacy in the context of MAN Karimun. While the program has made strides in promoting digital skills, significant weaknesses in its design, implementation, and stakeholder engagement must be addressed. By improving teacher training, enhancing digital infrastructure, integrating local maritime content, and fostering stronger ties with local maritime stakeholders, the digital literacy program can be made more effective and relevant to students' needs. Ultimately, such improvements will help students in maritime areas better navigate the digital world while staying connected to their local environment and heritage, preparing them for a future where digital and maritime knowledge are inextricably linked.

REFERENCES

Anggraeni, D. M., & Sole, F. B. (2022). The analysis of 4-C in moodle-based online learning in science learning media courses. Jurnal Penelitian Pendidikan IPA, 8(3), 1612-1617.

Berge, Z. L., Huang, Y., & Cohn, M. (2002). *Education, and Technology: Innovations and Interventions*. ERIC Clearinghouse.

Berkes. (n.d.). *Coasts for people: Interdisciplinary approaches to coastal and marine resource management*. https://www.taylorfrancis.com/books/mono/10.4324/9781315771038/coasts-people-fikret-berkes

Culp, K. M., Honey, M., & Mandinach, E. B. (2013). *A Review of Technology in Teacher Education Programs*. Journal of Teacher Education, 64(1), 43–56.

Fullan, M. (2022). *The New Meaning of Educational Change* (5th ed.). Teachers College Press.
Hague, C., & Payton, S. (2010). *Digital Literacy across the Curriculum*. Futurelab.

E-ISBN :
E-ISSN : 3047-6399
Volume 2 : 154-162

Hill, P., Borko, H., & Kennedy, M. (2013). *Educational Stakeholders and Reform*. Teachers College Record, 115(4), 1–31.

ISTE. (2020). *International Society for Technology in Education Standards*. ISTE.

King, N. A., Greene, J. A., & Smith, J. M. (2015). *Effective Curriculum Design: Exploring the Role of Local Knowledge*. Educational Psychologist, 50(3), 161–174.

Kuntari, S. (2022). Pentingnya Budaya Literasi Digital di Masa Pandemi. FORDETAK: Seminar NasionalPendidikan: Inovasi Pendidikan Di Era Society 5.0, 176–185. https://e-proceedings.iain-palangkaraya.ac.id/index.php/PSNIP/article/view/755

McDougall, J., Readman, M., & Wilkinson, P. (2018). The uses of (digital) literacy. Learning, Media and Technology, 43(3), 263–279.

Sugiyono. 2023. Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung Alfabeta

Reinders, H., & White, C. (2011). *Digital Literacy in Foreign Language Education: Theory and Practice*. Routledge.

R. Edward Freeman (1984). Strategic Management: A Stakeholder Appro. Pitman. Universitas Indiana.

Tang, C. M., & Chaw, L. Y. (2016). Digital Literacy: A Prerequisite for Effective Learning in a Blended Learning Environment?. Electronic Journal of E-Learning, 14(1), 54–65.

Van Leeuwen, M., Rocco, M., & Garcia, M. (2020). *Digital Literacy in Maritime Education: A Theoretical Approach*. Journal of Maritime Education, 37(1), 1–12.