

**REVEALING THE SOCIAL LEARNING NEEDS OF COASTAL SCHOOLS  
BASED ON SWOT ANALYSIS**

**Shahibah Yuliani<sup>1</sup>, Disman<sup>2</sup>, Enok Maryani<sup>3</sup>, Siti Nurbayani<sup>4</sup>, Eva Precilia Lukman<sup>5</sup>**

Universitas Pendidikan Indonesia<sup>1,2,3,4,5</sup>

[shahibah-yuliani@upi.edu](mailto:shahibah-yuliani@upi.edu); [disman@upi.edu](mailto:disman@upi.edu); [enokmaryani@upi.edu](mailto:enokmaryani@upi.edu);  
[s.nurbayani@upi.edu](mailto:s.nurbayani@upi.edu); [evaprecilialukman@upi.edu](mailto:evaprecilialukman@upi.edu)

**Article History**

Received:

10-05-2024

Revised:

15-05-2024

Accepted:

16-05-2025

Available online:

30-06-2024

**ABSTRACT**

This study aims to explore the development needs of social learning in coastal schools, with a specific focus on Coastal Junior High Schools in Jakarta amidst various environmental challenges and degradation. The research employs a descriptive qualitative approach, integrating SWOT analysis to identify strengths, weaknesses, opportunities, and threats related to the social learning needs in addressing coastal and marine environmental issues. Data collection involves questionnaires, interviews, and focused group discussions with 29 junior high school educators from coastal areas in Jakarta. The findings reveal the necessity for teachers to develop environmentally based teaching materials, create relevant learning modules, and utilize the environment as a learning resource. Furthermore, teachers require adequate digital skills to effectively support environment-based social learning. Emphasizing the importance of contextual learning and placed-based education, the study advocates for creating learning experiences relevant to the context and integrating digital technology to meet the needs and implications of shaping environmentally conscious communities and enhancing the quality of education in coastal schools.

**Keywords:** Coastal Schools, Social Learning, SWOT analysis

**ABSTRAK**

*Penelitian ini bertujuan untuk mengeksplorasi kebutuhan perkembangan pembelajaran sosial di sekolah pesisir, khususnya fokus pada Sekolah Menengah Pertama Pesisir Jakarta di tengah berbagai tantangan dan degradasi lingkungan. Studi ini menggunakan pendekatan kualitatif deskriptif dengan mengintegrasikan analisis SWOT untuk mengidentifikasi kekuatan, kelemahan, peluang, dan ancaman terkait kebutuhan pembelajaran sosial dalam mengatasi masalah lingkungan pesisir dan laut. Pengumpulan data melibatkan kuesioner, wawancara, dan diskusi kelompok terfokus dengan 29 pendidik sekolah menengah pertama dari daerah pesisir Jakarta. Hasil penelitian mengungkapkan kebutuhan guru untuk mengembangkan bahan*

*pengajaran berbasis lingkungan, menciptakan modul pembelajaran yang relevan, dan memanfaatkan lingkungan sebagai sumber pembelajaran. Selain itu, guru memerlukan keterampilan digital yang memadai untuk mendukung pembelajaran sosial berbasis lingkungan secara efektif. Menegaskan pentingnya pembelajaran kontekstual dan pendidikan berbasis tempat dalam menciptakan pengalaman belajar yang relevan dengan konteks dan mengintegrasikan teknologi digital untuk memenuhi kebutuhan serta berimplikasi membentuk masyarakat yang peduli lingkungan dan meningkatkan kualitas pendidikan di sekolah-sekolah pesisir.*

**Kata kunci:** Sekolah pesisir, pembelajaran social, analisis SWOT.

---

## A. INTRODUCTION

Jakarta, as a metropolitan city, holds significant importance in improving the quality of education. Unlike other cities, Jakarta serves not only as an educational center but also as a service city, a trading hub, and an economic center. This condition has implications for the declining quality of the environment, such as pollution (water, soil, air) and environmental degradation. One of the causes is the massive economic development activities that have triggered complex environmental degradation, affecting the quality of life evident from the decreased environmental capacity to meet social and ecological needs (UNISDR, 2009; Veeravatnanond & Singsewo, 2010; Veeravatnanond Dr. et al., 2012). This reality illustrates that humans are an integral part of the environment. This aligns with the reality seen in various other major cities worldwide, where environmental quality is increasingly threatened. This statement is reinforced by a variety of research conducted by many researchers, showing that ecosystem damage, such as global warming, pollution (water, soil, air), and environmental degradation, is indeed inseparable from the accumulation of human behavior (Kulözü, 2016; Zandalinas et al., 2021).

Geographically, Jakarta has coastal areas located in Cilincing, Marunda, and the Thousand Islands region. Although coastal areas hold rich potential, they also face problems. Research (Kusumawardani et al., 2022.) shows that the coastal environment of Cilincing is heavily polluted with industrial wastewater and various household waste, making it increasingly difficult for fishermen to increase their sea catch. Additionally, Jakarta's coast also experiences coastal erosion, making it vulnerable to abrasion (Indrasari, 2020). In addressing these environmental issues, environmental awareness and concern among the community are needed. Efforts to mitigate this threat require broad behavioral changes at the community, organizational, and individual levels (Welsch, 2022). As human behavior is seen as a significant contributor to these problems and solutions (W. T. Fang, 2020; W.-T. Fang et al., 2023).

Dealing with this situation, humans must be aware of the complexity of the world they live in and recognize the need to collaborate, communicate, and act for positive

change (Elfert, 2015; UNESCO, 2015; Ouane, 2009). Therefore, humans must care for and preserve their environment. These statements have been addressed in the literature in a book titled "Moral Disengagement: How People Do Harm and Live with Themselves" by (Bandura, 2016). Bandura's view indicates that human activities have a significant impact on ecosystem changes (Zsolnai, 2016). Emphasizing that sustainable environmental conservation is the main challenge faced by humans in the 21st century. Considering sustainability has been recognized as a major issue and primary goal on the global agenda. Applying a sustainable perspective undoubtedly requires a multi-dimensional approach that integrates ecological, social, economic, and political considerations shaping human utilization of nature. Similarly, in the education sector, which plays a central role in fostering environmental understanding (Lerch & Buckner, 2018; Sayed & Ahmed, 2015).

One related content area concerning humans, places, and the environment is found in social studies education (IPS). IPS education includes teaching materials that can train students to instill environmental awareness (Estiastuti et al., 2018). Furthermore, Natural Resource content is also included in junior high school IPS education. However, with the extensive content of IPS, covering History, Sociology, Geography, and Economics, IPS teaching materials are often considered boring. The methods conveyed by teachers also tend to focus more on textbooks (Rizky Baihaqi & Abdul Muiz Lidinillah, 2018). Therefore, teachers need to be creative in packaging learning, starting from lesson planning to creating teaching materials.

In the Merdeka Curriculum, creativity becomes one of the dimensions of the Pancasila Student Profile as well as an outcome of character realization that students need to possess (Lubis et al., 2023; Siahaan et al., 2021). Interesting teaching materials can stimulate students' higher-level thinking abilities, including in solving environmental problem (Meitayani et al., 2019). Critical thinking and problem-solving skills are among the competencies that students need in the 21st century; the other three competencies are communication, collaboration, and creativity (Jang, 2022). Besides having these competencies, a teacher also needs pedagogical competence. This competence is crucial because by understanding students, teachers will strive to design and implement teaching as best as possible (Efendi, 2023; Widyaningrum & Sondari, 2019).

Creative teaching methods can enhance students' abilities to solve environmental problems (Mashudi, 2021). In improving the quality of education, teachers need to create meaningful learning. Meaningful learning is manifested not only by the results shown by students but by the ability to develop the learning outcomes they obtain at school into their daily lives (Aritonang & Armanto, 2022.). In realizing its role and function, a teacher can actively involve all education components, from internal components, such as implementing new curriculum policies, to external components, namely creating an educational environment. The involvement of these components can work well with good cooperation to motivate fellow teachers in the education field. Cooperative relationships are for self-reflection in conducting learning following new curriculum changes. Without quality changes developed within a teacher, there will be no improvement in student

learning outcomes, leading to quality education with new curriculum policies (Riowati & Yoenanto, 2022). Therefore, this research aims to provide information related to the needs of social learning in coastal schools. These needs are important efforts in preventing and controlling coastal environmental problems early through education. Especially in Indonesia as a maritime country, it is our responsibility to continue preparing coastal and marine development sustainably.

This research presents a new approach by integrating SWOT analysis to uncover the specific social learning needs of coastal schools in Jakarta. The novelty of this research lies in several key areas. Firstly, this study focuses on the coastal areas of Jakarta, including Cilincing, Marunda, and the Thousand Islands, regions highly affected by pollution and coastal erosion. This geographic specificity provides detailed insight into local environmental issues and their impact on education. By using the SWOT framework (Strengths, Weaknesses, Opportunities, Threats), this study systematically identifies internal and external factors influencing social learning in coastal schools, highlighting insights for actionable measures and strategic directions for education improvement tailored to the unique context of Jakarta's coastal areas. Furthermore, this research bridges the gap between environmental degradation and educational response, emphasizing the role of social studies curriculum in fostering environmental awareness. It underscores the need for creative and engaging teaching methods to make environmental education interesting and effective for students. Drawing on empirical data from recent research and case studies, this research provides empirical data on environmental challenges faced by Jakarta's coastal communities, such as industrial pollution and coastal erosion, rooted in theoretical insights into real-world observations, enhancing the relevance and applicability of the study. Additionally, this research aligns with global sustainability goals by advocating for education that promotes environmental awareness and sustainable practices, emphasizing the importance of high-level thinking skills essential for addressing 21st-century challenges. Finally, this research advocates for a holistic approach to education improvement, involving internal curriculum design and external community engagement, fostering a supportive educational environment.

## **B. RESEARCH METHOD**

The research approach used in this study is a qualitative approach. This qualitative research is descriptive in nature, meaning the researchers conduct in-depth exploration of programs, events, processes, and activities. (Sugiyono, 2015). Data collection is done in detail using various procedures such as observation, interviews, documentation, and questionnaires (Sugiyono, 2016). The aim is to provide information about the developmental needs of social learning in coastal schools in Jakarta. Data acquisition involves two main stages: first, using questionnaires to investigate the implementation of Social Studies Learning (IPS) and second, conducting interviews and Focus Group Discussions (FGDs) with IPS teachers from various schools in the coastal areas of Jakarta. It consists of 18 teachers from public junior high schools and 11 teachers from private junior

high schools. The purpose of FGDs is to assess teachers' instructional needs regarding IPS and its application to coastal and marine environmental issues. Subsequently, the collected data undergo SWOT Analysis to validate findings and draw conclusions. The population in this study is all junior high school educators teaching in coastal areas of Jakarta. The research sample was deliberately selected, comprising 29 junior high school educators from various schools in the areas of Cilincing, Marunda, and Thousand Islands. The collected data were analyzed using triangulation techniques and SWOT Analysis to validate findings and draw conclusions. SWOT Analysis enables researchers to identify strengths, weaknesses, opportunities, and threats related to the implementation of IPS in the context of coastal and marine environmental education. Research Procedures and Steps begin with the Preparation Stage by Developing research instruments such as questionnaires and interview guides and Identifying and selecting research samples. The next stage is the Data Collection Stage with two phases: The First Phase using questionnaires to investigate the implementation of Integrated Social Studies (IPS) in coastal junior high schools and the Second Phase conducting interviews and Directed Group Discussions (FGDs) to assess teachers' teaching needs related to IPS and its application to coastal and marine environmental issues. The final stage is the Data Analysis Stage based on research findings. During the research process, data are continuously reduced to simplify, abstract, and identify important aspects. Data reduction is done continuously to facilitate analysis and pattern recognition. Data presentation is done in narrative form, charts, or tables to facilitate researchers' understanding of the collected data. Both data reduction and data presentation processes occur during the research process and before the preparation of the final report. Through clear methodology and structured research steps, it is expected that this research can be replicated by other researchers and yield consistent findings.

**C. RESULTS AND DISCUSSION**

**Results**

Based on the questionnaire, interviews, and FGD, it was found that the majority of the 29 FGD participants representing Social Studies (IPS) teachers in coastal schools in Jakarta need to master the curriculum content. This is because teachers are accustomed to covering material from textbooks. However, in the current Merdeka Curriculum, the priority of learning content is aligned with the characteristics of students and substantial content tailored to the learning objectives. By prioritizing the utilization of strengths, addressing weaknesses, exploiting opportunities, and anticipating threats, researchers explored the needs of Social Studies learning in addressing marine and coastal environmental issues in Jakarta through SWOT analysis, as presented in Table 1 below:

**Table 1.** Social Studies Learning Needs in Coastal Schools in Jakarta through SWOT Analysis

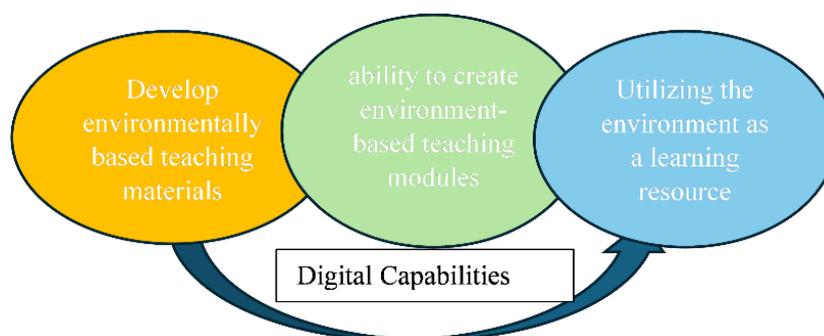
<b>Strenghts</b>	<b>Weakness</b>
1. Teacher Awareness The majority of teachers possess an awareness of the importance of	1. Limitation of IT Knowledge The lack of understanding and skills in using information technology among

<p>developing students' abilities to enhance the quality of learning.</p> <p>2. Teacher Experience Direct experience of teachers in teaching and observing students' abilities provides valuable insights for designing effective learning strategies through contextual and creative teaching methods.</p> <p>3. Research Focus The research focus on efforts to prevent coastal and marine environmental issues requires early environmental understanding through education in coastal schools, thus enabling the formulation of appropriate solutions to enhance learning.</p> <p>4. Availability of Natural Environment The rich natural environment serves as a contextual learning source that stimulates students' critical and creative thinking abilities in preventing coastal and marine environmental issues.</p>	<p>some teachers becomes a barrier in implementing innovative, technology-based teaching.</p> <p>2. Lack of Suitable Teaching Materials The shortage of appropriate and high-quality teaching materials can hinder teachers' ability to create stimulating and challenging learning environments.</p> <p>3. Lack of Understanding in Lesson Planning The change from the previous 2013 Curriculum to the Merdeka Curriculum requires teachers to adapt in designing lesson plans. This includes creating Lesson Implementation Plans (KKTP), Determining Learning Objectives (TP), Learning Implementation Plans (ATP), and Teaching Modules that include assessments.</p> <p>4. Time Constraints in Learning Limited time allocation for learning, especially during the implementation of P5 (additional learning hours), can hinder efforts to develop diverse and in-depth learning materials.</p> <p>5. Lack of Local Community Engagement The absence of materials linking learning to the local environment, especially coastal and marine environments, affects students' understanding of the potential coastal and marine resources and efforts to prevent related issues.</p>
<b>Opportunities</b>	<b>Threats</b>
<p>1. Development of Teaching Modules Awareness of the importance of developing environmentally-based teaching modules provides an opportunity to utilize the local environment as a real and relevant learning resource.</p> <p>2. Enhancement of Ecological Concept Understanding</p>	<p>1. Implementation Uncertainty Missteps in the stages of teaching and the adoption of teaching methods and models can impact the difficulty for teachers in implementing environmentally-based teaching modules. This condition implies a lack of understanding among students.</p> <p>2. Resource Limitations</p>

<p>Opportunities to improve understanding of ecological concepts through the identification of environmental issues around the school provide a strong foundation for enhancing coastal and marine ecoliteracy.</p> <p>3. Development of Teaching Materials Involving Students and the Environment Involvement of students and the local environment in the development of teaching materials provides opportunities to create active, participatory, and relevant learning experiences tailored to the needs of students and the surrounding environment.</p>	<p>Limited resources, both financially and in terms of infrastructure, can pose obstacles in the development of instructional planning to create innovative and environmentally-based teaching modules.</p> <p>3. High Workload of Teachers The high workload of teachers can reduce time and energy, disrupting the allocation for the development of teaching materials.</p>
--	--

Source: managed by author (2024)

Based on the table above, it is evident that the needs of teachers in Social Studies (IPS) learning to address coastal and marine environmental issues require minimizing weaknesses and threats while enhancing strengths and opportunities. Thus, the needs required by students in coastal junior high schools that need to be developed by teachers are depicted in the following Figure 1:



Source: managed by author (2024)

**Figure 1.** Priority Needs for Coastal Junior High School Teachers

Based on the illustration, it is evident that the priority need is for teachers in coastal junior high schools to possess the ability to develop environmentally based teaching materials, create environment-based teaching modules, and utilize the environment as a learning resource. This necessity arises due to the complexity of environmental challenges faced by coastal regions, such as marine pollution and coastal ecosystem degradation. Teachers in coastal junior high schools must integrate environmental issues into their social studies (IPS) instruction so that students can comprehend the importance of preserving

coastal environments. By developing environmentally based teaching materials, teachers can create contextual and relevant learning experiences for students, thus enhancing their understanding of the impact of human activities on the environment. Additionally, the ability to create environment-based teaching modules enables teachers to design challenging lessons that motivate students to think critically about environmental issues. Utilizing the environment as a learning resource is also crucial for providing students with real-world learning experiences and allowing them to connect theoretical concepts with real-world situations. However, to ensure the successful implementation of environment-based learning, every teacher must also possess adequate digital skills. This is essential because digital technology can serve as an effective tool in supporting environment-based learning, including in material development, module creation, and environmental research. Therefore, the development of digital skills is essential to optimize social studies (IPS) learning in coastal junior high schools and positively impact students and the surrounding environment.

### **Discussion**

Coastal schools, as both formal and informal social institutions, are situated in geographic areas influenced by phenomena such as tidal changes, the sound of waves, sea breezes, and seawater runoff (Cresencio & Yabut, 2023). These areas are also home to communities engaged in maritime activities, fishing, and coastal settlements. Leveraging the geographical advantages of coastal schools undoubtedly enriches learning by using the environment as a contextual learning resource. Contextual learning is highly relevant to 21st-century education as it helps cultivate environmentally conscious communities. Social Studies (IPS), as a social subject, plays a crucial role in enhancing students' environmental awareness.

Therefore, Social Studies teachers in coastal junior high schools are expected to implement contextual learning that emphasizes environmental and community concepts. Social Studies differs from monodisciplinary sciences because it integrates various social science disciplines. Geography provides an understanding of geographic areas, history deals with past events, economics addresses human needs, sociology or anthropology focuses on values, beliefs, and social structures, while political science deals with the relationships between individuals and the state, as well as between nations. Psychology addresses human mental conditions. Sociology and social psychology study human behavior, including concepts such as roles, groups, institutions, interaction processes, and social control. These concepts are widely used in social sciences and social studies.

This research highlights the urgency of developing specific capabilities for teachers in coastal schools to improve the quality of education. These capabilities include developing environment-based teaching materials, creating environment-based learning modules, and utilizing the environment as a learning resource. Additionally, adequate digital skills are also important to support environment-based learning. These capabilities are detailed as follows: The first capability is Developing Environment-Based Teaching Materials. Field evidence shows that most teachers in coastal schools often rely on national textbooks or

traditional textbooks in the teaching and learning process, using the lecture method as the primary learning source. This approach results in classical and one-way learning. If this approach continues, it will undoubtedly hinder students' creativity and engagement (Yasin et al., 2023). Therefore, teachers need to develop the ability to create interactive and contextual teaching materials, utilizing various sources such as digital media, journal articles, case studies, and firsthand experiences (Solissa et al., 2023).

In fact, teachers in coastal schools have geographical advantages that can be further developed, such as coastal and marine areas. Referring to the theory of Place-Based Education, it emphasizes the importance of the local environment as a context for learning. (Contreras & Murga-Menoyo, 2019; Semken et al., 2017). By developing environment-based teaching materials, teachers can create materials relevant to the conditions and experiences of students in their communities (Hernandez et al., 2022). This approach not only makes learning more interesting but also helps students develop critical thinking skills and solve problems relevant to their daily lives (Ramadansur et al., 2023; Hamilton & Marckini-Polk, 2023). This aligns with the theory of Contextual Teaching and Learning (CTL), which also emphasizes the importance of linking learning material with real-life contexts. (Hasnawati, 2006). In CTL, learning occurs when students can relate the knowledge they learn in class to their life experiences. Environment-based teaching materials can help students see the relevance between learning material and their surroundings, enhancing their engagement and understanding. The use of various sources such as digital media, journal articles, and case studies supports deeper and more meaningful learning. Meanwhile, place-based education theory emphasizes the importance of the local environment as a context for learning (Anthony Deringer, 2017). By developing environment-based teaching materials, teachers can create materials that are relevant to the conditions and experiences of students in their communities (Yemini et al., 2023). This approach not only makes learning more interesting but also helps students develop critical thinking skills and solve problems relevant to their daily lives (Hamilton & Marckini-Polk, 2023). The combination of these two theories enables more relevant, interactive, and contextual learning, improving the quality of education (Sari Astiti et al., 2017; Utari & Kristin, 2023; Wasti, 2023).

The second capability is Creating Environment-Based Learning Modules. It is important for teachers to consider the characteristics of students and the local environment when designing teaching modules. The success of learning largely depends on how well the modules adapt to the needs and conditions of students and their surroundings. Therefore, in creating teaching modules, teachers need to select appropriate models and strategies that match the characteristics of students and the local environment. When the learning models and strategies used align with the conditions of the students and the environment, learning becomes more effective and efficient. Additionally, the ability of teachers to create creative teaching modules is also an important factor in improving the quality of learning. Creative modules can attract students' attention, making them more interested and motivated in the learning process. By using innovative and

engaging approaches, teachers can create an inspiring and enjoyable learning environment for students. This will positively impact student learning outcomes, as they will be more active in the learning process and better able to understand the material being taught. Thus, adapting to the characteristics of students and the local environment in creating teaching modules, as well as the ability of teachers to create creative modules, are two interconnected aspects that play an important role in improving the quality of learning and student learning outcomes.

The third capability is Utilizing the Environment as a Learning Resource. Using the environment as a teaching resource is an effective approach to making learning more contextual and meaningful (Tejokusumo, 2014). Research shows that using the surrounding environment can help students better understand concepts through direct experience (Mann et al., 2022). This aligns with Environmental Learning Theory, which emphasizes the importance of direct interaction with the environment in learning (Ardoin & Heimlich, 2021; "Transformative Learning in Environmental Education: Theory and Practice," 2023). Activities such as field projects, direct observation, and local case studies allow students to see and feel the real impact of the concepts they learn (Cincera et al., 2020). This not only deepens students' understanding but also encourages them to appreciate and care for their environment (Kiviranta et al., 2024; Siskind et al., 2022).

Besides the three capabilities that coastal teachers must possess, they also need to be strengthened with Adequate Digital Skills. Digital literacy is very important in today's technological era (Mahmud & Ekawati, 2023). Digital skills enable teachers to integrate technology into environment-based learning, such as using software for environmental data analysis or e-learning platforms to enrich teaching materials (Aulia et al., 2022; Falloon, 2020). This supports the development of more interactive and contextual teaching materials and provides access to global educational resources. Digital skills are an integral part of 21st-century skills (Isrokatun et al., 2022). Teachers who are proficient in technology can help students develop their digital literacy, which includes the ability to search, evaluate, and use digital information effectively. This is essential to prepare students for the challenges of an increasingly digital world. (Gümüş & Kukul, 2023; Mahmud & Ekawati, 2023) However, field evidence shows that many teachers still lack IT skills, hindering the integration of technology into learning. Thus, continuous professional training and development are needed to improve teachers' IT proficiency. With adequate IT skills, teachers can create more interactive teaching materials, manage virtual classrooms, and access diverse global educational resources, making learning more efficient and engaging for students.

This research emphasizes the urgency of developing teachers' abilities in creating environment-based teaching materials, designing relevant learning modules with local context, and utilizing the environment as a learning resource. These three capabilities must be supported by adequate digital or IT skills to ensure that learning becomes more interactive, contextual, and relevant to students' needs in the 21st century. Through the application of contextual learning theory, place-based education theory, and

environmental learning theory, teachers can create more effective and meaningful learning experiences for students in coastal schools.

#### **D. CONCLUSION**

The conclusion of this research highlights the importance of developing social studies teachers' abilities in coastal schools to enhance the quality of education and the urgent need to improve the mastery of the independent curriculum among social studies teachers in coastal schools in Jakarta. Efforts to prioritize learning that aligns with the needs and characteristics of students, as well as being substantively relevant to the learning objectives, are essential. Based on these statements, the researchers applied a SWOT approach to explore the needs of social learning with the aim of providing information on the developmental needs of social learning in coastal schools, specifically in this case, Coastal Junior High Schools in Jakarta.

The SWOT analysis results, after crystallization, indicate that teachers in coastal schools need to have the ability to develop environmentally-based teaching modules, create relevant environmentally-based learning modules, and utilize the surrounding environment as a contextual learning resource. This is relevant to 21st-century education, which emphasizes the formation of environmentally conscious communities and aims to enhance students' understanding of coastal and marine environmental issues due to their connectivity and relevance to the environment. Essentially, teachers and students in coastal schools have different needs that must be met to improve social learning. Teachers need to enhance their mastery in designing effective, environmentally-based, and contextual learning strategies. They must develop teaching modules that utilize natural resources and the local environment to reinforce students' understanding. Digital skill development is also crucial for teachers to optimize learning. In the context of contextual learning, creative and responsive teachers to students' needs are essential. They must be able to create a supportive learning environment, facilitate the development of students' creativity and critical thinking, and integrate learning materials with real-life situations relevant to students' lives. Through various approaches, such as the use of technology, active learning methods, and student collaboration, teachers can inspire students to be active in the learning process, develop critical thinking, and find creative solutions to problems. By understanding each student's individual needs and using assessments to monitor their progress, teachers can ensure that each student receives the support they need to reach their full potential in learning.

#### **E. ACKNOWLEDGEMENTS**

The author would like to express gratitude to the Ministry of Research, Technology, and Higher Education (Kemendiknas), the Promotors, and the coastal schools in North Jakarta and Seribu Islands for their permission and participation in this research activity.

#### **F. REFERENCES**

Anthony Deringer, S. (2017). Mindful place-based education: Mapping the literature. *Journal of Experiential Education*, 40(4). <https://doi.org/10.1177/1053825917716694>

- Ardoin, N. M., & Heimlich, J. E. (2021). Environmental learning in everyday life: foundations of meaning and a context for change. In *Environmental Education Research* (Vol. 27, Issue 12). <https://doi.org/10.1080/13504622.2021.1992354>
- Aritonang, I. B., & Armanto, D. (n.d.). *PROSIDING PENDIDIKAN DASAR URL: https://journal.mahesacenter.org/index.php/ppd/index* Peran Guru Dalam Merdeka Belajar Untuk Meningkatkan Pembelajaran Matematika Siswa di Era Pandemic Covid-19. <https://doi.org/10.34007/ppd.v1i1.202>
- Aulia, A. M. I., Hamidah, H., Adelina Dewi Nuryaman, & Samdouni, S. (2022). Digital Literacy: Arabic Teacher Competencies in Distance Learning. *Izdihar : Journal of Arabic Language Teaching, Linguistics, and Literature*, 5(2). <https://doi.org/10.22219/jiz.v5i2.19709>
- Bandura, A. (2016). Moral disengagement: How people do harm and live with themselves. In *Moral disengagement: How people do harm and live with themselves*.
- Cincera, J., Johnson, B., & Kroufek, R. (2020). Outdoor environmental education programme leaders' theories of experiential learning. *Cambridge Journal of Education*, 50(6). <https://doi.org/10.1080/0305764X.2020.1770693>
- Contreras, M. F. S., & Murga-Menoyo, M. Á. (2019). Place-based education: An approach for a sustainable curriculum in higher education. *Bordon. Revista de Pedagogia*, 71(2). <https://doi.org/10.13042/Bordon.2019.68295>
- Cresencio, M., & Yabut, E. (2023). Implementation of school disaster risk reduction in coastal schools: Basis for a plan of action. *Journal of Education and E-Learning Research*, 10(2). <https://doi.org/10.20448/jeelr.v10i2.4592>
- Efendi, P. M. (2023). Keterampilan Abad 21 Kaitannya Dengan Karakteristik Masyarakat di Era Abad 21. *Caruban: Jurnal Ilmiah Ilmu Pendidikan Dasar*, 6(1). <https://doi.org/10.33603/caruban.v6i1.8009>
- Elfert, M. (2015). UNESCO, the Faure report, the Delors report, and the political utopia of lifelong learning. *European Journal of Education*. <https://doi.org/10.1111/ejed.12104>
- Estiastuti, A., Bektiningsih, K., & Nurharini Pendidikan Guru Sekolah Dasar, A. (2018). PENDIDIKAN LINGKUNGAN MELALUI PEMBELAJARAN IPS DENGAN PENDEKATAN PROJECT BASED LEARNING DALAM MENCIPTAKAN SEKOLAH HIJAU. In *Jurnal Kreatif* (Vol. 9, Issue 1).
- Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5). <https://doi.org/10.1007/s11423-020-09767-4>
- Fang, W. T. (2020). *Envisioning environmental literacy*. Springer. <https://doi.org/10.1007/978-981-15-7006-3>
- Fang, W.-T., Hassan, A., & LePage, B. A. (2023). *The Living Environmental Education*. Springer Nature Singapore. <https://doi.org/10.1007/978-981-19-4234-1>
- Gümüş, M. M., & Kukul, V. (2023). Developing a digital competence scale for teachers: validity and reliability study. *Education and Information Technologies*, 28(3). <https://doi.org/10.1007/s10639-022-11213-2>
- Hamilton, E., & Marckini-Polk, L. (2023). The impact of place-based education on middle school students' environmental literacy and stewardship. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186X.2022.2163789>
- Hasnawati. (2006). Pendekatan Contextual Teaching Learning. *Jurnal Ekonomi & Pendidikan*, 3.

- Hernandez, J., Scherr, R., German, M., & Horowitz, R. (2022). Place-Based Education in High School Science: Situating Energy and Climate Change in Students' Communities. *Sustainability and Climate Change*, 15(1). <https://doi.org/10.1089/scc.2021.0058>
- Indrasari, D. (2020). IDENTIFIKASI MASALAH DAN MODEL PENGELOLAAN WILAYAH PESISIR: STUDI KASUS PROVINSI DKI JAKARTA. In *Jurnal Kajian Teknik Sipil* (Vol. 5, Issue 01). <https://mongabay.co.id>,
- Isrokatun, I., Pradita, A. A., Ummah, S. A., Amalia, D. Y., & Salsabila, N. S. (2022). Digital Literacy Competency of Primary School Teacher Education Department Student as the Demands of 21st Century Learning. *Mimbar Sekolah Dasar*, 9(3). <https://doi.org/10.53400/mimbar-sd.v9i3.44057>
- Jang, S. (2022). Case Analysis of Overseas Countries in Project-based Learning for Vocational Education and Workforce Development. *International Journal of Emerging Technology and Advanced Engineering*, 12, 78–85. [https://doi.org/10.46338/ijetae0422\\_11](https://doi.org/10.46338/ijetae0422_11)
- Kiviranta, L., Lindfors, E., Rönkkö, M. L., & Luukka, E. (2024). Outdoor learning in early childhood education: exploring benefits and challenges. In *Educational Research* (Vol. 66, Issue 1). <https://doi.org/10.1080/00131881.2023.2285762>
- Kulözü, N. (2016). Youths' perception and knowledge towards environmental problems in a developing country: in the case of Atatürk University, Turkey. *Environmental Science and Pollution Research*, 23(12). <https://doi.org/10.1007/s11356-016-6693-2>
- Kusumawardani, V., Aidar Idrus, I., Zakiyah, U., & Maria Herawati, D. (n.d.). Pendampingan Masyarakat dalam Penyelamatan Lingkungan di Kampung Baru Nelayan Cilincing, Jakarta Utara. In *Periode Januari-Juni* (Vol. 5, Issue 1).
- Lerch, J. C., & Buckner, E. (2018). From education for peace to education in conflict: changes in UNESCO discourse, 1945–2015. *Globalisation, Societies and Education*, 16(1). <https://doi.org/10.1080/14767724.2017.1387769>
- Lubis, M. U., Siagian, F. A., Zega, Z., Nuhdin, N., & Nasution, A. F. (2023). Pengembangan Kurikulum Merdeka Sebagai Upaya Peningkatan Keterampilan Abad 21 Dalam Pendidikan. *ANTHOR: Education and Learning Journal*, 2(5). <https://doi.org/10.31004/anthor.v1i5.222>
- Mahmud, M. R., & Ekawati, D. (2023). The relationship between digital literacy and the competency of prospective teacher students in the society 5.0 era. *PrimaryEdu : Journal of Elementary Education*, 7(1).
- Mann, J., Gray, T., Truong, S., Brymer, E., Passy, R., Ho, S., Sahlberg, P., Ward, K., Bentsen, P., Curry, C., & Cowper, R. (2022). Getting Out of the Classroom and Into Nature: A Systematic Review of Nature-Specific Outdoor Learning on School Children's Learning and Development. In *Frontiers in Public Health* (Vol. 10). <https://doi.org/10.3389/fpubh.2022.877058>
- Mashudi, M. (2021). Pembelajaran Modern: Membekali Peserta Didik Keterampilan Abad Ke-21. *Al-Mudarris (Jurnal Ilmiah Pendidikan Islam)*, 4(1). <https://doi.org/10.23971/mdr.v4i1.3187>
- Meitayani, M., Nadhiro, N., & Syaban, A. (2019). MEMBANGUN KEMAMPUAN BERPIKIR KREATIF UNTUK MENGATASI MASALAH LINGKUNGAN DENGAN MENGGUNAKAN PEMBELAJARAN OTENTIK. *EDUSAINS*, 11(2), 297–302. <https://doi.org/10.15408/es.v11i2.13066>
- Org, U. (2015). *Building peace in the minds of women and men Organisation des Nations Unies pour l'éducation, la science et la culture United Nations Educational, Scientific*

- and Cultural Organization United Nations Educational, Scientific and Cultural Organization. <http://www.unesco.org/open-access/terms-use-ccbysa-en>
- Ouane, A. (2009). UNESCO's drive for lifelong learning. ... *Routledge International Handbook of Lifelong Learning*. <https://doi.org/10.4324/9780203870549-33>
- Ramadansur, R., Sembiring, A. K., Rizky, R., & Nelvariza, N. (2023). Promoting Critical Thinking Skills through Contextual Teaching and Learning. *Lectura : Jurnal Pendidikan*, 14(2). <https://doi.org/10.31849/lectura.v14i2.15030>
- Riowati, R., & Yoenanto, N. H. (2022). Peran Guru Penggerak pada Merdeka Belajar untuk Memperbaiki Mutu Pendidikan di Indonesia. *Journal of Education and Instruction (JOEAI)*, 5(1), 1–16. <https://doi.org/10.31539/joeai.v5i1.3393>
- Rizky Baihaqi, M., & Abdul Muiz Lidinillah, D. (2018). PEDADIDAKTIKA: JURNAL ILMIAH PENDIDIKAN GURU SEKOLAH DASAR Pengembangan Media Kartu Nusantara untuk Pembelajaran IPS Kelas IV SDN pada Materi Keanekaragaman Suku Bangsa dan Budaya. In *All rights reserved* (Vol. 5, Issue 2). <http://ejournal.upi.edu/index.php/pedadidaktika/index>
- Sari Astiti, N. N., Lasmawan, I. W., & Akhmad Haris, I. (2017). PENERAPAN MODEL PEMBELAJARAN CONTEXTUAL TEACHING AND LEARNING, QUANTUM TEACHING TERHADAP MOTIVASI BERPRESTASI DAN HASIL BELAJAR IPS SISWA KELAS VII. *Jurnal Pendidikan IPS Indonesia*, 1(2). <https://doi.org/10.23887/pips.v1i2.2825>
- Sayed, Y., & Ahmed, R. (2015). Education quality, and teaching and learning in the post-2015 education agenda. *International Journal of Educational Development*, 40. <https://doi.org/10.1016/j.ijedudev.2014.11.005>
- Semken, S., Ward, E. G., Moosavi, S., & Chinn, P. W. U. (2017). Place-based education in geoscience: Theory, research, practice, and assessment. In *Journal of Geoscience Education* (Vol. 65, Issue 4). <https://doi.org/10.5408/17-276.1>
- Siahaan, T. M., Sianipar, H. F., Simamora, R., Sijabat, A., & Sinaga, C. V. R. (2021). Pengembangan Buku Ajar Berbasis Kooperatif Tipe Jigsaw untuk Meningkatkan Kemampuan Berpikir Kreatif Mahasiswa. *Jurnal Basicedu*, 5(4), 2496–2503. <https://doi.org/10.31004/basicedu.v5i4.1213>
- Siskind, D., Conlin, D., Hestenes, L., Kim, S. A., Barnes, A., & Yaya-Bryson, D. (2022). Balancing technology and outdoor learning: Implications for early childhood teacher educators. In *Journal of Early Childhood Teacher Education* (Vol. 43, Issue 3). <https://doi.org/10.1080/10901027.2020.1859024>
- Solissa, E., Mustoip, S., Marlina, Cahyati, S., & Asdiana. (2023). Components of Contextual Teaching and Learning as The Basis for Developing a Character Education Model. *Journal of Etika Demokrasi*, 8(1).
- Sugiyono. (2015). Sugiyono, Metode Penelitian dan Pengembangan Pendekatan Kualitatif, Kuantitatif, dan R&D , (Bandung: Alfabeta, 2015), 407 1. *Metode Penelitian Dan Pengembangan Pendekatan Kualitatif, Kuantitatif, Dan R&D, 2015*.
- Tejokusumo, B. (2014). Dinamika Masyarakat Sebagai Sumber Belajar Ilmu Pengetahuan Sosial. *Jurnal Geodukasi*, 3(1).
- Transformative Learning in Environmental Education: Theory and Practice. (2023). *International Electronic Journal of Environmental Education*. <https://doi.org/10.52783/iejee.v13.i1.126>
- UNISDR. (2009). 2009 UNISDR Terminology on Disaster Risk Reduction. *International Strategy for Disaster Reduction (ISDR)*.

- Utari, A. D., & Kristin, F. (2023). Efektivitas Model Problem Based Learning dan Contextual Teaching and Learning Terhadap Kemampuan Berpikir Kreatif Siswa Pembelajaran IPS Kelas IV SD. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, 6(12). <https://doi.org/10.54371/jiip.v6i12.3421>
- Veeravatnanond Dr., V., Nasa-Arn Dr., S., Nithimongkonchai Dr., W., Wongpho Dr., B., & Phookung Dr., K. (2012). Development of risk assurance criteria to the utilization of natural resources and environment for sustainable development of life quality, economy and society in rural Thai communities. *Asian Social Science*, 8(2). <https://doi.org/10.5539/ass.v8n2p189>
- Veeravatnanond, V., & Singsewo, A. (2010). A developmental model of environmental education school. *European Journal of Social Sciences*, 17(3).
- Wasti, Y. (2023). MENINGKATKAN HASIL BELAJAR IPS DENGAN MENGOPTIMALKAN LANGKAH-LANGKAH MODEL PEMBELAJARAN CONTEXTUAL TEACHING AND LEARNING(CTL) SISWA KELAS VII.3 SMP NEGERI 16 BATAM TAHUN PELAJARAN 2019/2020. *SENTRI: Jurnal Riset Ilmiah*, 2(5). <https://doi.org/10.55681/sentri.v2i5.903>
- Welsch, H. (2022). Correction to: What shapes cognitions of climate change in Europe? Ideology, morality, and the role of educational attainment (*Journal of Environmental Studies and Sciences*, (2022), 12, 2, (386-395), 10.1007/s13412-021-00745-7). In *Journal of Environmental Studies and Sciences* (Vol. 12, Issue 2, pp. 396–397). Springer. <https://doi.org/10.1007/s13412-022-00753-1>
- Widyaningrum, W., & Sondari, E. (2019). MENINGKATKAN KOMPETENSI PROFESIONALISME GURU DI ABAD 21 MELALUI PELATIHAN PEMBELAJARAN BAHASA INGGRIS. In *Jurnal Pengabdian Masyarakat* (Vol. 1, Issue 1). [www.e-journal.metrouniv.ac.id](http://www.e-journal.metrouniv.ac.id)
- Yasin, B., Yusuf, Y., Mustafa, F., Khairuddin, Safina, D., & Sarinauli, B. (2023). Introducing Contextual Teaching and Learning as a Transition from Textbook-Based Curriculum to the National Curriculum. *European Journal of Educational Research*, 12(4). <https://doi.org/10.12973/eu-jer.12.4.1767>
- Yemini, M., Engel, L., & Ben Simon, A. (2023). Place-based education—a systematic review of literature. In *Educational Review*. <https://doi.org/10.1080/00131911.2023.2177260>
- Zandalinas, S. I., Fritschi, F. B., & Mittler, R. (2021). Global Warming, Climate Change, and Environmental Pollution: Recipe for a Multifactorial Stress Combination Disaster. In *Trends in Plant Science* (Vol. 26, Issue 6). <https://doi.org/10.1016/j.tplants.2021.02.011>
- Zsolnai, L. (2016). Moral Disengagement: How People Do Harm and Live with Themselves, by Albert Bandura. *Business Ethics Quarterly*, 26(3).