Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index

Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

Ecopedagogics as An Alternative Approach in Developing Social Studies Teaching Materials in Coastal Schools in Jakarta

Shahibah Yuliani[1*], Disman[2] , Enok Maryani[3] , Siti Nurbayani[4]
[1*]Social Sciences Education Study Program, [3]Geography Education Study Program,
[4]Sociology Education Study Program, Faculty of Social Sciences Education,
[2]Economic Education Study Program, Faculty of Economics and Business Education,
Universitas Pendidikan Indonesia.
[1*]Universitas Negeri Jakarta, Indonesia.
*Corresponding Author. Email: shahibah-yuliani@upi.edu

Abstract: The study explores the urgency of eco-pedagogic as a social study teaching materials approach in Jakarta schools and relevant content lifted in developing social studies teaching materials by eco-pedagogics approach. This research used a qualitative method. The collected data were analyzed using triangulation techniques used the participant observation, FGD, and interview involving 28 social studies teachers at schools in North Jakarta and Kepulauan Seribu. Then, it was processed with device NVivo 12 software. The research results showed that (1) The teacher considered that eco-pedagogic approach became a need for developing social studies teaching materials in coastal schools, (2) Relevant content in eco-pedagogic-based teaching materials covered aspects of sustainability environment coast, utilization of environmental functions, and natural resource management. The development of teaching materials was carried out by considering the learning objectives that include evaluation of coastal and marine resource potential, designing solutions to environmental problems, and argument presentation. The proposed learning model in teaching materials was Project-based Learning. In conclusion, the development of ecopedagogy-based teaching materials is very needed as an environmental conservation effort, because in previous research there were no teaching materials that focused on coastal and marine environments. Then, the content contained in social studies teaching materials is eco-pedagogically based with a project-based learning model can be an enriching reference for students at coastal junior high schools in Jakarta focusing on relevant content and using appropriate learning models is expected that students can understand better and care about the coastal and marine environment.

Article History
Received: 08-03-2024
Revised: 16-04-2024
Accepted: 23-05-2024
Published: 22-06-2024

Key Words:
Eco-Pedagogy; Social Studies Education; Coastal Natural Resources; Project-Based Learning.

How to Cite: Yuliani, S., Disman, D., Maryani, E., & Nurbayani, S. (2024). Ecopedagogics as An Alternative Approach in Developing Social Studies Teaching Materials in Coastal Schools in Jakarta. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran, 10*(2), 541-552. doi:https://doi.org/10.33394/jk.v10i2.11509

https://doi.org/10.33394/jk.v10i2.11509

Introduction

Jakarta has coastal areas that are of concern. The exploitation of natural resources has resulted in the condition of Jakarta's coastal areas having pollution problems and the existence of people who still live below the poverty line, such as around the coast of Cilincing (Simbolon, 2016). In addition, the coast of the Seribu Islands is still frequently hit by abrasion and marine debris (Arifin et al., 2020). Coastal and marine areas play an important role which is expected to support the economy in various aspects in a *sustainable.* Therefore, environmental awareness and creativity are needed in minimizing environmental problems, one of which is through social studies learning. In learning, interesting teaching materials can make it easier for students to answer questions and improve creative abilities in

Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

solving problems (Siahaan et al., 2021a). However, based on observations and interviews of researchers regarding social studies teacher teaching modules, the teachers still have not raised local problems as learning content in teaching materials, so these conditions are not yet aligned with the formulation of competency in social studies learning, namely that students are able to understand the existence of themselves, their families and their immediate environment.

Students analyze the relationship between regional geographical conditions and community characteristics and understand the potential of its natural resources, so that they can create works and carry out relevant social actions within their families and nearby communities (Ferreira, 2021). Despite this, the development of teaching materials does not only emphasize cognitive aspects but also attitudes and behavior aspects. The eco-pedagogical approach, also known as ecological pedagogy, is a theoretical framework that emphasizes the integration of ecological and sustainability principles into education (Fauzi et al., 2022; Misiaszek, 2020; Supriatna, 2016). The aim is to foster an understanding of the interrelationship between humans and the natural environment and to encourage environmentally responsible attitudes and behavior (Fadjarajani & As'ari, 2021; Irianto et al., 2018; Korsant, 2022).

Ecopedagogy has a strong connection to coastal schools due to its focus on integrating ecological and sustainability principles into education. In coastal schools, natural environments such as beaches and seas are an important part of the learning context. The eco-pedagogical approach allows students to engage directly with the environment around them, whether through field trips to the beach or environmental conservation projects. In addition, eco pedagogy allows the use of concrete examples from the local environment to teach the concepts of ecology and sustainability. With the active involvement of students in environmental conservation efforts, coastal schools can become centers of conservation activities that involve the entire school community and local community (Putri et al., 2019; Suciati et al., 2015). Through ecopedagogy, students are also invited to identify and solve specific environmental problems in the coastal areas where they live, such as coastal erosion or marine pollution (Berke & Smith, 2009; Mahat et al., 2022; Martin, 2016). Thus, eco pedagogy becomes relevant in the context of coastal schools because it helps students to understand, appreciate, and protect the natural environment which is an important part of their lives. Therefore, the scientific novelty in this research is developing social studies teaching materials through an eco-pedagogic approach which is implemented through a project-based learning model as an effort to increase coastal and environmental eco-literacy, through evaluating the potential of coastal and marine resources content, designing solutions to environmental problems/mitigation disaster, and presentation argument about management environment as students need at Pesisir Jakarta Middle School. So, the aim of this study to explore urgency ecopedagogic as social studies teaching materials approach in Jakarta schools coast and relevant content lifted in develop social studies teaching materials by ecopedagogics approach.

Research Method

This research used the qualitative method. The collected data were analyzed using triangulation techniques used in participant observation, FGD, and interview. The research subject consisted of teachers and students from schools in the coastal areas of DKI Jakarta. The sample was selected using a purposive sampling technique with a total of 28 teacher participants. Modifications to the steps in this research include (1) information collection, (2) product planning and development, (3) expert testing, and (4) revision based on input. The

Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

data in this research is presented based on qualitative data. This research explores teachers' needs in developing teaching materials that can contribute to local wisdom in coastal areas, so this research aims to provide an overview of the eco-pedagogic approach required in the development of social studies teaching materials in schools coast of Jakarta and uncover relevant content presented in eco pedagogic based on social studies teaching materials.

Data was collected through semi-structured interviews with teachers and students, classroom observations, and analysis of teaching materials. The use of NVIVO software as the primary tool for qualitative data analysis allows efficient organization and analysis of data. In addition, the presence of researchers in the classroom during science lessons allows direct observation of teaching practices and student interactions. The research was conducted for six months in schools in the coastal areas of DKI Jakarta. The triangulation methods and data sources were used to validate the product being developed. Triangulation is needed to evaluate the process of testing the model/product developed (Prasetyo, n.d.).

Results and Discussion

Ecopedagogical Urgency as an Approach to Social Sciences Teaching Materials

Ecopedagogy as a movement departs from real-life problems and is based on life perspective (N. Supriatna, 2017). Ecopedagogic needs to be implemented in social studies learning, through material development teaching, so that learning content does not only emphasize cognitive aspects, but attitude aspects and behavior (Kostoulas-Makrakis, 2010). According to Gyallay destination eco pedagogy includes: (1) giving an understanding of concerns related to economic, social, political, and ecological aspects, (2) providing opportunities to develop knowledge, values, attitudes, commitment, and ability to protect and repair the environment, (3) create behavior as a whole to the environment, on the aspect of knowledge, attitude, concern, skills, and participation (Muhaimin M., 2014) Ecopedagogics is considered a new pedagogy that unites human rights with natural rights (Gadotti, 2010).

Related to this, so far schools in coastal areas have had little access to efforts to improve or repair quality. Students in coastal areas become part of communities most vulnerable to natural disasters. Apart from that, coastal culture has local wisdom values that can be explored and developed (Hajaroh et al., 2017). Based on the findings of researchers through results interviews with several informants at Coastal Middle School in Kepulauan Seribu, it turns out that many students still don't understand the types of mangroves and coral reefs and their benefits. They just know that coastal and marine plants are mangroves. That way, the development of teaching materials that take into account environmental characteristics and the local wisdom of schools is essential, so that the coastal school environment becomes a common concern (Kurniawan & Maryani, 2015).

Therefore, developing ecopedagogical-based social studies teaching materials becomes the need for Coastal Middle School students, especially in DKI Jakarta as a capital city with a diverse society hope that students' eco-literacy towards the coastal and sea environment will be good. That way, teaching materials need to be made as effective as possible. Based on the results, processed Researcher data assisted by processing the Word Tree feature for effective teaching materials, which is depicted in Figure 1 below

Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index
Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

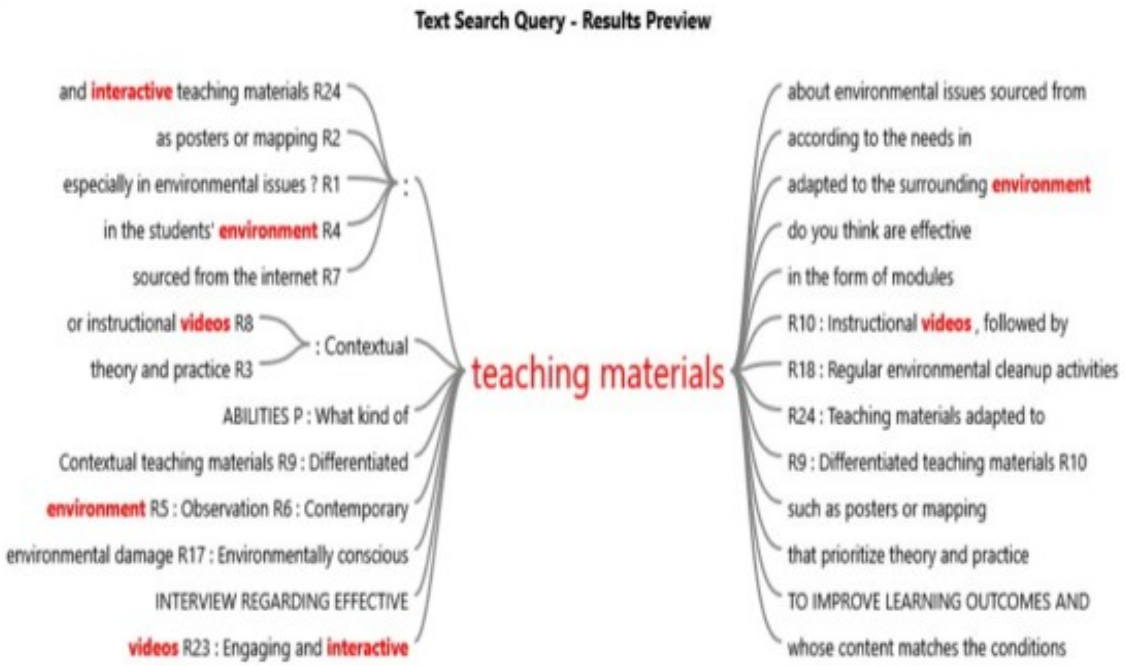


Figure 1. *Word Tree visualization* regarding the need for effective content in teaching materials

The existence of teaching materials in a school will optimize the quality of learning (Sulistyosari, n.d.). Based on Figure 1, the exploration of the word tree feature, information was obtained that effective teaching materials are teaching materials that discuss environmental issues. Apart from that, the most dominant forms of teaching materials chosen were learning videos, modules, posters/maps, and observations. The same result (Hanafi et al., 2021) is that teaching that raises environmental issues will be more effective if you use learning videos with interesting images. Then the teaching materials are adapted to the surrounding environment and are interesting and interactive so that they can build student motivation, and prioritize theory and practice. Therefore, researchers developed teaching materials in the form of a Social Sciences Companion Textbook with the title Sustainable Coastal and Marine Resources, which invites students to contextual learning, technology-based learning by containing learning videos with various pictures/photos that present problem content and solutions, as well as containing practice sheets / LKPD by the appropriate learning model, namely project-based learning. To help students understand the impact of activities on interactive multimedia environments in teaching materials. In addition, content that explores sustainably solving environmental problems (Ma'rufah, et al., 2021).

The book was written based on students' learning achievements, namely being able to understand and have awareness of their own existence and being able to interact with their immediate environment. He can analyze the relationship between regional geographic conditions and community characteristics and understand the potential of natural resources and their relationship to disaster mitigation. Based on these achievements, researchers formulated research objectives and learning models as shown in table 1 below:

Table 1. Learning Objectives and Learning Models

Learning objectives	1. Students are able to evaluate the potential of coastal and marine resources. 2. Students are able to design solutions to coastal and marine environmental problems.

	3. Students are able to provide arguments about coastal and marine environmental management based on observations of the surrounding environment. 4. Students are able to produce works about efforts to preserve the coastal and marine environment through posters.
Teaching materials approach	Ecopedagogics
Learning model	Project Based Learning (Project Based Learning)

The formulated learning objectives refer to high-level thinking skills in the creative realm and have gone through an expert validation process for teaching materials, as well as a learning model that uses *Project Based Learning.* The concept map of the teaching materials that the researcher formulated is in Figure 2 below:

Figure 2. Mind Maps in Teaching Materials

Based on Figure 2, the concepts in the social studies book being developed are mapped based on the content required by coastal junior high school students.Then, the trigger questions have been adjusted to the learning objectives, namely students are able to evaluate the potential of coastal and marine resources. Examples of trigger questions contained in teaching materials are as shown in Figure 3 below:

Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index
Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

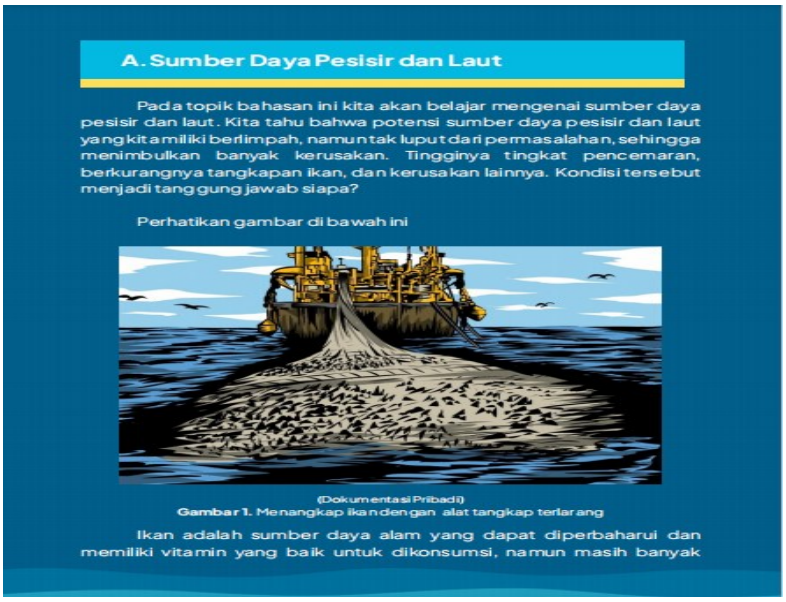


Figure 3. One of the trigger questions

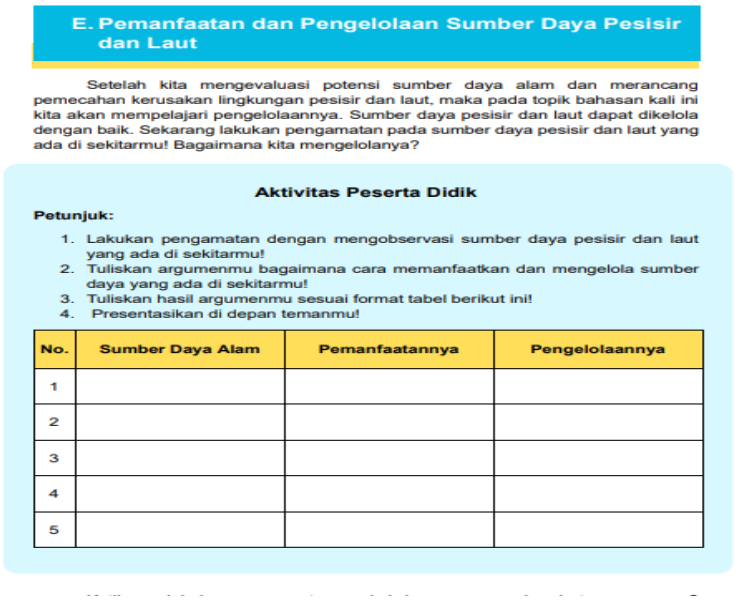
Based on Figure 3, this is the first stage in the project-based learning model presented in eco-pedagogical textbooks. Students are invited to think critically and creatively through guided discussions with pictures and trigger questions, namely "High levels of pollution, reduced fish catches and other damage. Whose responsibility is this condition?"

After conducting a discussion based on the trigger questions, students are then invited to watch the video that has been provided in the teaching materials, as the second stage in the syntax of the based learning project, namely organizing students to learn. After students observe the video display of the barcode provided in the book, students carry out activities by writing down the potential benefits of coastal and marine resources and how to resolve coastal and marine environmental damage. This activity is by the second learning objective, namely that students can design solutions to coastal and marine environmental problems. The documentation activity is in Figure 4 below:

Figure 4. Students' activities in writing solutions to coastal and marine environmental problems

Based on Figure 4, students are given the freedom to write down their thoughts on solving environmental problems which have been classified into several resource potentials, namely mangrove resource potential, seagrass beds, estuaries, coral reefs, fisheries resource potential, marine energy resource potential, and potential for marine tourism. The next stage is for students to carry out investigations individually. This stage is by the third learning objective, namely that students can provide arguments about environmental management based on

observations of the surrounding environment. These activities are contained in the textbook as shown in Figure 5 below:



E. Pemanfaatan dan Pengelolaan Sumber Daya Pesisir dan Laut

Setelah kita mengevaluasi potensi sumber daya alam dan merancang pemecahan kerusakan lingkungan pesisir dan laut, maka pada topik bahasan kali ini kita akan mempelajari pengelolaannya. Sumber daya pesisir dan laut dapat dikelola dengan baik. Sekarang lakukan pengamatan pada sumber daya pesisir dan laut yang ada di sekitarmu! Bagaimana kita mengelolanya?

Aktivitas Peserta Didik

Petunjuk:

1. Lakukan pengamatan dengan mengobservasi sumber daya pesisir dan laut yang ada di sekitarmu!
2. Tuliskan argumenmu bagaimana cara memanfaatkan dan mengelola sumber daya yang ada di sekitarmu!
3. Tuliskan hasil argumenmu sesuai format tabel berikut ini!
4. Presentasikan di depan temanmu!

No.	Sumber Daya Alam	Pemanfaatannya	Pengelolaannya
1			
2			
3			
4			
5			

Figure 5. Investigation activities through observations of the surrounding environment

Based on Figure 5, students make observations on the beach near the school. Through observations, students write down the potential resources of mangroves, coral reefs, sand, and others. Most of them don't know that mangroves, which have an economic function, can be used as food, namely as a mixture of cakes, dodol, and syrup. However, after students found out, they wrote more about economic benefits compared to biological and physical benefits. Then, after students have made observations they continue with presentations and joint discussions as a stage for developing and presenting the results of observations. The documentation for these learning activities is in Figure 6 below:

Figure 6. Presentation of Investigation Results through Observations of the Surrounding Environment

Based on Figure 6, students took turns conveying the results of their observations. The activity is part of the fourth step of the project learning model. After the discussion activity is complete, the teacher invites students to reflect on their learning based on the teaching materials that have been used. According to students, the accompanying textbook helps them to think more creatively in solving environmental problems because their eco-literacy increases. Apart from that, as island children who live on the coast every day, students need to preserve the potential of coastal and marine environmental resources. The final stage of

learning is for students to solve problems through projects, namely making posters. The posters they made contain informative concept reflections as a means of campaigning for the coastal and marine environment. Poster making is done in groups then each group provides feedback on the project they have created. One of the posters made by students is in Figure 7 as follows:

Figure 7. Student Poster Product

The activity of making posters is the final activity in social studies learning through the use of social studies textbooks as a development of ecopedagogical-based teaching materials. Next, student representatives were interviewed to obtain input information from the teaching materials.

Relevant Content in Ecopedagogic-based Teaching Materials

Ecopedagogic is an approach that if developed in learning content will include skills in analyzing environmental information, creativity in understanding the relationship of living things with the environment, and curiosity that has implications for environmental care and awareness (Pertama et al., 2019). The efforts to identify significant content in the development of eco pedagogy-based teaching materials in coastal schools, and survey findings indicate the need for emphasis on specific content. A total of 28 participants, all of whom were social studies teachers who taught in coastal schools, were interviewed in this research. Data from the interviews were recorded in transcript form and then analyzed using NVivo 12 software. One of the features used in NVivo 12 is the Word Frequency query, which is used to identify the words that appear most frequently in the text. Based on analysis using this feature, a group of words has been found that is the most dominant in the data, as shown in Figure 8 below.

Figure 8. Visualization of *Word Frequency Queries* related to Content Requirements in Ecopedagogic-based Teaching Materials

Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index
Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

Based on Figure 8, the word environment dominates participants' answers with a frequency of 4.98% of all data, followed by the words coast, protect, and sustainability. Next, the *Text Search Query* feature is applied to understand the meaning of the words in the word cloud. Meanwhile, *a project map* is created based on coding results themes that can be used to explore and present data relationships. The need for relevant content in ecopedagogic-based materials is shown in Figure 9 below:

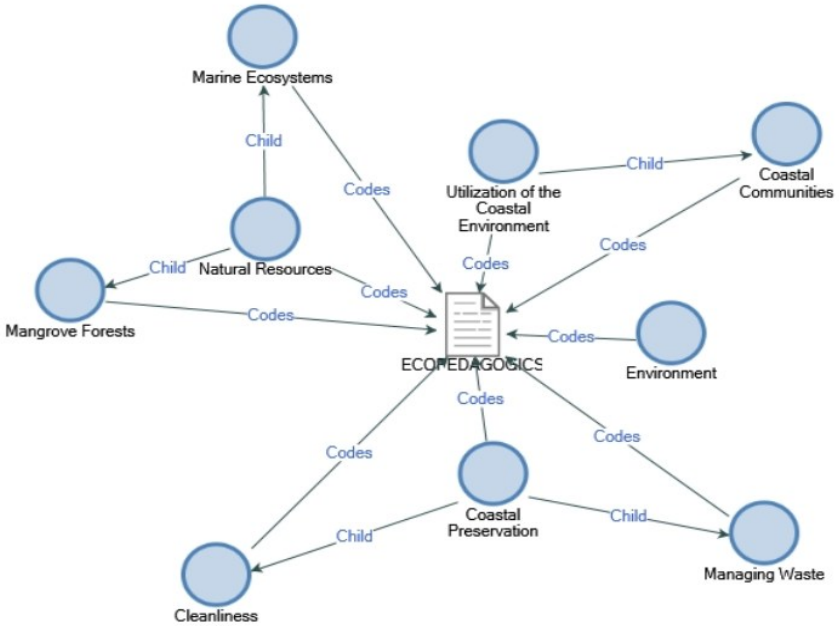


Figure 9. Map Project Visualization related to Content Needs in Ecopedagogic-based Teaching Materials

Based on Figure 9, the relevant content used in eco-pedagogical-based teaching materials is visualized based on the results of data processing through the map project feature of the NVivo 12 software, namely that four indicators are obtained covering coastal sustainability content including (1) Maintaining sustainability, (2) Sustaining life for coastal areas; (3) The environment is related to society which must look after each other; (4) Utilization of environmental functions related to sustainable environmental projects; and (5) Natural resources related to maintaining ecosystems and preserving mangroves.

Therefore, from the results of the research data, researchers developed teaching materials that raised the topic of Sustainable Coastal and Marine Resources. It includes analysis of the potential, utilization, and maintenance of natural resources, as a form of sustainable environmental conservation in both social, environmental, and economic aspects. Students gain learning through experience, making it more effective. Learning occurs more effectively when students are in direct contact with the object of study, which is often found in their surrounding environment (Masgumelar & Mustafa, 2021). Thus, education is seen as a process of continuously reconstructing experience. Everyday problems can be used contextually in this process. Coastal and marine areas play a crucial role in supporting the economy sustainably across various aspects. Therefore, students in coastal schools need to learn about environmental content. According to research by (Siahaan, Sianipar, Simamora, Sijabat, & Sinaga, 2021), interesting teaching materials can help students answer questions more easily and enhance their creative abilities in solving problems, particularly those related to coastal and marine environments. Ecopedagogy is not only an alternative global project that focuses on preserving nature (natural ecology) and the impact of society on the natural

Vol. 10, No. 2 : June 2024
E-ISSN: 2442-7667
pp. 541-552
Email: jklppm@undikma.ac.id

environment (social ecology) but also a new model for a sustainable civilization from an ecological perspective (integral ecology). This means making changes in economic, social, and cultural structures (Kahn, 2010).

Conclusion

The conclusions of this research are (1) The ecopedagogic approach has an urgency in developing social studies teaching materials, in this case social studies companion textbooks, because there are no books that specifically discuss coastal and marine environmental content in coastal schools in Jakarta. And so far, social studies teachers in coastal junior high schools tend to rely on government textbooks. The book developed uses a project-based learning model, so that at the end of the lesson students can campaign for the coastal and marine environment through the posters they create. In addition, the book being developed includes interactive videos as part of digitalization. (2) Relevant content can be used as a supplement to the social studies companion textbook as the development of ecopedagogical-based teaching materials, which obtained five indicators obtained covering coastal sustainability content including: (1) Maintaining sustainability, (2) Sustaining life in coastal areas; (3) The environment is related to society which has an obligation to look after each other; (4) Utilization of environmental functions related to sustainable environmental projects; and (5) Natural resources related to maintaining ecosystems and preserving mangroves. Therefore, the five indicators in the content serve as a guide in developing social studies teaching materials for Coastal Middle Schools in DKI Jakarta.

Recommendation

Based on the results of the study, several recommendations that can be proposed include: (1) Training and professional development are needed for teachers, especially in making teaching materials that are appropriate to the context of the coastal and marine environment, starting from lesson planning such as teaching modules to assessment. The findings show that most teachers in coastal areas have not maximized the potential of the environment as a learning resource. (2) The Ministry of Education needs to pay more attention to the content of the diversity of marine and coastal resources learning in the national curriculum because Indonesia is a maritime country. Therefore, social studies textbooks developed based on the eco-pedagogic approach need to be maximally utilized, so that students can think creatively in utilizing coastal and marine resources while being able to mitigate disasters as a preventive effort. By implementing these recommendations, it is expected that coastal junior high schools in Jakarta can create a learning environment that is more conducive to creative thinking, increase environmental awareness, and encourage sustainable practices among students. These efforts are also expected to contribute to the broader goal of building a generation of informed and empowered citizens, capable of addressing the complex environmental challenges faced by coastal communities.

Acknowledgments

The researcher would like to thank the Ministry of Education, Culture, Research and Technology for providing grant funds to support this research. The researcher would like to thank the Institute for Research and Community Service of Universitas Pendidikan Indonesia (LPPM UPI) for supporting this research. The researcher would also like to thank the DKI Jakarta MGMP IPS organizers and coastal schools in North Jakarta and the Thousand Islands for their permission and participation in this research activity.

References

Arifin, A., Awaluddin, M., & Amarrohman, F. J. (2020). Analisis Pengaruh Perubahan Garis Pantai Terhadap Batas Pengelolaan Wilayah Laut Daerah Provinsi DKI Jakarta. *Jurnal Geodesi Undip*, *9*(1), 156–165.

Berke, P., & Smith, G. (2009). Hazard mitigation, planning, and disaster resiliency: Challenges and strategic choices for the 21st century. *... , Spatial Planning and Responses to Natural ...*. https://books.google.com/books?hl=en&lr=&id=QbdOyRmUzwYC&oi=fnd&pg=PA1&dq=disaster+resilient&ots=sTxeseUWOz&sig=8b2bGTB-yFq2LaXTIJbW0_gzxGs

Fadjarajani, S., & As'ari, R. (2021). Ecopedagogy based learning as an effort to increase student ecoliteration and the development of environmental care characters. *IOP Conference Series: Earth and Environmental Science*, *683*(1). https://doi.org/10.1088/1755-1315/683/1/012046

Fauzi, A., Fitriasari, S., & Muthaqin, D. I. (2022). Development of Student Ecological Intelligence Through the Implementation of Ecopedagogy. *Annual Civic Education ...*. https://www.atlantis-press.com/proceedings/acec-21/125969021

Ferreira, J. C. (2021). Ocean literacy to promote sustainable development goals and agenda 2030 in coastal communities. *Education Sciences*, *11*(2), 1–21. https://doi.org/10.3390/educsci11020062

Gadotti, M. (2010). Reorienting Education Practices towards Sustainability. *Journal of Education for Sustainable Development*, *4*(2), 203–211. https://doi.org/10.1177/097340821000400207

Hajaroh, M., Andriani, R. L., & Saptono, P. B. (n.d.). Analisis Kebijakan Analisis Kebijakan Sekolah Ramah Anak Sekolah Ramah Anak Di Kawasan Pesisir Di Kawasan Pesisir Wisata Wisata Penerbit ANDI Yogyakarta.

Hanafi, Y., Ratna Ma'rifah, D., Abdillah Nurusman, A., & Alif Fahmi Rizki, G. (2021). Efektivitas Video Learning Materi Pencemaran Lingkungan Pada Mata Kuliah Ilmu Lingkungan Prodi Pendidikan Biologi FKIP UAD. *BIODIK*, *7*(4), 127–135. https://doi.org/10.22437/bio.v7i4.14186

Irianto, D. M., Herlambang, Y. T., & Yunansah, H. (2018). Multiliteration Model Based On Ecopedagogy Approach in Improving Ecological Intelligence and Developing Characters. In *ICEE 2018: International Conference on ...*.

Kahn, R. (2010). *Critical Pedagogy, Ecoliteracy & Planetary Crisis: The Ecopedagogy Movement*. Peter Lang.

Korsant, C. (2022). A Freirean ecopedagogy or an imposition of values? The pluriverse and the politics of environmental education. *Globalizations*. https://doi.org/10.1080/14747731.2022.2038830

Kostoulas-Makrakis, N. (2010). Developing and applying a critical and transformative model to address education for sustainable development in teacher education. *Journal of Teacher Education for Sustainability*, *12*(2), 17–26. https://doi.org/10.2478/v10099-009-0051-0

Kurniawan, T., & Maryani, E. (2015). Pengaruh Lingkungan Keluarga Dan Lingkungan Sekolah Terhadap Keterampilan Berpikir Tingkat Tinggi Peserta Didik Dalam Pembelajaran Ips. In *Jurnal Pendidikan Ilmu Sosial* (Vol. 24, Issue 2).

Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., Matnoor, M., & Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among

Secondary School Students in the 21st Century. *International Journal of Educational Methodology*, *8*(3), 585–593. https://doi.org/10.12973/ijem.8.3.585

Martin, B. (2016). Taking Responsibility into all Matter: Engaging Levinas for the climate of the 21st Century. *Educational Philosophy and Theory*, *48*(4), 418–435. https://doi.org/10.1080/00131857.2015.1044927

Ma'rufah ∗, D. M., Ngabekti, S., & Setiati, N. (n.d.). *Development of Socioscientific Issues-Based Teaching Materials to Improve Learning Outcomes and Students' Environment Awareness on The Environmental Changing Material*. http://journal.unnes.ac.id/sju/index.php/jise

Masgumelar, N. K., & Mustafa, P. S. (2021). Teori Belajar Konstruktivisme: Implementasi dan Implikasinya dalam Pendidikan dan Pembelajaran. *Ghaitsa: Islamic Education*, *2*(1), 49–57.

Misiaszek, G. W. (2020). Ecopedagogy: teaching critical literacies of 'development', 'sustainability', and 'sustainable development.' *Teaching in Higher Education*, *25*(5), 615–632. https://doi.org/10.1080/13562517.2019.1586668

Muhaimin M. (2014). *Pengembangan Model Problem Based Learning Dalam Ecopedagogy Untuk Peningkatan Kompetensi Ekologis Mata Pelajaran IPS* [Doctoral dissertation]. Universitas Pendidikan Indonesia.

Pertama, P., Kedua, P., & Ketiga, P. (2019). Klik di sini untuk menulis judul anda. In *Prosiding Seminar Nasional Pascasarjana UNNES*.

Prasetyo, I. (n.d.). Teknik Analisis Data Dalam Research And Development.

Putri, S. S., Japar, M., & Bagaskorowati, R. (2019). Increasing ecoliteracy and student creativity in waste utilization. *International Journal of Evaluation and Research in Education*, *8*(2), 255–264. https://doi.org/10.11591/ijere.v8i2.18901

Siahaan, T. M., Sianipar, H. F., Simamora, R., Sijabat, A., & Sinaga, C. V. R. (2021a). 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

Siahaan, T. M., Sianipar, H. F., Simamora, R., Sijabat, A., & Sinaga, C. V. R. (2021b). Pengembangan Buku Ajar Berbasis Kooperatif Tipe Jigsaw untuk Meningkatkan Kemampuan Berpikir Kreatif Mahasiswa. *Jurnal Basicedu*, *5*(4), 2496–2503.

Simbolon, A. R. (2016). Status Pencemaran di Perairan Cilincing, Pesisir DKI Jakarta. *Proceeding Biology Education Conference*, *13*(1), 677–682.

Suciati, Vincentrisia, A., & Ismiyatin. (2015). Application of learning cycle model (5E) learning with chart variation towardstudents' creativity. *Jurnal Pendidikan IPA Indonesia*, *4*(1), 56–66. https://doi.org/10.15294/jpii.v4i1.3502

Sulistyosari, Y. (n.d.). *Kreativitas Guru Dalam Mengembangkan Bahan Ajar Ips Pada Smp/Mts Se-Kecamatan Ngadirejo Kabupaten Temanggung* (Vol. 3, Issue 2).

Supriatna, A. (2016). Ecopedagogy Building Ecological Intelligence in Social Studies Learning. In *Bandung: PT Pemuda Rosdakarya*.

Supriatna, N. (2017). *Membangun Kecerdasan Ekologis dalam Pembelajaran IPS* (Nita (penyunting), Ed.; 2nd ed.). Bandung : PT Remaja Rosdakarya, 2017.