

**PENGEMBANGAN FRAMEWORK OCEAN LITERACY BERBASIS
BLUE CURRICULUM DI PENDIDIKAN VOKASIONAL DALAM
MEMFASILITASI OCEAN LITERACY SISWA SMK**

TESIS

*Diajukan untuk memenuhi syarat memperoleh gelar Magister Pendidikan (M.Pd.)
pada program studi Pendidikan Teknologi dan Kejuruan*



Oleh:
Mutia Hardika
2208430

**PROGRAM STUDI PENDIDIKAN TEKNOLOGI DAN KEJURUAN
SEKOLAH PASCASARJANA
UNIVERSITAS PENDIDIKAN INDONESIA**

**PENGEMBANGAN *FRAMEWORK OCEAN LITERACY* BERBASIS
BLUE CURRICULUM DI PENDIDIKAN VOKASIONAL DALAM
MEMFASILITASI *OCEAN LITERACY* SISWA SMK**

Oleh
Mutia Hardika

S.Pd Universitas Negeri Padang, 2021

Sebuah Tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Magister Pendidikan (M.Pd.) pada Fakultas Pendidikan Teknologi dan Kejuruan

© Mutia Hardika 2024
Universitas Pendidikan Indonesia
Agustus 2024

Hak Cipta dilindungi undang-undang.
Tesis ini tidak boleh diperbanyak seluruhnya atau sebagian,
dengan dicetak ulang, difoto kopi, atau cara lainnya tanpa ijin dari penulis.

HALAMAN PENGESAHAN

**Mutia Hardika
2208430**

PENGEMBANGAN FRAMEWORK OCEAN LITERACY BERBASIS BLUE CURRICULUM DI PENDIDIKAN VOKASIONAL DALAM MEMFASILITASI OCEAN LITERACY SISWA SMK

Disetujui dan disahkan oleh :

Dosen Pengaji I



Prof. Dr. Isma Widiaty, M.Pd
NIP. 19710607 200112 2 001

Dosen Pengaji II



Prof. Dr. Yoyoh Jubaedah, M.Pd
NIP. 19650708 199103 2 001

Mengetahui,

Ketua Program Studi Pendidikan Teknologi dan Kejuruan



Prof. Dr. Ade Gafar Abdullah, S.Pd., M.Si
NIP. 19721113 199903 1 001

Pengembangan *Framework Ocean Literacy* di Pendidikan Vokasional Berbasis *Blue Curriculum* dalam Memfasilitasi *Ocean Literacy* Siswa SMK

Mutia Hardika (2208263)

ABSTRAK

Perlindungan terhadap lautan telah menjadi agenda lingkungan dunia yang mendesak karena laut memainkan peran vital dalam kehidupan manusia, namun literatur yang ada mencatat kurangnya pengembangan kurikulum berbasis laut (*blue curriculum*) dalam sistem pendidikan formal. Oleh karena itu, penelitian ini bertujuan untuk menghasilkan indikator variabel *ocean literacy* dalam konteks *blue curriculum* di pendidikan vokasional dan mengembangkan *framework ocean literacy* berbasis *blue curriculum* di pendidikan vokasional. Penelitian ini diharapkan dan dapat menjadi kontribusi penting terhadap upaya global membentuk perilaku yang bertanggung jawab terkait aktivitas laut dan dapat memberikan panduan yang dibutuhkan bagi pengembangan pendidikan berkelanjutan yang lebih baik, sesuai dengan tujuan pendidikan vokasional pada masa mendatang. Metode penelitian yang digunakan adalah pendekatan kualitatif melalui *study literatur review* yang dipadukan dengan *content analysis*, serta *focus group discussion* (FGD). Hasil penelitian menghasilkan enam indikator variabel *ocean literacy*, yaitu potensi laut, strategi dan pengelolaan laut, berbagai aktivitas kelautan beserta dampaknya terhadap ekosistem laut, pariwisata dan budaya terkait laut, pembangunan berkelanjutan dalam bidang kelautan, serta kebijakan-kebijakan yang terkait dengan kelautan. Ditemukan juga bahwa pemanfaatan potensi laut dalam pendidikan vokasional tidak hanya bersinggungan dengan penyediaan sumber makanan *seafood* saja, namun juga berkaitan erat dengan layanan pariwisata dan layanan perhotelan, serta bersinggungan juga dengan bidang keahlian pendidikan vokasional yang lain seperti dalam bidang kemaritiman. Pengembangan *blue curriculum* di pendidikan vokasional pun memiliki andil yang sangat besar sebagai salah satu strategi dalam pengelolaan laut. Adapun *framework ocean literacy* yang dikembangkan terdiri dari variabel-variabel *ocean literacy* yang diintegrasikan pada komponen-komponen kurikulum yang telah ditetapkan.

Kata kunci: *Ocean literacy*, *blue curriculum*, pendidikan vokasional.

***Development of Ocean Literacy Framework Based on Blue Curriculum
in Vocational Education in Facilitating Ocean Literacy of Voctional School
Students***

Mutia Hardika
2208263

Abstract

The protection of the oceans has become an urgent global environmental agenda as the ocean plays a vital role in human life, yet the existing literature notes the lack of ocean-based curriculum development (blue curriculum) in the formal education system. Therefore, this research aims to generate indicators of ocean literacy variables in the context of blue curriculum in vocational education and develop a framework for ocean literacy based on blue curriculum in vocational education. This research is expected and can be an important contribution to global efforts to shape responsible behaviour related to ocean activities and can provide the necessary guidance for the development of better sustainable education, in accordance with the objectives of vocational education in the future. The research method used was a qualitative approach through a literature review study combined with content analysis, and focus group discussion (FGD). The results of the study produced six indicators of ocean literacy variables, namely the potential of the ocean, ocean strategy and management, various marine activities and their impacts on marine ecosystems, ocean-related tourism and culture, sustainable development in the marine sector, and policies related to the ocean. It was also found that the utilisation of the ocean's potential in vocational education does not only intersect with the provision of seafood food sources, but is also closely related to tourism and hospitality services, and also intersects with other vocational education areas of expertise such as in maritime affairs. The development of a blue curriculum in vocational education also has a very large share as one of the strategies in ocean management. The ocean literacy framework developed consists of ocean literacy variables that are integrated into the established curriculum components.

Keyword: Ocean literacy, blue curriculum, vocational education.

DAFTAR ISI

HALAMAN PENGESAHAN.....	i
HALAMAN PERNYATAAN	Error! Bookmark not defined.
UCAPAN TERIMA KASIH.....	Error! Bookmark not defined.
ABSTRAK	v
ABSTRACT	vi
DAFTAR ISI.....	vii
DAFTAR TABEL.....	ix
DAFTAR GAMBAR	x
DAFTAR LAMPIRAN.....	xi
BAB I PENDAHULUAN	Error! Bookmark not defined.
1.1 Latar Belakang Penelitian	Error! Bookmark not defined.
1.2 Rumusan Masalah Penelitian	Error! Bookmark not defined.
1.3 Tujuan Penelitian.....	Error! Bookmark not defined.
1.4 Manfaat Penelitian.....	Error! Bookmark not defined.
1.5 Struktur Organisasi Tesis	Error! Bookmark not defined.
BAB II KAJIAN PUSTAKA	Error! Bookmark not defined.
2.1 <i>Ocean Literacy</i>	Error! Bookmark not defined.
2.2 <i>Blue Curriculum</i> di Pendidikan Vokasional.....	Error! Bookmark not defined.
2.3 Sustainable Development Goals (SDGs)	Error! Bookmark not defined.
2.4 Kurikulum Pendidikan Vokasional Berbasis KKNI.....	Error! Bookmark not defined.
BAB III METODE PENELITIAN.....	Error! Bookmark not defined.
3.1 Desain Penelitian.....	Error! Bookmark not defined.
3.2 Partisipan dan Tempat Penelitian	Error! Bookmark not defined.
3.3 Teknik Pengumpulan Data	Error! Bookmark not defined.
3.4 Analisis Data	Error! Bookmark not defined.
BAB IV TEMUAN DAN PEMBAHASAN	Error! Bookmark not defined.

4.1	Indikator Variabel <i>Ocean Literacy</i> di Pendidikan Vokasional	Error!
	Bookmark not defined.	
4.2	Pengembangan <i>Framework Ocean Literacy</i>	Error! Bookmark not defined.
BAB V KESIMPULAN, IMPLIKASI DAN REKOMENDASI Error! Bookmark not defined.		
5.1	Simpulan.....	Error! Bookmark not defined.
5.2	Implikasi	Error! Bookmark not defined.
5.3	Rekomendasi.....	Error! Bookmark not defined.
DAFTAR PUSTAKA		53

DAFTAR TABEL

Tabel 2.1 Bidang Keahlian di Pendidikan Vokasional	8
Tabel 3.1 Peserta <i>Focus Group Discussion</i>	18
Tabel 3.2 Kriteria Enklusi-Eksklusi.....	21
Tabel 4.1. Hasil <i>Content Analysis</i>	25
Tabel 4.2. Hasil Pengkodean FGD.....	29
Tabel 4.3. Perbedaan analisis konten <i>Ocean Literacy</i> dan analisis konten <i>Ocean Literacy</i> di Pendidikan Vokasional	41

DAFTAR GAMBAR

Gambar 2.1 <i>Ocean Literacy Timeline</i>	6
Gambar 2.2 Tujuan inti SDGs.....	10
Gambar 2.3 Jenjang Kualifikasi pada KKNI	16
Gambar 3.1 Diagram Alur PRISMA.....	22
Gambar 3.2 Tampilan Awal NVivo.....	23
Gambar 3.3 Hasil Transkrip FGD	23
Gambar 3.4 Proses Analisis Data dengan NVivo	24
Gambar 4.1 Proses <i>Coding</i> pada NVivo	28
Gambar 4.2 <i>Hierarchy Chart</i> pada NVivo.....	28
Gambar 4.3 <i>Word Cloud</i> pada NVivo.....	29
Gambar 4.4. Analisis Potensi Kelautan di Pendidikan Vokasional	30
Gambar 4.5. Analisis Strategi dan Pengelolaan Kelautan di Pendidikan Vokasional	31
Gambar 4.6. Analisis Kebijakan Terkait Kelautan di Pendidikan Vokasional	36
Gambar 4.7. Analisis Ekosistem dan Aktivitas Kelautan di Pendidikan Vokasional	37
Gambar 4.8. Analisis Pariwisata dan Budaya di Pendidikan Vokasional.....	39
Gambar 4.9. Analisis Pembangunan Berkelanjutan di Pendidikan Vokasional ...	40
Gambar 4.10. <i>Framework Ocean Literacy</i> di Pendidikan Vokasional	44
Gambar 4.11. Struktur Kurikulum	48

DAFTAR LAMPIRAN

Lampiran 1. Salinan Surat Keputusan Menteri.....	62
Lampiran 2. Judul Artikel Terpilih	71
Lampiran 3. Hasil Temuan Konten <i>Ocean Literacy</i>	73
Lampiran 4. Hasil <i>Focus Discussion Group</i> (FGD)	80
Lampiran 5. Surat Undangan Pelaksanaan <i>Focus Group Discussion</i> (FGD)	97
Lampiran 6. Dokumentasi Pelaksanaan <i>Focus Group Discussion</i> (FGD)	98
Lampiran 7. Jenis Destinasi Wisata Akhir Tahun Paling Disukai RI.....	99

DAFTAR PUSTAKA

- Aboulail, FS. & Tajuddin, AJA. 2021. Ocean Literacy of Primary Student of International Schools in Riyadh, Saudi Arabia. *Journal of Nusntara Studies*, 6(2), pp. 402-423.
- Arief, N.N., et al. 2022. Pharma 4.0: Analysis on Core Competence and Digital Levelling Implementation in Pharmaceutical Industry in Indonesia *Heliyon*, 8(8).
- Ashley, M., et al. 2019. A change of mind: applying social and behavioral research methods to the assessment of the effectiveness of ocean literacy initiatives. *Front. Mar. Sci.* 6, 288.
- Auld, GW., et al. 2007. Development of a Decision Tree to Determine Appropriateness of NVivo in Analyzing Qualitative Data Sets, *Journal of Nutrition Education and Behavior*, 39(1), pp. 37-47.
- Bennett, N.J., et al. 2017. Conservation social science: understanding and integrating human dimensions to improve conservation. *Biol. Conserv.* 205, 93–108.
- Bettencourt, S., et al. 2023. Marine litter education: From awareness to action. *Marine Pollution Bulletin*, 192, 114963
- Britton, E., et al. 2021. Accelerating sustainable ocean policy: The dynamics of multiple stakeholder priorities and actions for oceans and human health. *Marine Policy*, 124, 104333
- Celine, J. et al. 2023. two way process – Social capacity as a driver and outcome of equitable marine spatial planning. *Marine Policy* 149, 105507
- Chen, C. 2015. Regulation and Management of Marine Liter. In: Bergmann,M., Gutow, L., Klages, M., (Eds.), *Marine Anthropogenic Litter*. Springer, pp. 395-428.
- Cheng, J., Zhang, X. & Gao Q. 2023. Analysis of the spatio-temporal changes and driving factors of the marine economic–ecological–social coupling coordination: A case study of 11 coastal regions in China. *Indicators Ecological*, 153, 110392.
- Curtin, R. & Prellezo, R. 2010. Understanding Marine Ecosystem Based Management: A Literature Review. *Mar. Pol.* 34, 821-830.

Databoks. 2022. Pantai dan Laut, Destinasi Wisata Akhir Tahun Paling Disukai Masyarakat Indonesia. <https://databoks.katadata.co.id/datapublish/2022/12/26/pantai-dan-laut-destinasi-wisata-akhir-tahun-paling-disukai-masyarakat-indonesia>

Depdiknas. 2003. *Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. Republik Indonesia, Jakarta.

Dupond, S. & Fauville, G. 2017. Ocean Literacy as a Key Toward Sustainable Development and Ocean Governance in: *Handbook on the economics and Management of Sustainable Oceans*. Edward Elgar Publisher & UNEP. UK, Cheltenham.

Education Brief. 2019. *Key Considerations on Technical and Vocational Education and Training*(TVET). UNHCR.

Fabrizi, E., et al. 2020. Modelling Macroalgal Forest Distribution at Mediterranean Scale: Present Status, Drivers of Changes and Insights for Conversation and Management. *Front. Marine Sci*, 7(20).

Fauville, G., et al. 2019. Development of the international Ocean Literacy survey: measuring knowledge across the world. *Environ. Educ. Res.* 25, 238–263.

Finke, G., et al. 2020. Namibia's way to Marine Spatial Planning – Using existing practices or instigating its own approach?. *Marine Policy*, 121, 104107

Food and Agriculture Organization of the United Nations. Sustainable Development Goals: 17 Goals to Transform Our World. <https://fao.org>.

Francolini, E.M., et al. 2023. STidakeholder perspectives on socio-economic challenges and recommendations for better management of the Aliwal Shoal Marine Protected Area in South Africa. *Marine Policy*, 148, 105470.

Frisch,L.C., et al. 2015. Gauging perceptions of ocean acidification in Alaska. *Marine Policy*, 53, pp.101-110

F. Cava, et al. 2015. Science content and standards of Ocean Literacy: A Report on Ocean Literacy.

Gutierrez, D., et al. 2023. A proposal for engagement in MPAs in areas beyond national jurisdiction: The case of Macaronesia. *Science of the total environment*, 854, 158711

Hallaj, Z., et al. 2022. Tourism Development During the Pandemic of Coronavirus (COVID-19): Evidence from Iran. *Front. Public Health*, 10, 881381.

Halpern, B.S., et al. 2015. Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nat. Commun.* 6, 7615–7617. <https://doi.org/10.1038/ncomms8615>.

Halpern, B.S., et al. 2019. Recent pace of change in human impact on the world's ocean. *Sci. Rep.* 9, 11609–11618. <https://doi.org/10.1038/s41598-019-47201-9>.

Hartlay, B., et al. 2018. Turning the Tide on Trash: Empowering European Educators and School Students to Tackle Marine Litter. *Mar. Policy*, 96, 227–234.

Hynes, S., et al. 2024. Alternative Approaches to Measuring the Value of Tourism in Marine and Coastal Areas in Ocean Economy Accounting. *Marine Policy* 168 (106299).

IOC-UNESCO. 2022. A New Blue Curriculum – *A toolkit for policy-makers*, Paris (IOC Manuals and Guides, 90)

IPCC, in: V. Masson-Delmotte, P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, et al. (Eds.), Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2021. Eds, <https://www.ipcc.ch/report/ar6/wg1/>

Jefferson, R., McKinley, E., Capstick, S., Fletcher, S., Griffin, H., and Milanese, M. 2015. Understanding audiences: making public perceptions research matter to marine conservation. *Ocean & Coastal Management* 115, 61–70.

Jouffray, J., et al. 2020. The Blue Acceleration: The Trajectory of Human Expansion into The Ocean. *One Earth* 2, 43–45.

Kemendikbud. 2022. *Buku Saku Penyusunan Perangkat Ajar*. Jakarta: Pusat Penelitian Kebijakan Pendidikan dan Kebudayaan.

Kemendikbud. 2022. *Panduan Pengembangan Kurikulum Operasional di Satuan Pendidikan*. Jakarta: Pusat Penelitian Kebijakan Pendidikan dan Kebudayaan.

Kemendikbud. 2017. *Pengelolaan Pendidikan Kejuruan: Pengembangan Sekolah Menengah Kejuruan (SMK) 4 Tahun*. Jakarta: Pusat Penelitian Kebijakan Pendidikan dan Kebudayaan.

Kemendikbud. 2024. Salinan Keputusan Kabadan Standar, Kurikulum, dan Asesmen Pendidikan Kemendikbudristek.

Kemnaker. 2018. Tentang KKNI-Sejarah KKNI. *Skkni.kemnaker.go.id*

Kenny, I., et al. 2023. Aligning social and ecological goals for successful marine restoration. *Biological Conversation*, 288, 110357

Kripendorff, K. 1989. Content Analysis. *Depermental Papers (Annenberg School for Communication)*, 403-417.

Leslie, H.M. & McLeod, K.L. 2007. Confronting the Challenges of Implementing Marine Ecosystem -Based Management. *Front. Ecol. Environt* 5, 540-548.

Long, RD. et al. 2015. Key Principles of Marine Ecosystem- Based Management. *Mar. Pol* 57, 53-60.

Mahadeo S. 2022. Marine spatial planning in the Eastern Caribbean: Trends and progress. *Marine Policy*, 145, 105277

Markos, A., Boubonari, T., Mogias, A., Kevrekidis, T., 2017. Measuring ocean literacy in pre-service teachers: psychometric properties of the Greek version of the Survey of Ocean Literacy and Experience (SOLE). *Environ. Educ. Res.* 23, 231–251.

Mashlahah, A.Y. 2018. Penerapan Kurikulum Mengacu KKNI dan Implikasinya terhadap Kualitas Pendidikan di PTKIN. *Jurnal Penelitian Pendidikan Islam*, 13(1), pp. 227-248.

McKinley, E. et al. 2020. Marine social sciences: Looking towards a sustainable future. *Environmental Science and Policy*, 108, pp. 85-92

McKinley, E., et al. 2022. Development and Expansion in the Marine Social Siccences: Insight from the Global Community, *iScience* 25, 104735

Michalowska, M. 2020. Artists in the face of threats of climate change. *Oceanologia*, 62, pp. 565-575

Mikkelsen, N., et al. 2023. Multiple sTidakeholders' perspectives of marine social ecological systems, a case study on the Barents Sea. *Ocean and Coastal Management*, 242, 106724.

Millenium Ecosystem Assessment. 2005. Ecosystems and uman Well-being: Synthesis. Island Press, Washington DC.

Moleong, L.J. (2017). *Metode Penelitian Kualitatif*. Bandung: PT. Remaja Rosdakarya.

Nash, K.,L., ,et al. 2017. Planetary boundaries for a blue planet. *Nat. Ecol. Evol.* 1, 1625-1634.

Nash, K.,L., et al. 2020. To achieve a sustainable blue future, progress assessments must include interdependencies between the sustainable development goals. *One Earth* 2, 161–173.

Natali, P. & Thompson, B.S. 2023. Saving two fish with one wreck: Maximizing synergies in marine biodiversity conversation and underwater cultural heritage protection. *Marine Policy*, 152, 105613

Negin, HF. & Bijani, M. 2020. A Gap analysis Between Current and Desired Situation of Economic Factors Affecting Human Resources Development I n Iran. *Geo Journal*, 85(4), pp.1175-1190.

New York State Departmen of Environmental Conservation. 2017. *New York Ocean Action Plan 2017-2027*.

NGYouthSDGs. 2021. Playbook Nigeria Youth SDGs Network: The SDGS Playbook. www.nigerianyouthsdgs.org.

Nystrom, M., et al. 2019. Anatomy and Resilience of The Global Prediction Ecosystem. *Nature* 575, 98-108.

Ocean Literacy Network. 2013. Ocean literacy: Ocean Literacy: the Essential Principles and Fundamental Concepts of Ocean Sciences for Learners of All Ages Version 2. National Oceanic and Atmospheric Administration, Washington DC

OECD. 2018. *The Future of Education and Skills Education 2030*.

Omstedt, A. 2023. How to develop an understanding of the marginal sea system by connecting natural and human sciences. *Earth System Changes in Marginal Seas/Oceanologia*, 65, pp. 20-29

Ornstein,et al. 1988. *Curriculum, Foundations, Principles and Isues*. Needham Heights: Allyn & Bacon.

O'Boyle, R & Jamieson, G. 2006. Observations on the Implementation of Ecosystem-Based Management: Experiences on Canada's East and West Coasts. *Fish. Res.* 79, 1-12.

Pace, L.A., et al. 2023. Exploring future research and innovation directions for sustainable blue economy, *Marine Policy*, 148,105433

Pascual, U., et al. 2017. Valuing Nature's Contributions to People: The IPBES Approach. *Curr. Opin. Environ. Sustain.* 26-27, 7-16.

Pazoto, C.E., Silva, E.P. & Duarte, M. R. 2022. Ocean literacy in Brazilian school curricula: An opportunity to improve coastal management and address coastal risks?. *Ocean and Coastal Management*, 219, 106047.

PBES, in: E.S. Brondizio, J. Settele, S. Díaz, H.T. Ngo (Eds.), Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES secretariat, Bonn, Germany, 2019, p. 1148, <https://doi.org/10.5281/zenodo.3831673>

Petronzi, R., Petronzi, D., 2020. The online and campus (OaC) model as a sustainable blended approach to teaching and learning in higher education: a response to COVID-19. *J. Pedagog. Res.* 4 (4), 498–507.

Portner HO., et al. 2017. IPCC Special Report on the Ocean and Cryosphere in a Changing Climate. *IPCC, Summary for Policymakers*.

Purcell, et al. 2019. Universities as the engine of transformational sustainability toward delivering the sustainable development goals "Living labs" for sustainability. *Int. J. Sustain. High Educ.*, 20 (8), pp. 1343-1357, 10.1108/ijsh-02-2019-0103.

Purnomo, S., et al. 2020. Pendidikan jarak Jauh (PJJ) Berbasis *E-Learning* Edmodo Mahasiswa Pendidikan Vokasional Teknik Mesin. *Jurnal Taman Vokasi*.

Qu, Y., et al. 2023. Dissecting Ocean-Friendly Behavioral Intention Among College Students: Incorporating Ocean Literacy And Diversified Incentive Mechanism With The Theory Of Planned Behavior, *Ocean And Coastal Management*

Researchers. *Estuarine, Coastal And Shelf Science*, 218, Pp. 173-178Cretella, A., Scherer, C. & Holm, P. 2023. Tasting the ocean: How to increase ocean literacy using seafood heritage with a visceral approach. *Marine Policy*, 149, 105476.

Rustandi, J. & Abdurrahman. 2022. Contents of the Institutional Perspective Curriculum. *Foromosa Journal of Science Technology*, 7(1), 905-920.

Schuckmann, K.V., et al. 2020. Ocean science, data, and services for the UN 200 sustainable development goals. *Marine Policy*, 121, 104154

Setiawan, D. 2016. *Seminar Nasional Pendidikan Ilmu-Ilmu Sosial Membentuk Karakter Bangsa dalam Rangka Daya saing Global*. Makasar: UNM.

Setiawan, N. & Sofyan, H. 2022. Implementasi Kurikulum Merdeka di SMK Pusat Keunggulan. *Jurnal Taman Vokasi*, 10 (1), 31-37.

Shen, M., wt al. 2019. The Social Costs of Marine Litter Along the East China Sea: Evidence from Ten Coastal Scenic Spots of Zhejiang Province, China, *Sustainability*, 11(6).

Steel, B.S., et al. 2005. Public ocean literacy in the United States. *Ocean Coast Manag*. 48, 97–114. Stoll-Kleemann, S., 2019. Feasible options for behavior change toward.

Stofen-O'Brien, A., et al. 2022. Parachute science through a regional lens: Marine litter research in the Caribbean Small Island Developing States and the challenge of extra-regional research. *Marine Pollution Bulletin*, 174, 113291

Sukiman. 2015. *Pengembangan Kurikulum di Perguruan Tinggi*. Bandung: Remaja Rosdakarya.

giyono. 2015. *Metode Penelitian Kombinasi* (Mixed Methods). Bandung: Alfabeta.

Susilana, Rudi. Komponen-Komponen Kurikulum. Jurusan Kurikulum dan Teknologi Pendidikan, FIP-UPI.

S. Costa & R. Caldeira. 2018. Bibliometric nalysis of Ocean Literacy: An Underraten Term in the Scientific Literature, *Mar. Policy* 87, 149-157.

Tallis, H., et al. 2010. The Many Faces of Ecosystem-Based Management: Making the Procces Work Today in Real Places. *Mar.Pol* 34, 340-348.

Tsai, L.T., et al. 2023. Ocean literacy among Taiwanese and Japanese high school students. *Marine Policy*, 150, 105555

UNESCO, 2020. Ocean Literracy Draft Strategic Plan — Ocean Literacy for the UN Decade of Ocean Science for Sustainable Development.

United Nations World Tourism Organiations. 2017. *UNWTO: Definition of Sustainable Development of Tourism.*

United Nations Inter-Agency Task Team on Science, Technology and Innovation for the SDGs and European Commission, Joint Research Centre, Guidebook for the Preparation of Science, Technology and Innovation (STI) for SDGs Roadmaps, EUR 30606 EN, Publications Office of the European Union, uxembourg, 2021, ISBN 978-92-76-30613-9, doi:10.2760/724479, JRC124108.

Valizadeh, N., et al. 2021. Development of a Scale to Remove Farmers' Sustainability Barriers to Meteorological Information in Iran. *Sustainability*, 13(22), 12617.

Watts, N., et al. 2019. The 2019 Report of the Health of the Child Born Today is Not Defined by a Changing Climate. *Lancet* 394 (10211), 1836-1878.

WEF, The Global Risks Report 2022, World Economic Forum, 2022. www.wef. ch/risks22.

Willis, C., et al. 2018. Artioli, Harmful Algal Blooms: The Impacts on Cultural Ecosystem services and uman Wll-being in a Case Study Setting. *Mar. Policy*, 97, 232-238.

Zhao, S. & Cheah, K.S.L. 2023. The challenges of Malaysian private universities in reaching sustainable education toward responsible consumption. *Cleaner and Resposible Consumption*,10, 100130, ISSN 2666-7843, <https://doi.org/10.1016/j.clrc.2023.100130>

Zimmerhacketl,J.S., et al. 2023. A framework for the integrated assessment of social and economic values associated with man-made marine structures. *Marine Policy*, 152, 105612.