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BLUE QUESTIONNAIRE: PROPOSAL FOR AN EVALUATION INSTRUMENT ABOUT OCEAN LITERACY

Questionário azul: proposta de um instrumento avaliativo sobre alfabetização oceânica

Laís Denis Rocha[1], Paula Thaise Bermudez dos Reis Lauria[2]

[1]Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil.
E-mail: laisdenisufrj@gmail.com
[2]Programa de Pós-graduação em Meio Ambiente, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brasil. E-mail: paulatbdr@hotmail.com

ABSTRACT

We are living in the Ocean Decade, which covers the period from 2021 to 2030, a moment marked by a global movement for research and actions in favor of ocean conservation. Aiming to contribute to the promotion of oceanic culture through oceanic literacy, this research was developed, which aims to present the concepts of oceanic culture, oceanic literacy and their connections with environmental education. Through classroom observation during the mandatory curricular internship, a lack of oceanic knowledge on the part of students in the second segment of Elementary School was noticed, which raised a question: how much marine knowledge do these students have? Therefore, a questionnaire is proposed as an instrument for evaluating oceanic knowledge to diagnose prior knowledge on the topic, aiming to develop educational activities consistent with the reality and demands of the target audience. The questionnaire was prepared through the experience of the curricular internship, based on the principles of oceanic culture, with open and closed questions, and adapted for classes in the second segment of primary and secondary education. After the pilot questionnaire application stage, it was possible to observe that the students were interested in marine themes and demonstrated enthusiasm when talking about the topic.

Keywords: Oceanic culture. Ocean literacy. Assessment instrument. Environmental education

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RESUMO

Vivemos a Década do Oceano, que compreende o período de 2021 a 2030, um momento marcado por um movimento global para pesquisas e ações em prol da conservação do oceano. Visando contribuir para a promoção da cultura oceânica através da alfabetização oceânica, desenvolve-se esta pesquisa, que visa apresentar os conceitos de cultura oceânica, alfabetização oceânica e suas conexões com a educação ambiental. Através da observação em sala de aula durante o estágio curricular obrigatório, foi notado um déficit de conhecimentos oceânicos por parte dos alunos do segundo segmento do Ensino Fundamental, o que gerou uma dúvida: o quanto de conhecimentos marinhos esses alunos possuem? Por isso, é proposto um questionário como instrumento avaliativo a respeito de conhecimentos oceânicos para diagnóstico de conhecimentos prévios acerca da temática, visando elaborar atividades educativas condizentes com a realidade e demandas do público-alvo. O questionário foi elaborado através da vivência do estágio curricular, baseado nos princípios da cultura oceânica, com perguntas abertas e fechadas e adaptado para as turmas do segundo segmento do ensino fundamental e ensino médio. Após a etapa da aplicação do questionário piloto, foi possível observar que os alunos se interessam por temas marinhos e demonstram empolgação ao falar sobre o tema.

Palavras-chave: *Cultura oceânica. Alfabetização oceânica. Instrumento de avaliação. Educação ambiental.*

INTRODUCTION

Our planet, when viewed from space, is divided into water and land. There are no divisions between the Pacific and Atlantic Oceans, for example. The water masses present in each part of the globe interact with one another, exchanging water vapor, nutrients, and organisms (UNESCO, 2020). However, the imaginary lines that delimit these oceans on our maps are precisely that—imaginary lines. Thus, a single ocean spans the entire globe, making it habitable. This single ocean surrounds all continents and directly influences the planet's temperature as well as its climate. It hosts the greatest biodiversity on Earth, yet less than 50% of its species have been described (Landim, 2018). This singular ocean intrinsically connects humans in their existence.

Given the ocean's importance to the planet, in 2017 the United Nations General Assembly established the Decade of Ocean Science for Sustainable Development, a movement that began in 2021 and will continue until 2030, also known as the "Ocean Decade." In this context, 193 countries participated in this assembly with the aim of finding new solutions for ocean conservation, considering it one of the most pressing current challenges (Cava *et al*., 2005) and aligning the decade with Sustainable Development Goal - SDG 14, Life Below Water, one of the goals of the UN's 2030 Agenda.

During the assembly that instituted the Decade of Ocean Science for Sustainable Development, emphasis was placed on promoting ocean literacy. At the event, ocean literacy was defined as the understanding of how the ocean influences us and how we influence the ocean (Cava *et al*., 2005). In this context, the seven principles of the Ocean Decade were established (Table 1), summarizing the most critical and urgent topics for implementation in global research and actions.

The term "ocean literacy", introduced within the context of ocean culture, emerged during the Ocean Decade with the aim of integrating ocean knowledge into schools and raising environmental awareness from the early years of education (Cava *et al*., 2005). Through ocean literacy, it is possible to bring ocean knowledge into the classroom, aiming to enhance

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understanding of the impacts daily activities have on water bodies, their biodiversity, and how this affects the future of the planet.

Another term used by marine scholars is "ocean blindness," defined as the lack of awareness regarding the ocean: how ocean health impacts life on Earth and the economic and medical benefits provided by the ocean. However, this term can be demystified through access to information and the dissemination of ocean culture within society (UNESCO, 2021).

The environmental issues facing the planet have been the focus of significant global movements in the 21st century. In 2005, the United Nations established the Decade of the United Nations for Sustainable Development Education spanning from 2005 to 2014, as an international initiative to draw attention to the critical state of sustainability and conservation on the planet (UNESCO, 2004). During this period, the term "environmental education" gained global prominence, enabling countries to develop actions towards sustainable development (UNESCO, 2004). This demonstrates that international organizations have long sought to highlight environmental issues, and in this context, environmental education plays a crucial role.

Gomes and Ferreira (2018) define sustainable development as the application of practices for the use and extraction of the planet's resources in a manner that does not compromise the needs of future generations, thus fostering a conscious consumption that also positively impacts the economy.

In this context, environmental education is intrinsically linked to the study of global environmental issues, including marine conservation. According to Matias and Imperador (2022), environmental education promotes awareness, conservation, and sustainability in an integrated manner within communities.

Environmental education is aligned with ocean literacy by enabling the construction of marine knowledge in schools, taking into account the realities of their students. According to Cava *et al*. (2005), the dissemination of ocean knowledge will engage not only those living in coastal areas, who are more directly influenced by the sea, but can also provide learning opportunities for those residing far from the coast.

Given the privileged opportunity to promote ocean culture through ocean literacy during the Ocean Decade (UNESCO, 2021), this research aims to: present concepts of ocean literacy and ocean culture and their connections to environmental education; provide a brief overview of initiatives to promote ocean culture in Brazil during the Ocean Decade; and propose a diagnostic tool on ocean knowledge to contribute to the development of educational practices in support of ocean literacy based on students' prior knowledge.

Brief introduction to Environmental Education (EE)

The extraction of the planet's resources, since the advent of industrialization, has been conducted in an unsustainable manner, leading to the misconception that these resources are limitless.

As the consequences of this extraction become increasingly visible and concerning, governments have initiated movements toward sustainability. Consequently, environmental education has been highlighted to ensure that future generations learn to consider their actions and understand how these actions impact the planet (Conde, 2016).

Through the Decade of Education for Sustainable Development, proposed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2005, five principles of education for sustainable development were established (UNESCO, 2004). These principles aim to disseminate environmental knowledge within society to promote actions toward sustainable development (UNESCO, 2004). In this context, environmental education gains prominence.

Environmental education is an education in support of the environment that should be developed interdisciplinarily. This means it should not be limited to natural sciences alone but should also include geographical, financial, social, and other content areas (SEED/PR, 2008).

Since the term Environmental Education has been introduced into society, many authors have adopted it with unique interpretations, giving individual meanings to the term. Thus, simply referring to "environmental education" may not be sufficient to understand the objectives of environmental educational practice (Loureiro, 2007, p. 66).

According to Loureiro (2007), one of the earliest definitions of environmental education disseminated worldwide was erroneous and very restricted, as it focused on:

> *(...)exclusively focusing on the teaching of biological content and knowledge, particularly ecological aspects, the transmission of environmentally friendly behaviors, and the individual awareness of the beauty of nature, leading to behavioral change (pp. 66-67).*

In this context, Environmental Education would be limited to biological and behavioral aspects, thereby avoiding the complexity of the subject, which encompasses economic and cultural dimensions as well as the interconnection between humans and nature, including practices, actions, and public policies.

From this broad domain of Environmental Education emerges Critical Environmental Education, which is closely related to the critical thinking advocated by Paulo Freire. This approach to socio-environmental education enables individuals to contribute with joint opinions and actions towards sustainability (Rosa & Antiqueira, 2023).

To this end, both Critical Environmental Education and Freire's emancipatory thought engage with scientific literacy. Researchers advocate for a form of literacy based on Freire's concepts—not merely enabling individuals to decipher written codes, but also involving a set of actions that foster critical reflection and analysis (Silva & Sasseron, 2021).

Regarding Critical Environmental Education, Loureiro (2007) asserts:

> *With the critical perspective of environmental education, we understand that there are no timeless laws, absolute truths, concepts devoid of history, or education detached from society. Instead, there are dynamic relationships within time-space and unique characteristics of each social formation, which must be continually questioned and transcended to build a new society envisioned as sustainable" (p. 66).*

Therefore, the critical environmental perspective is not merely about rigid practices or following a singular course of action, as each location adopts and implements actions according to the specific characteristics of the area and community. Thus, each educational movement depends on the environmental and social reality of that particular place. Loureiro (2007) argues:

> *(...) by bringing environmental education into concrete reality and daily life, we prevent it from becoming an additional component, ideally conceived within the overloaded routines of work. We also avoid it remaining in the realm of empty discourse about 'salvation through education' or the normalization of 'ecologically correct' behaviors. Thus, it becomes an inherent component and perspective of pedagogical practice, enhancing*

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the movement toward new social relations with nature" (p. 68)

Environmental Education, from the perspective of pedagogical practice, aims to integrate environmental perceptions and issues with the community's reality, aligning with the planet's pressing needs (Conde, 2016). In this sense, one can argue that a challenge in implementing Environmental Education in school curricula is akin to the challenge of ocean literacy: addressing topics in relation to students' realities to make them meaningful.

There is no singular Environmental Education model where the information and practices are identical everywhere it is implemented. The reality of a community must be considered when planning Environmental Education actions, as actions that do not engage with the environment in which individuals live or that are not relevant to them tend to be less significant and beneficial (Jacobi, 2003).

Ocean literacy can be considered a facet of Environmental Education, as it highlights the environmental perspective of marine environments and encourages the development of projects, research, and actions that contribute to the conservation and better utilization of marine resources.

Ocean Literacy

Knowledge about ocean life and its contributions to Earth's ecosystems is often underexplored in schools. Cava *et al.* (2005) highlight the importance of incorporating ocean literacy into school curricula and note how this field has been largely overlooked:

> *The need for ocean literacy is straightforward: understanding the ocean is essential for understanding the planet we live on. This understanding is crucial for sustaining our planet and our own well-being. However, for many years, core curricula for both elementary and secondary levels have excluded ocean-related topics. Indeed, in some cases, the ocean has been entirely neglected in formal education. The most dominant feature on Earth is the ocean. The challenge faced by proponents of ocean literacy has been how to integrate ocean concepts into accepted curricula (p. 7).*

Currently, with the global and urgent visibility of the issue due to the Ocean Decade, many countries are implementing actions related to ocean sciences. According to UNESCO (2021), these actions:

> *(…) range from educational programmes focusing on ocean issues (Blue Schools in Portugal or Ocean School in Canada), to Ocean Literacy centres promoting hands-on activities (see the Marine Educational Centre in Malmö) and company-funded education programmes for students (see AXA XL Ocean Education programme), as well as public-awareness campaigns (see the European Union's Sea Change project) and immersive learning programmes at aquariums. The Ocean Decade provides a powerful and unique opportunity to catalyse and scale up these and other Ocean Literacy programmes at the global level (p. 8).*

UNESCO (2021) further asserts that ocean literacy is not confined to educational settings but has also been evolving significantly in societal applications. This evolution has catalyzed actions for the conservation and sustainable use of the ocean.

Several studies have been published worldwide regarding the level of knowledge that formal education students have about the ocean. A study conducted in three Mediterranean countries—Italy, Croatia, and Greece—with 1,004 students, revealed an average level of knowledge on this topic (Mogias *et al.*, 2019). The study employed a 16-question questionnaire with binary correct/incorrect answers, with results derived from the number of correct answers given by students. A numerical scale from 0 to 16 was used, with incorrect answers scoring 0 and correct answers scoring 1 point each. A mean score of 8.5 indicated the balance point of the scale. Consequently, the authors argue for the importance of implementing ocean literacy from the elementary school level:

> *Since elementary school students still maintain their natural curiosity about the world around them, it is crucial to capture their attention early by integrating ocean literacy topics into national curricula and continuously nurturing their curiosity (p. 11)*

Pazoto *et al.* (2021) conducted a study based on academic research, pamphlets, and other means of disseminating knowledge about ocean culture in Brazil, and concluded that:

> *In Brazil, the production is concentrated in the field of Coastal Marine Environmental Education, but is limited to national journals, books, and manuals, resulting in a narrow range of information produced in this area. Regarding the case study of Brazilian school curricula, it was found that there are more topics related to marine environments compared to other countries; however, this subject still represents only a fraction of Brazilian curricula. Therefore, it is necessary to expand the content related to oceanic and marine environments to provide students with fundamental knowledge about the importance and functions of these environments, as well as their conservation (p. 11).*

As observed, ocean culture is not limited to educators and science professionals. It is much broader and more inclusive, encompassing society as a whole. Therefore, it is crucial to promote it to everyone. In this regard, we must be attentive to the challenge of engaging individuals who have limited contact with the oceans but who can and should understand their importance, influence, and diversity in sustaining life, as well as the need to advocate for their conservation.

Ocean Culture in Brazil

Brazil has developed various initiatives to promote ocean culture. Notably, the Federal University of São Paulo (UNIFESP) has implemented the "Maré de Ciência" extension program, which aims to disseminate scientific issues and foster interaction between society, public policies, and science (Maré de Ciência, 2022).

The Maré de Ciência program, in collaboration with the Ministry of Science, Technology, and Innovations – Geosciences, Ocean, and Antarctica Coordination (MCTI/CGOA) and UNESCO Brazil, established the Brazilian Alliance for Ocean Culture. This network includes mayors, public administrators, legislators, and civil and private institutions, aiming to recruit and manage local actions that meet national goals for sustainable development and promote ocean culture (Christofoletti, 2021).

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Another initiative is the Brazilian Ocean Olympiad (O2), which encourages knowledge of ocean culture in both formal and informal settings, targeting individuals of all ages and educational levels (Maré de Ciência, 2021). Additionally, the Blue School Brazil program aims to integrate ocean science into the national school curriculum in a cross-cutting manner, promoting critical and creative thinking across all schools in the country (Maré de Ciência, 2021).

Through Instagram, the Maré de Ciência project announced a call for applications in 2022 to train ocean culture multipliers, open to all individuals over 18 years old. The initiative received 515 applications from 19 states in Brazil, indicating significant public interest in the topic.

Brazil was also a pioneer in enacting an Ocean Culture Law, which has been adopted in Santos-SP and in municipalities in Ceará: Itarema, Camocim, and Acaraú (MCTI, 2022). Law 3.935 defines:

> *For the purposes of this law, Ocean Culture is understood as the set of processes that promotes ocean literacy, meaning the understanding of essential principles and fundamental concepts that allow for the knowledge of the ocean's influence on us and our influence on the ocean"* (SANTOS (SP), 2021, p. 1).

The Federal University of ABC offered a continuing education course for current and future teachers, titled "MaRemoto: the invasion of ocean culture in schools". The course, held synchronously in 2021, had 194 participants (Ghilardi-Lopes & Barradas, 2022).

One of the greatest challenges in teaching ocean literacy is the perception people have of it (UNESCO, 2021). Many view the ocean merely as the vast expanse of water visible to the eye, populated by fish, sharks, whales, and dolphins. However, what lies beyond this surface view of the ocean? Especially for those who live far from or have never visited a beach, how do they perceive the ocean?

To contribute to understanding what people know about the ocean, we propose the following questionnaire.

MATERIAL AND METHODS

This is a qualitative research study. According to Minayo (2007), one of the primary objectives of qualitative research is to understand human phenomena through values, beliefs, representations, and habits. This approach allows for generating results that are not only statistical, but also contribute to understanding how ocean culture knowledge is disseminated within society.

The research topic initially arose from curiosity about the extent of marine knowledge among students in the upper grades of elementary school during mandatory curricular internships. As certain topics were introduced during my classes, a noticeable deficit in this knowledge was observed. Therefore, through a literature review of scientific publications on environmental education and ocean culture from 2000 to 2022, and through observations with upper-grade elementary and high school students, an evaluative questionnaire on ocean culture was developed, which will be presented below.

Blue Questionnaire: Proposing an Assessment Tool for Ocean Culture in Schools

The questionnaire proposed in this study (Appendix 1) consists of 28 questions focused on various aspects of the oceans, including their social, climatic, industrial, pharmaceutical, subsistence, and life-supporting influences on the planet. The questionnaire is based on the seven principles of ocean literacy proposed by Cava *et al*. (2005).

Mogias *et al*. (2019) did not disclose the exact questionnaire used in their research, only the context of some questions and how they were addressed. Thus, we developed the "Blue Questionnaire" to remedy this.

The questions were crafted with clear language to be applicable to students in upper elementary and high school levels. The name "Blue Questionnaire" is derived from the color reflected by the oceans and serves as a didactic way to present the research content.

The questionnaire is designed in a qualitative format, including both open and closed-ended questions. This approach aims not only to collect information from respondents but also to generate data for future research and diagnostics, as advocated by Agee (2009).

The questions in the questionnaire adhere to both closed and open formats. Closed questions provide structured responses, while open questions allow for more detailed insights from respondents' own words (Roopa & Rani, 2012).

Table 1 outlines the numbering of the questions and the corresponding ocean literacy principle they represent. Questions numbered from 8 to 27 are based on the principles of the Ocean Decade, whereas questions 1 to 7 focus on personal experiences and background information. The final question, number 28, concludes the questionnaire by prompting a reflection on the respondent's perception of the ocean.

Table 1 – Blue Questionnaire Questions Related to Each Principle of the Ocean Decade

Principles	Questions
1 - Earth has one big ocean with many features.	9, 10 and 11
2 - The ocean and life in the ocean shape the features of Earth.	12, 13 and 14
3 - The ocean has a major influence on weather and climate.	15, 16 and 17
4 - The ocean makes Earth habitable.	18, 19 and 20
5 - The ocean supports a great diversity of life and ecosystems.	21 and 22
6 -The ocean and humans are inextricably interconnected.	23, 24 and 25
7 - The ocean is largely unexplored.	26 and 27

The development of the questionnaire followed the methodology proposed by Roopa and Rani (2012), which outlines the following stages for questionnaire creation: a) Initial Considerations. b) Question Content, Wording, and Response Format. c)Question Sequence and Layout. d)Pre-Test (Pilot) and Revision. e) Final Questionnaire.

In accordance with this methodology, both open and closed questions were formulated to ensure a comprehensive range of results.

The pre-test (pilot questionnaire) was administered to two classes of upper elementary students, totaling 63 participants. The questionnaire was printed on A4 paper and distributed in the classroom.

This stage was crucial for incorporating additional questions related to other principles of Ocean Culture, as the students demonstrated no difficulty in understanding the questions. Consequently, the final version of the questionnaire, which includes these revisions, is presented in Appendix 1 of this manuscript.

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RESULTS

The administration of the pilot questionnaire proved to be a significant moment for evaluating its appeal and comprehensibility among students, serving as a valuable opportunity for dialogue. The students showed interest in the questionnaire, particularly in certain questions. For instance, Question 22, which addresses the largest animal in the world, prompted responses where students correctly identified that the largest animal lives in the ocean. However, some students mentioned the "Megalodon," indicating prior knowledge and interest in the topic. After collecting the completed questionnaires, a discussion was held with the students to clarify that the largest animal in the world is indeed a living creature in the ocean: the Blue Whale. This conversation emphasized the importance of preserving its habitat, the ocean. This experience highlighted the value of the questionnaire in assessing prior knowledge and initiating discussions to promote ocean culture.

Another noteworthy aspect of the questionnaires was the question concerning students' interest in the ocean (Question 5). Responses such as "The ocean is beautiful" "I love animals," and other key phrases present in the word cloud (Figure 1) underscored the necessity of engaging with the topic in an appealing manner. Exploring the ocean's beauty and emphasizing its biodiversity proved crucial for raising awareness about the importance of its preservation.

Figure 1 – Word Cloud of Responses to Question 5

Source: Author's own elaboration

Interesting responses were also noted in the final question (Question 28), which inquires about what comes to mind when individuals hear the word "Ocean." Figure 2 presents the word cloud for this question. The response "Life" stands out, demonstrating that students recognize the rich biodiversity that the oceans symbolize. Analyzing the students' answers from the pilot questionnaires not only provided insights for refining the final version of the questionnaire but also highlighted the interest among young people in the topic. This underscores the importance of discussing marine resources and their significance in fostering a more informed and conscious society.

Figure 2 – Word Cloud of Responses to Question 28

Source: Author's own elaboration

DISCUSSION

The research encourages us to reflect on the urgency of promoting ocean culture for everyone, so that all individuals can realize that there is far more species diversity than those already known, including species that have yet to be described. These species inhabit conditions very different from those on the surface, as the ocean itself encompasses entirely distinct ecosystems at each depth level, each with its own environmental and biological characteristics.

The ocean represents a multitude of possibilities. It is where the pharmaceutical industry conducts research to develop medications, such as the anticancer drug ara-C (Citarabine®) and the antiviral ara-A (Vidarabine®) (Costa-Lotufo *et al*., 2009). It is also where the oil industry extracts petroleum, a raw material created by the planet itself, from which derivatives like fuel are produced (Silva *et al*., 2021). How many ocean by-products do people use throughout their lives without realizing it? To address questions like these, the concept of ocean literacy was established. It aims to promote conservation and sustainability, as the International Conference on Environment and Society, held in Thessaloniki, Greece, identified education and public awareness as key pillars of sustainability (Barbieri & Silva, 2001). Ocean literacy promotes a greater awareness among citizens regarding sustainable practices.. Engaging with ocean literacy fosters understanding about the impacts of pollution on the seas and how to mitigate them.

Integrating ocean culture into classrooms through ocean literacy remains a challenge, not only in Brazil but globally. Despite being a prominent topic currently, this scientific field still requires further research. For example, assessing the impact of the Blue School Brazil program on the schools where it has been implemented is necessary.

CONCLUSIONS

It is expected that the proposed Blue Questionnaire will contribute to assessing ocean culture in schools by identifying students' prior knowledge on the subject, which is crucial for developing actions in critical environmental education aimed at ocean literacy.

This tool is intended to be applied in various contexts, not only within educational settings but also in informal learning environments, as it can be adapted to meet diverse objectives and contexts. The goal is for the questionnaire to extend beyond classrooms and be utilized in research projects and scientific outreach events, which are vital for promoting citizen science.

It is hoped that this work will aid in finding effective methods to disseminate ocean knowledge across different contexts, supporting the quest for understanding and conserving marine environments.

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APPENDIX 1

Blue Questionnaire

Educational Segment/School Year:
Questions:

1. Have you ever been to the beach?
   ( ) Yes ( ) No

2. How often do you go to the beach?
   ( ) Rarely ( ) Frequently ( ) I have never been to the beach

3. When you go to the beach, what do you do with trash (soda cans, paper, cookie wrappers, plastic cups, etc.)?
   ( ) I leave it on the sand
   ( ) I put it in a bag and throw it in the nearest trash can
   ( ) I don't know, I don't notice
   ( ) I've never been to the beach

4. Have you ever found trash in the ocean while at the beach?
   ( ) Yes ( ) No

5. Are you interested in topics related to the ocean?
   ( ) Yes ( ) No

   5.1 Why?

6. Where does your knowledge about the ocean come from?
   ( ) I search on the internet
   ( ) From school
   ( ) I don't search

7. Have you ever visited a museum, exhibition, aquarium, or event about the ocean and marine life?
   ( ) Yes ( ) No

8. Did you know that there is only one ocean?
   ( ) Yes ( ) No

9. Did you know that the ocean supplies all the water bodies on the planet, like rivers and lakes?
   ( ) Yes ( ) No

10. Did you know that the ocean is part of the water cycle?
    ( ) Yes ( ) No

11. Did you know that the resources the ocean provides, like fish, seafood, and oil, are limited?
    ( ) Yes ( ) No

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12. Did you know that the sea level shapes the land masses (which we call continents), meaning that the ocean is responsible for the shape of continents?
( ) Yes ( ) No

13. Did you know that erosion (the process of rock wear) forms beach sand?
( ) Yes ( ) No

14. Did you know that beach sand can travel to other beaches through winds and ocean currents?
( ) Yes ( ) No

15. Did you know that the ocean influences the climate?
( ) Yes ( ) No

16. Did you know that the ocean helps absorb heat?
( ) Yes ( ) No

17. Did you know that hurricanes and cyclones form in the middle of the ocean and only later reach the land?
( ) Yes ( ) No

18. Did you know that it is the ocean that makes life on Earth possible, including ours?
( ) Yes ( ) No

19. Did you know that most of the oxygen we breathe is produced by marine life?
( ) Yes ( ) No

20. Did you know that scientists have found evidence that one of the first forms of life may have originated in the ocean (this means that life on the planet may have started in the water)?
( ) Yes ( ) No

21. Did you know that most of the species diversity occurs in the ocean?
( ) Yes ( ) No

22. Did you know that the largest animal living on Earth lives in the ocean?
( ) Yes ( ) No

23. Did you know that we humans depend on the ocean for many things like food, medicine, travel, and more?
( ) Yes ( ) No

24. Did you know that trash is the leading cause of death for marine animals like turtles, whales, and dolphins?
( ) Yes ( ) No

25. Did you know that sewage is discharged into the sea?
( ) Yes ( ) No

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26. Did you know that to continue advancing in ocean research, professionals in science fields, as well as professionals in the computing field, are needed?
( ) Yes ( ) No

27. Did you know that most of the ocean is still unknown today?
( ) Yes ( ) No

28. What do you think of when someone says the word "ocean"?