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BLUE UNITED

BLUE UNITED: LEARN, DEBATE, ACT FOR THE FUTURE OF THE OCEANS



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Blue United: Learn, Debate, Act for the Future of the Oceans

An interdisciplinary simulation combining science, politics, art, and local knowledge for transformative ocean education

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Keywords: Knowledge systems; Sustainability; Simulation-based debate; Marine ecosystems; Emotional engagement.

Abstract (English): Blue United is an interdisciplinary educational project that offers an innovative simulation-based activity to engage high school students in ocean stewardship. Inspired by the United Nations-style debate models, the project broadens the traditional diplomatic approach by integrating a diverse range of knowledge systems: scientific-technical, political-institutional, artistic-cultural, and traditional-community knowledge. The goal is to foster a more holistic and realistic understanding of environmental issues related to marine ecosystems through the exchange of diverse perspectives. The methodology is divided into two main phases: a preparatory phase, during which a topic is selected and students receive informational material to explore their assigned roles further; and an operational phase, in which a structured debate takes place, where students co-create a shared action plan. Alongside the simulation, a creative group called Ocean Voices develops artistic content inspired by the experience, emphasizing emotional and expressive engagement both from and for the students. Each role in the simulation is connected to various Sustainable Development Goals (SDGs) from the 2030 Agenda—for example, SDG 14 (Life Below Water), SDG 17 (Partnerships for the Goals), and others—reinforcing the link between education, global citizenship, and environmental action. The project promotes key transversal skills such as critical thinking, negotiation, and collaboration, making the learning process both participatory and meaningful. Blue United stands out as a replicable, flexible, and continuously evolving model—adaptable to diverse educational contexts and capable of inspiring future initiatives centered on sustainability, inclusion, and interdisciplinary cooperation.

Abstract (Portuguese): *Blue United* é um projeto educacional interdisciplinar que oferece uma atividade inovadora baseada em uma simulação para engajar estudantes do ensino médio na preservação dos oceanos. Inspirado nos modelos de debate das Nações Unidas, o projeto amplia a abordagem diplomática tradicional ao integrar uma ampla diversidade de sistemas de conhecimento: científico-técnico, político-institucional, artístico-cultural e comunitário-tradicional. O objetivo é promover uma

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compreensão mais holística e realista das questões ambientais relacionadas aos ecossistemas marinhos por meio da troca de perspectivas diversas. A metodologia é dividida em duas fases principais: uma fase preparatória, durante a qual um tema é selecionado e os estudantes recebem material informativo para aprofundar seus papéis designados; e uma fase operacional, em que ocorre um debate estruturado no qual os estudantes cocriam um plano de ação comum. Paralelamente à simulação, um grupo criativo chamado *Ocean Voices* desenvolve conteúdos artísticos inspirados na experiência da simulação, enfatizando o envolvimento emocional e expressivo. Cada papel na simulação está relacionado a diferentes Objetivos de Desenvolvimento Sustentável (ODS) da Agenda 2030 — por exemplo, ODS 14 (Vida Submarina), ODS 17 (Parcerias para a implementação dos objetivos), entre outros — reforçando o vínculo entre educação, cidadania global e ação ambiental. O projeto promove competências transversais essenciais como pensamento crítico, negociação e colaboração, tornando o processo de aprendizagem participativo e significativo. *Blue United* se destaca como um modelo replicável, flexível e em constante evolução — adaptável a diversos contextos educacionais e capaz de inspirar futuras iniciativas voltadas à sustentabilidade, inclusão e cooperação interdisciplinar.

1.Introduction

1.1 Background and Current Challenges

The oceans and seas are silent presences that influence our daily lives—often without us even realizing it. They are fundamental components of the water cycle and the balance that sustains life on Earth: they regulate the climate, contribute to food production, and play a crucial role in the atmospheric oxygen balance. Acting as the planet’s true “lungs,” the oceans fulfill this role thanks to their constant and complex interaction with other terrestrial ecosystems and with all forms of life.

However, these vital ecosystems are now severely threatened by more and more complex environmental problems. Plastic pollution is suffocating marine wildlife, acidification is altering habitats and endangering entire food chains, and climate change is causing sea level rise and the loss of marine biodiversity. Furthermore, overfishing threatens both the survival of many marine species and the human communities that directly depend on these resources.

To address these challenges, it is essential to promote environmental education that extends beyond the transmission of scientific knowledge alone. It should encourage the integration of diverse knowledge systems and foster an interdisciplinary, participatory approach rooted in the principles of civic engagement.⁵ According to the document *Ocean Literacy for All*⁶, published by UNESCO and the Italian Ministry of Education, genuine marine sustainability education requires the active involvement of all sectors of society and of multiple forms of knowledge—from science to art, from politics to local traditions—thus valuing multiple perspectives in understanding and addressing ocean-related challenges.

It is within this context that *Blue United* emerges—an innovative educational initiative inspired by United Nations simulation models, but with a fundamental difference: it broadens participation by including representatives from various disciplines and knowledge systems. The primary goal of *Blue*

⁵ Universal Declaration of Human Rights (1948), Article 21, adopted by the UN General Assembly. Available at: <https://www.un.org/en/universal-declaration-human-rights/>, last accessed: 26/03/2025.

⁶ UNESCO Office Venice and Regional Bureau for Science and Culture in Europe & Intergovernmental Oceanographic Commission. *L'educazione all'oceano per tutti: Kit pratico* (2020). UNESCO.

United is to engage high school students in interdisciplinary simulations where they take on the roles of scientific experts, policymakers, activists, artists, representatives of local communities, and others, so they can collaboratively discuss, exchange knowledge, and propose concrete solutions to ocean crises.

The project aligns with the Sustainable Development Goals (SDGs) of the 2030 Agenda⁷, with particular emphasis on SDG 14 (*Life Below Water*) and SDG 17 (*Partnerships for the Goals*). Structured into two main phases—a preparatory phase, during which students explore their assigned roles and the selected topic in greater depth, and an operational phase, in which the simulation takes place in the form of an interdisciplinary debate—the project helps students develop transversal skills such as critical thinking, argumentation, and teamwork. *Blue United* also promotes the integration of creative tools, such as the production of narrative, artistic, and audiovisual content, creating deeper emotional engagement among students.

The aim of this study is to present the *Blue United* project, illustrating how active learning and interdisciplinary co-creation can enhance the understanding of environmental challenges, promote the value of diverse forms of knowledge, and foster meaningful exchange between them—while also encouraging a greater sense of responsibility and active participation in ocean stewardship.

This paper is structured as follows: after the introduction, Section 2 presents the methodology behind the *Blue United* simulation, detailing its phases, structure, and implementation strategies. Section 3 outlines the expected outcomes and educational impact, with a focus on skill development, environmental awareness, and community engagement. Finally, Section 4 offers conclusions and future perspectives, reflecting on the model’s feasibility, the effectiveness of its interdisciplinary approach, and its potential for adaptation in diverse educational contexts.

1.2 Conceptual Foundations of *Blue United*

The *Blue United* project originated from the analysis of educational models successfully implemented in other international contexts, such as Brazil, where United Nations-style debate simulations are widely used in schools to develop students’ critical thinking and communication skills. *Blue United* was conceived as an innovative and interdisciplinary evolution of traditional UN simulation models—drawing inspiration from the strengths of international diplomatic debate, while introducing a fundamental innovation: the integration of diverse knowledge systems to address a pressing global environmental issue—ocean protection.

During the development phase, we clearly defined the educational objectives of the project, aligning them with the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda, particularly SDG 14 (*Life Below Water*) and SDG 17 (*Partnerships for the Goals*). Special attention was given to the integration and recognition of different knowledge systems, understood as sets of information, values, and approaches shaped both by cultural experience and by disciplinary specialization. This interdisciplinary perspective guided the structure of the debate, allowing students to represent and engage with diverse cultural and disciplinary viewpoints.

To visually represent the interdisciplinary and collaborative essence of *Blue United*, a logo was created that embodies the project’s values and mission. The inspiration came from Henri Matisse’s famous

⁷ Transforming Our World: The 2030 Agenda for Sustainable Development (2015), adopted by the UN General Assembly. Available at: <https://sdgs.un.org/goals>, last accessed: 26/03/2025.

painting *The Dance*⁸, in which stylized human figures hold hands in a dynamic circle. This universal symbol represents harmony, collaboration, and interdependence—mirroring the need to work together toward a common goal, just as in our project. The figures in the logo reflect the universal essence of humanity, without distinctions of culture, gender, or social status, emphasizing the inclusivity and global cooperation needed to protect the oceans. The design also deliberately recalls the logo of the United Nations, highlighting our inspiration from global diplomacy and the resolution of complex problems through dialogue among diverse voices. At the center of the logo, the globe represents the global scale of environmental challenges. Oceans, covering 71% of our planet, connect all nations and cultures: their protection cannot be the responsibility of a few, but a shared duty of all humanity.



Figure 1. Logo of the Blue United project. Concept by Beatriz Machado de Faria; graphic design by Alessandra Puce and Viviana Perino. Copyright Free.

To further reinforce the interdisciplinary nature of the project, a short introductory video was created, featuring symbolic testimonials from individuals representing the different knowledge systems. In the video, figures such as a marine biologist, a fisherman, a politician, an artist, and a representative of an Indigenous community share their personal relationship with the ocean—highlighting the diversity and richness of perspectives that the project seeks to value.



Figure 2. Scan the QR code to access the video featuring testimonials from individuals representing diverse knowledge systems. Created by Alessandra Puce, Andrea Iannarelli, Beatriz Machado de Faria, and Viviana Perino.

At its core, *Blue United* aims to effectively integrate multiple knowledge systems to find concrete and shared solutions to ocean-related problems. There is no single valid perspective; only through

⁸ Matisse, H. *The Dance (La Danse)* (1910). Digital version. Available at: Pinterest, last accessed: 26/03/2025.

cooperation between science, politics, economics, art, and local communities can we truly protect and preserve our planet.

2. Methodology

2.1 Target Audience and Motivation

The *Blue United* project is aimed at high school students, from the first to the final year. This target group was selected strategically: in order to participate actively and successfully in a complex interdisciplinary simulation such as *Blue United*, students must have developed certain cognitive and analytical skills, a minimal understanding of historical, social, and political dynamics at global level, as well as critical awareness of environmental issues.

The chosen age group ensures that students have reached a sufficient level of maturity and knowledge to engage in a structured debate, one that highlights the diversity of perspectives represented by the assigned roles. At the same time, it allows for the development of essential transversal skills such as critical thinking, argumentation, teamwork, and interdisciplinary collaboration.

Moreover, the methodology adopted for *Blue United* is characterized by its flexibility and adaptability: the educational pathway is designed not only in consideration of the students' interests and competencies, but also of the educational goals set by the teachers and the facilitators implementing the project. This means that the simulation can be adapted to the specific needs of schools and educators, while always maintaining its central objective: to integrate different knowledge systems in a realistic and engaging way to address ocean-related issues. Students themselves can also contribute to shaping certain aspects of the project, making the experience not only educational, but also participatory and inclusive.

In summary, the target audience and methodology of *Blue United* clearly respond to the educational need to build critically aware citizens, capable of facing global environmental challenges with competence and critical thinking—fully aligned with the Sustainable Development Goals (such as SDG 14 and 17) of the 2030 Agenda.

2.2 Simulation Development

The activity follows a clear methodology, structured into two main phases: a preparatory phase A (organizational) and an operational phase B (the actual simulation). The primary goal is to ensure a flexible and customizable format, aligned with the goals of teachers and the active engagement of students.

A. Preparatory Phase (Organization)

A.1 Selection of the Crisis

In this initial stage, the organizers select a concrete and current environmental issue related to the oceans to serve as the central focus of the debate. Possible crisis topics include: Plastic pollution in the oceans; Overfishing and the decline of marine biodiversity; Ocean acidification and its impact on ecosystems; Rising sea levels and coastal communities; Renewable energy and the sustainable development of ocean resources.

The selected crisis should be relevant to the specific educational context and sufficiently complex to stimulate structured, interdisciplinary discussions.

A.2 Selection and Assignment of Roles

One of the defining features of the project is the inclusion of diverse roles that represent different knowledge systems. These systems are introduced with the goal of integrating a range of disciplinary, professional, and cultural perspectives into the debate, reflecting the real-world complexity of ocean-related challenges. The four main knowledge areas involved in the simulation are: scientific and technical experts; politics and diplomacy; local communities and traditions; and art, culture, and economy.

Each area is associated with a selection of key roles, chosen not only to represent various points of view, but also to highlight concrete links with the Sustainable Development Goals (SDGs) of the 2030 Agenda. Through this approach, *Blue United* enables students to explore how environmental issues intersect with social, economic, cultural, and legal dimensions—encouraging critical reflection on the interdependence between different sectors of society.

The following table presents the four main knowledge areas, examples of associated roles, and the relevant SDGs:

Knowledge Area	Sample Roles	Associated SDGs	
Scientific and Technical Expert	Marine Biologist, Climatologist, Environmental Engineering, Oceanographer, Renewable Energy Expert	  	Directly address climate change and propose technical solutions for ocean protection and the development of renewable energy
Politics and Diplomacy	UN diplomat, Minister for the environment, Marine law expert, ONG representative, Investigative journalist	 	Represent the role of institutions, laws, and international cooperations in promoting environmental governance
Local communities and traditions	Indigenous community leader, Fisherman, Representative of a threatened Island, Activist, Underwater explorer	  	Bring local and traditions perspectives on environmental impacts and the inequalities faced by coastal communities
Art, culture and economy	Environmental artist, Documentary filmmaker, Sustainable chef, Blue economy expert, Environmental influencer	  	Use cultural and creative languages to raise public awareness and promoter sustainable economic models related to the ocean

Table 1. Overview of the four main knowledge areas, with corresponding roles and relevant Sustainable Development Goals (SDGs).

In parallel with the debate committee, the simulation also includes a creative group called *Ocean Voices*. This communication and awareness-raising team is composed of students tasked with documenting, interpreting, and artistically representing the theme addressed, the emotions that emerge, and the key messages of the simulation. Their role is to capture impressions, emotional responses, and outcomes from the discussions, and to create artistic and communicative content (such as videos, poems, posters, collages, or other awareness-raising materials).

The work of *Ocean Voices* actively contributes to several Sustainable Development Goals, particularly SDG 4 (*Quality Education*), by promoting inclusive and creative learning, as well as fostering environmental awareness through the dissemination of their work.

Both committees and their respective roles can be expanded or adapted according to the educational objectives defined by teachers or project facilitators and the specific characteristics of the students involved. This flexibility allows each simulation to be uniquely tailored, sparking students' interest and valuing the particular strengths of each group.

A.3 Student Preparation.

Once the roles have been assigned, students receive an information kit prepared by the project facilitators. The kit includes basic information about the selected environmental crisis, useful bibliographic references, up-to-date scientific data, and general guidelines for the assigned role. This phase lasts approximately one week and requires students assigned to roles to engage in individual research and independent in-depth study.

In parallel, the students who are part of *Ocean Voices* begin reflecting on and developing their creative response to the debate topic.

B. Operational Phase (Simulation Execution)

The operational phase consists of the actual simulation, carried out as a structured and realistic debate. This phase ideally lasts at least two days, divided into clearly defined working sessions:

B.1. Introduction to the Simulation

The simulation opens with a brief introduction to the selected topic clearly outlining the objectives and rules of the debate by the facilitators.

B.2. Discussions and Negotiations

Each participant assumes their assigned role and presents their arguments and concrete proposals to the committee. Participants are expected to negotiate with one another, seeking common ground and shared solutions that reflect the integration of diverse disciplinary perspectives.

During this phase, the *Ocean Voices* group may gather information, impressions, ideas, and significant moments to create artistic and communicative outputs related to the ongoing discussions. These creative materials (such as narrative videos, poems, collages, posters, or awareness campaigns) aim to synthesize the emerging content in an emotional and engaging way.

B.3. Voting Process

At the end of the discussions and negotiations phase, a vote is held to determine which ideas, solutions, and proposals have gained majority support. This stage clearly defines the guidelines and collective decisions that will shape the drafting of the final document.

B.4. Drafting the Final Document

The final document is written in alignment with the outcomes of the vote, ensuring that it faithfully reflects the collectively made decisions. The document may take various forms: a final resolution, a symbolic legislative proposal, an actionable project, or an official letter addressed to relevant institutions or organizations.

In addition, the creative outputs developed by the *Ocean Voices* group can be used to further amplify the emotional and communicative impact of the conclusions, contributing to greater awareness and engagement—both within the school and beyond. At the end of the debate, their work is presented to the committee.

The entire process is designed to foster students' critical thinking, teamwork, and collaborative problem-solving skills, while demonstrating the importance of integrating diverse knowledge systems to effectively address today's environmental challenges.

This methodology allows students not only to learn new content related to ocean protection, but also to gain firsthand experience of how decision-making processes unfold. The combination of diverse roles, interdisciplinary dialogue, and democratic voting simulates the dynamics of international governance and equips students with essential cognitive and social tools to become responsible and informed citizens.

2.3 Creative Tools and Emotional Engagement

A distinctive element of the *Blue United* project is the integration of creative tools that enrich students' educational experiences through emotional and personal engagement.

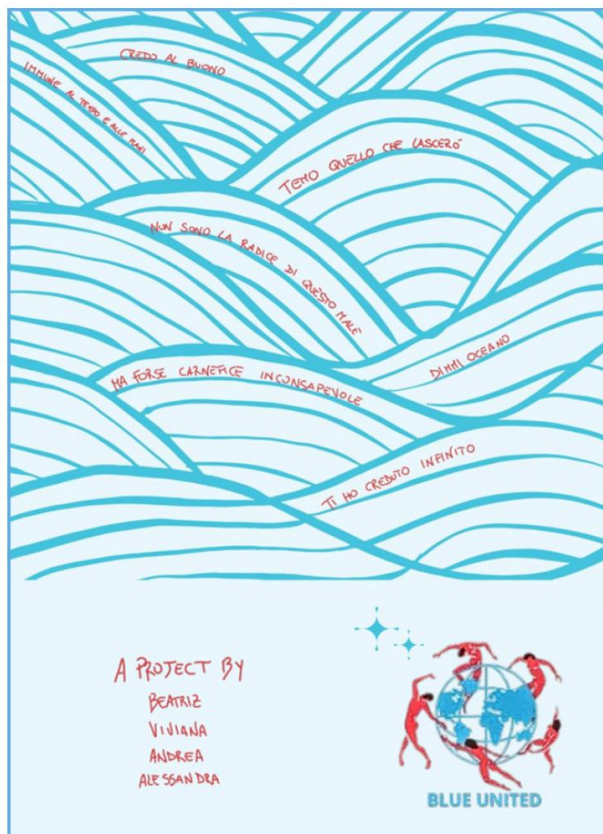
The decision to introduce *Ocean Voices*, a creative component of the simulation, reflects the awareness that the most effective learning engages both the rational and emotional spheres of students. Establishing a personal connection to the topics addressed helps them internalize information more deeply and develop greater sensitivity toward global environmental issues.

Suggested creative outputs include, for example, narrative videos, poems, short stories, posters, collages, or awareness-raising signs. These materials may aim to represent the symbolic voice of the oceans or endangered marine species, visually synthesize the environmental crisis being addressed, express the perspectives and emotions of the roles involved in the simulation, and convey clear, impactful messages to raise awareness within the school community and encourage active engagement in ocean stewardship.

These tools are recommended to amplify the emotional, educational, and social impact of the simulation. They allow students to become conscious creators of messages that raise awareness and actively engage the school community, while also extending the educational impact beyond the simulation itself.

In line with this approach, we as the project creators also experimented with creative communication by designing a flyer that combined poetry and visual elements to promote ocean stewardship. This piece serves as both an example of the kind of output the project encourages and a means of raising awareness beyond the classroom.

FRONT



BACK

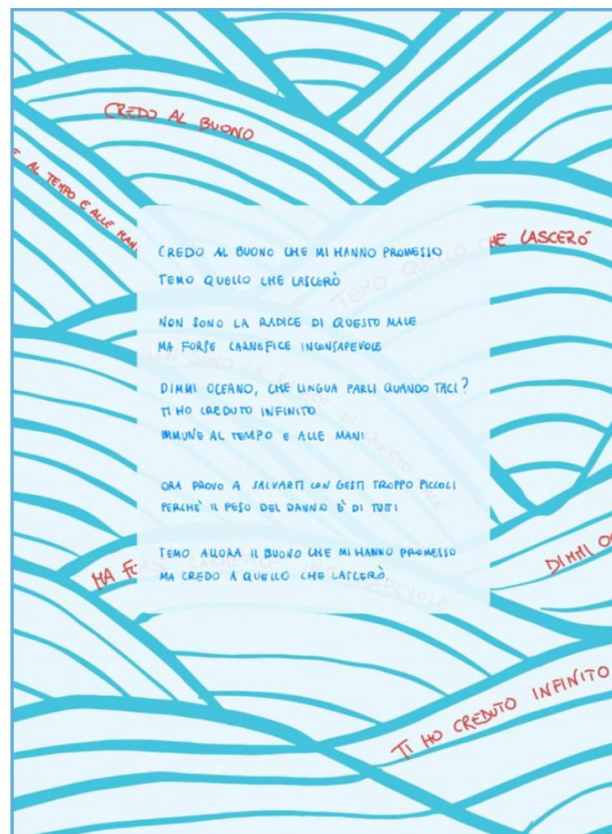


Figure 4. Flyer with poetry (in Italian) designed and written by Alessandra Puce to promote ocean stewardship.

3. Expected Outcomes and Educational Impact

The *Blue United* educational simulation project primarily aims to develop transversal and interdisciplinary skills in high school students through a structured and realistic debate based on the integration of diverse knowledge systems. Each participant, by assuming a specific role, actively contributes to the debate not only by sharing information but also by bringing in different cultural and disciplinary approaches, therefore ensuring a deep and comprehensive understanding of the complexity of the ocean-related issues addressed.

The project is expected to promote the acquisition of critical and analytical abilities such as problem solving and critical thinking, enabling students to analyze complex problems by evaluating different perspectives and formulating realistic and shared solutions. Furthermore, the need to represent and defend their assigned perspective will stimulate the development of argumentation skills and public speaking.

On the level of environmental awareness, *Blue United* aims to significantly increase students' understanding of ocean-related issues, generating a sense of both personal and collective responsibility. The integration of creative tools will further contribute to emotionally engaging students and effectively disseminating the key messages that emerge in a participatory way.

The project is also expected to have a positive impact on the school community as a whole, promoting a culture of interdisciplinary cooperation and concretely demonstrating that the diversity of perspectives is essential to successfully addressing contemporary global challenges.

4. Conclusions and Future Perspectives

The project's methodology, characterized by flexibility and adaptability, offers extensive potential for future development. The model can be applied to new educational contexts, extended to additional environmental topics, and enriched through collaborations with experts and institutions—making it a replicable format at both national and international levels.

Looking ahead, particular attention is being given to inclusion and accessibility. There are plans to expand and diversify the educational materials by incorporating subtitled multimedia content, sign language resources, and immersive technologies such as virtual reality, in order to ensure full and active participation for all students, including those with learning difficulties or sensory and motor disabilities. The model has initially been presented in a simplified version to facilitate a smoother understanding.

One potential future scenario involves reimagining the role of *Ocean Voices*. In this vision, during the preparatory phase, while the debate committee conducts its autonomous research for the simulation, the *Ocean Voices* committee could simultaneously work independently to produce an awareness-raising moment to be presented before the debate begins. For example, by adopting the perspective of a natural element—such as the ocean itself or a marine organism—students could create poems, videos, or visual materials to introduce the theme in an emotional and engaging way.

Afterward, the creative committee could integrate into the debate itself, contributing to the decision-making process involved in drafting the final document. This evolution would allow *Ocean Voices* to go beyond its role of documentation and awareness-raising, becoming an actor in both the educational and deliberative dimensions of the project.

Blue United has the potential to establish itself as a global educational activity, capable of engaging students from different nations through debate scenarios and international collaboration. One of the most promising future directions is encouraging students to take concrete action, such as launching local awareness campaigns and participating in volunteer initiatives—transforming the project from a purely educational experience into a catalyst for social and environmental change.

Blue United is a dynamic and continuously evolving project.