ProBleu

Promoting ocean and water literacy

in school communities

Call HORIZON-MISS-2022-OCEAN-01

Deliverable D2.3

Adaptation and improvement of Blue School guidance

Lead partner: Earthwatch

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Summary

The Network of European Blue Schools (NEBS) is an initiative aimed at promoting ocean and freshwater literacy in school communities. This deliverable 2.3 outlines the development of templates and guidance for teachers to create projects and apply for ProBleu funding to become a Blue School. The Guidance[1] includes elements such as a downloadable brainstorming worksheet, a list of potential project ideas, email templates, inclusivity adaptations, and a PowerPoint presentation template to gain internal sign-off from the institution. This deliverable also discusses how these project ideas align with the 17 Mission[2] targets and sub-targets, While the 17 targets provide a detailed and navigable structure, their usage has been discontinued since 2020. Consequently, we have reorganised the 17 targets under the more authoritative framework of the three objectives to enhance clarity and usability for educators. The deliverable highlights the improvements made for funded schools to progress through the ProBleu pipeline towards accreditation in the Network of European Blue Schools. Additionally, it explains how to integrate ProBleu teaching resources into the projects.

List of abbreviations

EMSEA - European Marine Science Educators Association

NEBS - Network of European Blue Schools

Deliverable package

ProBleu D2.3 consists of four related documents:

- 'ProBleu - D2.3 Adaptation and improvement of Blue School guidance' - this document
- 'Templates and Guidance to develop a project.' – PDF document
    - Project brainstorming worksheet – PDF document
    - Internal sign-off template – PPT presentation

[1] Templates and Guidance to develop a ProBleu project (https://docs.google.com/document/d/1RGgeT076l36gA1THQz_xNBsfR89HcNIj/edit#heading=h.gjdgxs)

[2] Mission Starfish 2030: Restore our Ocean and Waters by 2030 (https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/restore-our-ocean-and-waters_en)

1. Introduction

The Network of European Blue Schools (NEBS) is an initiative established under the EU4Ocean Coalition for Ocean Literacy to promote ocean literacy among schools. The NEBS strives to create a more ocean-conscious society by encouraging collaboration between schools and ocean professionals and facilitating the sharing of experiences and resources. The network requires further growth and support to achieve its objectives. The European Marine Science Educators' Association (EMSEA) promotes marine science education and fosters collaboration among teachers as a member of NEBS. ProBleu plays a part in expanding and supporting the NEBS by providing promotion, funding, teaching materials, and helping streamline the certification processes for schools. The ProBleu funding of school projects attracts a diverse range of new members, contributing to the enhancement of ocean and water literacy within school communities and aligning with the UN Sustainable Development Goals. Additionally, ProBleu aligns with Mission Starfish 2030 (the Mission): Restore our Ocean and Waters by 2030, set out by the European Commission, outlines five main objectives, including filling the knowledge and emotional gap, regenerating marine and freshwater ecosystems, achieving zero pollution, decarbonising the economy to protect the ocean, seas, and waters, and revamping governance. These objectives are further supported by 17 measurable targets (Lamy, 2021).

The **D2.2 Evaluation of the Network of European Blue Schools** involved reviewing Blue School projects to better understand the projects and the resources produced. There are approximately 400 schools that have been certified by the NEBS since the beginning of the programme. To conduct an informative review of the projects conducted by these schools, a selection of 67 projects was designated for review. This review focussed on several aspects of each project, such as the learning approaches they used, the degree of engagement and participation, impact, scalability, and the resources produced during the project. Assessing these criteria across projects allows us to identify strong and weak approaches, leading to recommendations for future focus areas. The D2.2 report served as a foundation for the D2.3 guidance, ensuring that the templates and recommendations are aligned with the actual needs and challenges faced by schools in developing Blue School projects.

Task 2.3 has created templates and guidance to help schools develop project ideas, secure relevant sign-off within their institution, and receive accreditation from the Network of European Blue Schools, which schools can select from and adapt, reducing the administrative burden of the application process. The guidance also highlights how best to incorporate the resources and teaching aids in the catalogue developed in WP3 and support schools as they progress through the ProBleu pipeline to accreditation in the Network of European Blue Schools.

This deliverable, **D2.3 Adaptation and improvement of Blue School guidance** is a report on the creation of "Templates and Guidance to develop projects". The Guidance is included in the deliverable package. It has been developed to assist teachers in the process of creating a project to apply for ProBleu funding to become a Blue School. The Guidance comprises several key elements aimed at facilitating the development of a comprehensive project:

- A **brainstorming worksheet** aligned with the ProBleu application
- A list of **project ideas** categorised based on the relevant subjects
- An **email template** for contacting external parties
- Ideas for **adapting inclusivity**
- A **PowerPoint presentation template** for obtaining institutional approval

The purpose of this report is to elaborate on the development of templates and guidelines and their practical utility for teachers. It outlines the process of generating project ideas for teachers to draw inspiration from, explaining how these project ideas align with the 17 Mission targets and sub-targets. In addition, the report discusses the shift from the 17 Mission targets to 3 main objectives, and how they simplify the comprehension of the Mission targets (section 3). Furthermore, it discusses the improvements made for funded schools to progress through the ProBleu pipeline towards accreditation in the Network of European Blue Schools (section 4).

2. Project Brainstorming Worksheet

To aid schools in joining the NEBS, a comprehensive worksheet has been designed. This worksheet aims to guide schools through the process of examining their local context, recognising challenges, and exploring potential partnerships to develop projects focusing on the ocean or water. The worksheet is specifically designed around the ProBleu 2nd call application and is part of the Guidance. It includes the core questions that will be consistently used throughout every call, making it a practical tool for filling out subsequent calls. A downloadable link to the worksheet is available in the Guidance and on the ProBleu website. The worksheet facilitates the brainstorming of project ideas tailored to the strengths and interests of the school community. It helps ensure that project activities align with the school's curriculum and Mission goals and encourages the development of interconnected activities with clear results.

1. Selecting a project topic

The first page of the worksheet helps schools analyse their local context, which is critical for identifying relevant project topics (McNally, 2020).

- Schools are encouraged to identify and examine local water-related problems or challenges. This approach ensures that the chosen project topics address issues pertinent to the community and are likely to resonate with students.
- Projects can align with the goals specified on the worksheet and the Mission 2030 objectives. The worksheet encourages schools to design projects that support multiple goals to maximise impact and relevance.
- Section 3 of the Guidance offers detailed advice on establishing partnerships with external organisations. It includes:
    - List of potential partners: A list of interested parties and actors that may be interested in collaborating.
    - Strategies for collaboration: Effective methods for engaging and collaborating with external entities to enhance project outcomes.

- Collaboration email template: An email template to facilitate initial contact with potential partners.

2. Selecting project activities

The second page of the worksheet assists teachers in brainstorming and selecting project activities that leverage the school's unique strengths and interests.

- It is crucial that project activities are well-aligned with student interests, the existing curriculum, and the school's mission objectives. This alignment helps ensure that the project is educationally valuable and engaging. The worksheet emphasises the importance of designing cross-curricular projects which can contribute to deeper subject knowledge and facilitate bridge-building between disciplines (Kerry, 2010).
- Section 6.1 of the Guidance includes an extensive list of project ideas categorised by subject area. This resource is designed to assist teachers in selecting and adapting ideas suitable for their students' age group and learning capabilities, whether at the primary or secondary level. The creation of project ideas is explained in detail in Section 3 of this deliverable.

3. Including all students

The third page of the worksheet is to consider designing projects that are inclusive and consider diverse learning needs and engagement strategies.

- The project should involve various forms of student interaction, such as field trips, research activities, and creative projects. This variety helps engage all students and caters to different learning styles (Lopez, 2008).
- Section 3.1 of the Guidance provides recommendations for incorporating open schooling methods, which are designed to enhance the engagement and participation of the whole school community, i.e. school staff, parents, local businesses, government bodies and NGOs.
- Teachers are encouraged to consider how their project can be long-lasting and integrated into the school's educational ecosystem. This means designing it to continue over time and incorporating it into the school's curriculum and daily activities.

4. Making a project plan

The fourth page of the worksheet focuses on creating a comprehensive project plan, including a timeline and budget.

- Teachers should establish a realistic timeline for the project's implementation and completion. This helps in managing the project efficiently and meeting deadlines.
- Schools need to estimate the financial resources required and outline a detailed budget. This step is crucial for securing funding and ensuring that the project is financially feasible.

The worksheet is a tool designed to help schools applying for ProBleu funding. It provides structured support across key areas, including project topic selection, activity planning, inclusivity, and project management, ensuring alignment with NEBS principles and fostering the development of impactful Blue School projects.

The use of the brainstorming worksheet is optional, and it is designed to aid those who might find it useful. To utilise the worksheet effectively, the teacher can download it from the Guidance and, if preferred, print it out. This sheet is meant for rough use and allows for organising potential ideas in a structured manner, covering all the relevant questions in the ProBleu application. In Section 2.1 of the Guidance, the brainstorming worksheet is aligned with the ProBleu application form to help applicants fill out the application to the best of their abilities.

3. Developing project ideas

This section outlines the process of developing project ideas as part of the Guidance. Table 1 is structured into three columns: The third column states the Mission sub-targets, which are grouped under larger targets aligned with the three official objectives of the EU Mission 'Restore Our Ocean and Waters'. These objectives guide the strategic efforts to manage and sustain marine and freshwater environments (Lamy, 2020). Initially in D2.1, there were three project ideas under each Mission sub-target, which were then organised into a more structured approach based on subject categories. The aim was to improve usability for teachers, allowing them to create comprehensive and impactful Blue School projects more effectively. It is important to note the transition from the original 17 goals articulated in the 'Mission Starfish 2030' proposal to the more succinct three objectives currently endorsed by EU missions. While the 17 goals provided a detailed and navigable structure, their usage has been discontinued since 2020. Consequently, we have reorganised the 17 goals under the more authoritative framework of the three objectives to enhance clarity and usability for educators. This restructuring aims to facilitate the development of comprehensive and impactful Blue School projects that align with the strategic objectives of the Mission.

Table 1 Alignment of Targets with Objectives of the EU Mission "Restore Our Ocean and Waters"

Objective Number	Target	Sub-target
	1: Each European is a citizen of our ocean and waters	1.1: Literacy and knowledge about the water system are compulsory elements in all science curricula in primary and secondary schools throughout the EU
		1.2: 50 percent of Europeans have participated in events organised by the pan-European ocean literacy coalition (EU4Ocean)

		1.3: At least 50 percent of the European blue workforce has been upskilled or re-skilled
Objective 1: Protect and Restore Marine and Freshwater Ecosystems and Biodiversity	2: Marine and freshwater observation is streamlined and accessible to all via a digital twin of the ocean and all waters	2.1: Global digital twin of all oceans and waters is operational
		2.2: Global marine and freshwater observation are streamlined: all data collected is pooled centrally and made accessible to all
		2.3: Global high-resolution ocean forecasting and regional ocean climate services are operational to support climate change adaptation at coastal scale
		2.4: The European seabed is fully and coherently mapped in high-resolution
		2.5: 50 percent of DNA of life in our ocean and waters is fully sequenced and publicly available
	3: 30% of EU waters are highly to fully protected	3.1: 30 percent of EU-waters are highly to fully protected, with concrete management plans and forming a network of MPAs co-managed by local communities
		3.2: Total water abstraction has decreased by 50 percent and groundwater abstraction has decreased by 20 percent
	4: Active regeneration of 20% of degraded habitats	4.1: 20 percent of degraded seabed habitats have been regenerated through removal of pressures, blue reforestation, ecological engineering, and full ecosystem-based management of local activities

		4.2: Ecosystem-based services and nature-based solutions have been scaled up by at least 20 percent to improve resilience from sea level rise, floods, and coastal erosion
	5: Denaturalise rivers and waters	5.1: 30 percent of Europe's rivers are de-dammed.
		5.2: 30 percent of surface water bodies suffering hydro-morphological pressures are restored
	6: End overfishing	6.1: The most destructive fishing practices like bottom trawling and other activities causing seabed habitat loss or degradation are phased out
		6.2: The level of incidental catches of protected and non-target species has decreased by 80 percent
		6.3: All catches are fully controlled at landing and all vessels above 12 metres are equipped with CCTV
	10: Underwater noise is regulated and reduced	10.1: Underwater acoustic emissions are reduced by at least 50 percent
		10.2: Noise impact mitigation measures have been defined in each European marine region and continental subaquatic environment
	7: Zero plastic litter generation	7.2: All single-use plastics are banned worldwide
		7.1: All plastics on the EU-market are reusable or recyclable

Objective 2: Prevent and Eliminate Pollution	8: Eutrophication of European seas and waters is halted	8.1: Losses of nutrients into the environment are reduced by at least 50 percent and the use of fertilisers is reduced by at least 20 percent
		8.2: Use and risk of chemical pesticides and the use of more hazardous pesticides is reduced by 50 percent
		8.3: 100 percent of urban wastewater is subject to tertiary (advanced) treatment
		8.4: All waste waters from ships operating in the European waters is delivered to treatment plants on land
	9: Zero spill	9.1: 50 percent of ships operating in the EU are granted the EU Green shipping label
		9.2: Waste and container loss from the shipping sector operating in the EU is reduced by at least 75 percent
		9.3: All ports have facilities to receive waste and wastewaters from ships
		9.4: The release of micro-pollutants (pesticides, pharmaceuticals, biocides, PFASes) into wastewater treatment plants has been reduced by 50 percent

Objective 3: Make the Sustainable Blue Economy Carbon-Neutral and Circular	11: Climate-neutral waterborne transport	11.1: 100 percent of propulsion engines of leisure boats, fishing vessels and ferries and other short-sea shipping are converted to non-fossil propulsion
		11.2: CO2 emissions from the shipping sector operating in the EU are reduced by 45 percent
		11.3: 50 percent of vessels older than 20 years are dismantled and recycled in Europe
		11.4: 100 percent of European ports are carbon-neutral and provide electricity at berths.
	12: Support the energy transition through renewable low-impact ocean energy	At least 35 percent of the EU energy mix s covered by clean, low-impact, enewable ocean energy (wind, wave, idal, thermal and salinity gradient energy)
	13: Zero-carbon aquaculture	13.1: The consumption of low trophic aquaculture (e.g. algae, shellfish, other invertebrates) from European waters, and seas has increased by 70 percent
	14: A thriving blue biotech	14.1: The EU is the world leader in blue biotech.
		14.2: The market value of Blue Biotech has reached 200 billion euros
	15: Climate-neutral blue tourism	15.1: 100 percent of marinas are carbon neutral and provide electricity at berth

		15.2: 50 percent of tourism resorts and accommodation are converted to low CO2 emission and low CO2 consumption
	16: An integrated and participatory EU system of ocean and water governance	16.1: A European Ocean and Water Agency is fully established
	17: EU leadership for effective global ocean governance	17.1: The BBNJ Treaty is enforced [UN]
		17.2: IUU fishing is eradicated globally [UN]
		17.3: International ban on all activities causing seabed habitat loss and degradation takes effect [UN]
		17.4: International UN agreement on protection and management of major rivers is concluded and all major rivers of the globe have an internationally supported management plan and national/international commission (EU sponsored set-up and is member of boards of key rivers linked to EU territories, such as Nile, Amazonia, Congo)
		17.5: New international standards for harbours, ports and shipping are enacted [IMO]
		17.6: All EU bilateral trade agreements condition market access to elimination of IUU fishing and fulfilment of international fisheries agreements

		17.7: All maritime surveillance activities of EU agencies and Member States are coordinated and joint surveillance operations in EU and international waters are carried out

Since the publication of D2.1, the ProBleu consortium has used the list of project ideas as the basis for discussion with teachers at conferences, events and school visits. Initial feedback from teachers in these ad-hoc discussions has suggested that, whilst the original project ideas from D2.1 provide a helpful starting point, they pose challenges regarding user understanding, curriculum integration, and resource identification. Teachers found it difficult to interpret the broad descriptions of the project ideas. To address these challenges:

- a new structure was developed, categorising project ideas based on subject areas
    - Music
    - Literature
    - Science
    - History
    - Art and design
    - Mathematics
    - Geography
    - Information and communications technology (ICT)
    - Ethics
    - Economics
    - Physical Education (PE)
    - Language
    - Drama
    - IT
- the project ideas were refined by Earthwatch and made more understandable for the teachers;
- the curriculum integration was made explicit;
- the resources needed were indicated.

This approach offers a more explicit focus for teachers, simplifies the integration of projects into the curriculum, and more effectively aligns the projects with the Mission. Project ideas were developed for each subject area at both primary and secondary school levels. These ideas, in section 3.2 of the Guidance, were created to be engaging, educational, and aligned with the curriculum.

In the boxes below, we provide three full examples from the list of project ideas in the Guidance.

The first example is to invite a marine or freshwater expert to the classroom. Bringing experts to the classroom enhances student learning and provides unique perspectives beyond the instructor's knowledge (Good, 2016) (Dong, 2011).

The second example is to take the students to the nearest freshwater body and use a FreshWater kit. In the review conducted in D2.2, there was a lack of freshwater examples among the existing Blue School projects, because the Network of Blue Schools, only recently expanded to include both marine and freshwater. The example of a project focussed on freshwater is provided to motivate teachers to develop projects around this environment.

The third example is to take the students to visit a water treatment plant. Learning beyond traditional classroom settings is crucial for students' overall development and their comprehension of the world. It offers real-world experiences that aid in making sense of society, nature, and the environment (Çengelci, 2013). Outdoor learning boosts motivation, creativity, and social connections, while also encouraging active, context-based learning that leads to deeper understanding and better retention of information (Bjorge, 2017).

Fishing symposium (target 6.3)

Students organise a symposium focusing on

- Exploring the role of fishing in providing food, livelihoods, and cultural heritage.
- Examining the use of technology to manage fishing practices and ensure sustainability.

Students invite experts to discuss. The need for fishing and its impact on marine ecosystems. The role of technology in sustainable fishing practices. Fostering ongoing discussions within the school community.

For primary schools

Activities

- Research different types of fishing methods
- Investigate the impact of fishing and overfishing on marine ecosystems and animal wellbeing
- Explore the role of technology in monitoring fish populations (e.g., satellite, sonar)
- Create informative posters or presentations to share findings with the school community
- Invite a marine biologist to speak to the class

Resources

- Access to the Internet for research
- Art materials for creating posters or displays

- Audio-visual equipment for presentations

Links to the ICT curriculum

- Digital literacy
- Communication

Cross-curricular links

- Science: Habitats, food chains, human impact on the environment
- Language: Communication, information retrieval

For secondary schools

Activities

- Research different ICT solutions used in the fishing industry (e.g., satellite tracking, underwater drones, artificial intelligence)
- Develop a symposium agenda and invite speakers
- Prepare questions for experts (e.g., marine biologists) and facilitate discussions
- Create promotional materials (e.g., posters, social media campaigns) to engage the school community
- Evaluate the symposium's impact and produce a final report

Resources

- Access to the Internet for research and communication
- Audio-visual equipment for the symposium
- Contact information for potential speakers
- Venue for the symposium
- Support from school staff (e.g., teachers, technicians)

Links to the ICT curriculum

- Digital literacy
- Problem-solving
- Communication

Cross-curricular links

- Geography: Global patterns of resource consumption, environmental challenges
- Science: Ecosystems, biodiversity, technology, and society
- Citizenship: Global citizenship, environmental awareness
- Business studies: Entrepreneurship, marketing, event management

Digital freshwater explorer (target 2.1)

Pupils will become water scientists, exploring their local water environment, and creating a digital representation of it. They will learn about water cycles, water quality, and the importance of protecting our water resources.

For primary schools

Activities

- **Water exploration:** Explore local water bodies (e.g., ponds, rivers, streams) and observe the water and its inhabitants.
- **Water testing:** Conduct simple water tests (e.g., temperature, clarity) and record observations.
- **Digital representation:** Create a simple map or model of the local water environment.
- **Water cycle art:** Design a visual representation of the water cycle.
- **Water conservation:** Discuss ways to save water and protect water resources.
- **Share findings:** Present their findings to the school community through presentations, posters, or displays.

Resources

- Simple water testing kits.
- Maps of the local area.
- Art materials (paper, crayons, markers).
- Digital devices (tablets, computers) for data recording and mapping.

Links to the science curriculum

- Water
- Living things
- Habitats

Cross-curricular links

- **Geography:** Maps, local environment.
- **Art and Design:** Creative expression, communication.

For secondary schools

Activities

- **Data collection:** Use citizen science tools (e.g., FreshWater Watch kits) to collect data on water quality parameters (temperature, pH, dissolved oxygen, etc.).

- **Data analysis:** Use software to analyse collected data, and identify trends and patterns.
- **Digital model creation:** Develop a simple digital model of the water body, incorporating collected data.
- **Environmental impact assessment:** Assess the impact of human activities on the water body.
- **Communication of findings:** Create presentations, reports, or interactive displays to share results with the school community.

Resources

- FreshWater Watch kits or similar water quality testing equipment.
- Data analysis software (e.g., spreadsheets, statistical software).
- Geographic Information Systems (GIS) software (optional).
- Digital devices (computers, tablets) for data collection and analysis.

Links to the science curriculum

- Biology
- Chemistry
- Physics

Cross-curricular links

- **Mathematics:** Data analysis, statistics, modelling.
- **Computer Science:** Data handling, programming (optional).
- **Geography:** Geographical information systems, environmental management.

Advanced Wastewater Treatment Innovations (target 8.3)

Pupils will learn about water cleaners, learning about how to make dirty water clean. They will explore different ways to clean water and understand the importance of clean water for plants and animals.

For primary schools

Activities

- **Water exploration:** Investigate different types of water (e.g., tap water, pond water).
- **Water filtration:** Create simple water filters using materials like sand, gravel, and cloth.
- **Water testing:** Observe the water before and after filtration.
- **Water conservation:** Discuss ways to save water and protect water resources.

- **Creative expression:** Design posters or stories about clean water.

Resources

- Different types of water samples.
- Materials for building water filters (e.g., bottles, sand, gravel, cloth).
- Magnifying glasses.
- Art materials (paper, crayons, markers).

Links to the science curriculum

- Living things
- Water
- Materials

Cross-curricular links

- **Geography:** Water cycle, pollution.
- **Art and Design:** Creative expression, communication.

For secondary schools

Activities

- Visit a wastewater treatment plant.
- **Treatment process design:** Research and select appropriate treatment technologies (e.g., membrane filtration, UV disinfection, advanced oxidation).
- **Treatment system construction:** Build a small-scale wastewater treatment system using available materials or equipment.
- **Water quality monitoring:** Collect and analyse water samples before and after treatment to assess the removal of contaminants.
- **Data analysis:** Use statistical methods to evaluate the effectiveness of the treatment system.
- **Communication of findings:** Create reports, presentations, or models to share results.

Resources

- Wastewater samples.
- Water quality testing kits.
- Materials for building a treatment system (e.g., pumps, filters, UV lamps).
- Laboratory equipment (e.g., pH metres, conductivity metres).
- Data recording sheets.
- Statistical software (optional).

Links to the science curriculum

- Chemistry
- Biology
- Physics

Cross-curricular links

- **Geography:** Water resources, pollution.
- **Mathematics:** Data analysis, statistics.
- **Design and Technology:** Design, engineering, problem-solving.

Similar approaches were adopted for the other subject areas, ensuring a comprehensive range of project ideas to suit different school contexts and capabilities.

The updated guidance enables teachers to easily identify projects that align with their subject expertise and teaching objectives. This structure also supports the seamless integration of projects into the curriculum. These ideas are intended to inspire teachers and provide a starting point for creating their project concepts. The structured approach simplifies the understanding and implementation of the project ideas for teachers. This guidance is created to be in general to fit most schools, but it can evolve based on the specific regions and needs of the school. Teachers are encouraged to modify and tailor the ideas to suit their specific needs and capabilities for project implementation in their school.

4. ProBleu pipeline towards accreditation

The process of becoming a member of the Network of European Blue Schools (NEBS) currently involves several steps, which can be streamlined to reduce the administrative burden on schools. The current accreditation process is as follows:

1. Account creation: Teachers must create a European Union login account to access the Network's online platform.
2. Application submission: Schools are required to complete an application detailing their school, proposed Blue School project, and alignment with NEBS's five compulsory criteria.
3. Review process: The application is reviewed, and modifications are suggested.
4. Project modification: Schools must make necessary adjustments to their project based on review feedback.
5. Membership granting: Upon completing the review and making the required changes, schools are granted membership in the Network.

Before September 2023, applications for NEBS membership were submitted through a dedicated online form on the Maritime Forum website, developed by the European Commission. It is anticipated that the new Maritime Forum website, launched in September

2023, will address these issues by September 2024. Until then, information on Blue Schools' projects is being stored on the Maritime Forum website, and applications are processed via Microsoft Forms. The dedicated application form automatically uploads projects to the website upon approval, allowing teachers to edit their project pages. However, this process was disrupted in September 2023 and is expected to be restored by September 2024. EMSEA does not manage the uploading or editing of Blue School projects on the Maritime Forum website.

This accreditation process (Figure 1), detailed in D2.1, currently involves filling out both the NEBS and ProBleu applications. Despite being structured, this dual-application process places significant administrative burdens on teachers.

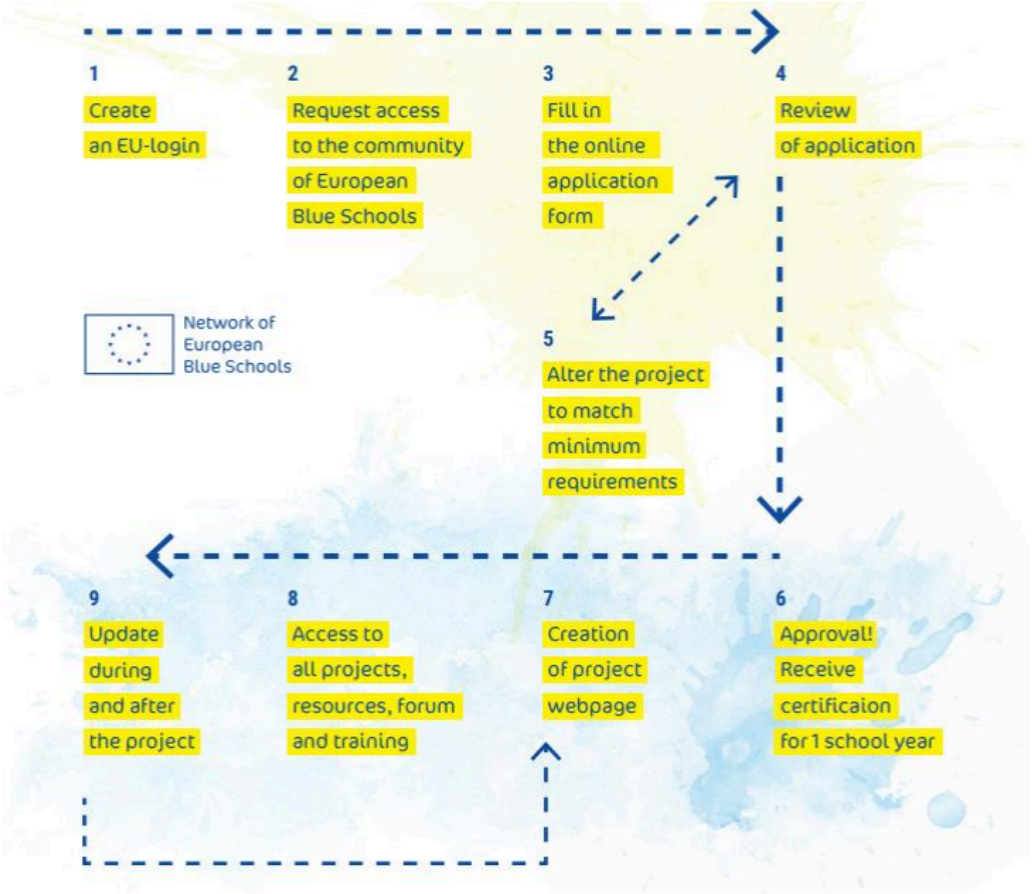

Figure 1 The Accreditation Process for Joining the Network of European Blue Schools

Recently, improvements aiming to streamline this process for schools receiving ProBleu funding have been introduced. The objective is to consolidate the process of application for ProBleu funding and membership in the NEBS into a single application form. The previous ProBleu application form (2nd call) covers almost all the asked in the NEBS application form. Therefore, completion of the ProBleu project will mean that the school will be eligible to be a Blue School. The schools funded by ProBleu from the 1st and 2nd calls will be contacted to get information about their school coordinates, as this is the only information not included in the

ProBleu application form required by EMSEA. In the 3rd ProBleu call, an additional question requesting the geographical coordinates of the school will be included in the application form. ProBleu-funded projects will also be required to sign consent forms in compliance with the terms of NEBS.

Discussions are ongoing between the ProBleu consortium and EMSEA to finalise a fast-tracking process for accreditation. The standardisation of the process of applying to become a member of Blue School networks is anticipated to provide significant benefits, including enhanced global dissemination of knowledge and best practices. UNESCO is collaborating with various Blue School networks, including NEBS, to develop a framework for a Global Blue Schools network. This **global network** aims to foster collaboration, knowledge sharing, and consistent standards and data collection. NEBS is exploring the possibility of integrating ProBleu-funded projects into its network automatically, although this has not yet been implemented.

5. Securing internal sign-off

Section 5 of the Guidance is designed to help teachers secure sign-off from their institute, guiding them through the often intricate process of obtaining institutional approval. By aligning with the priorities of decision-makers and crafting a persuasive case for their project, teachers can significantly enhance their chances of gaining the necessary support. The resource provides a structured approach to the sign-off process, equips teachers with tools and strategies for effectively communicating the project's value, and offers guidance on identifying and addressing potential challenges.

The teacher will have to engage with the school headteacher/principal or senior management members in their institute to address their concerns such as academic performance, school reputation, resource allocation, and legal and safety considerations. The template aims to address these concerns in a structured manner. It also delves into explaining what "ProBleu" does and its aims, aiding school officials in understanding the initiative's alignment with the school's mission and values.

The template outlines the benefits of joining the Network of European Blue Schools through ProBleu, emphasising advantages such as enhanced reputation, improved student outcomes, and increased community engagement, to gain support from the institution. The template sets up the teacher to explain project goals, objectives, and activities, to illustrate careful planning and consideration while spotlighting the positive impact on students' learning, the school's reputation, and the wider community, highlighting the project's value. In addition, demonstrating a commitment to inclusivity reflects the school's dedication to equity and accessibility, while providing mitigation strategies for potential challenges demonstrates a proactive approach to project management.

Presentation slides to clearly define the financial and resource requirements for the project will aid in securing the necessary support. By communicating these points, teachers can

construct a compelling case for their Blue School project and gain the backing of school management/officials.

6. Integrating online teaching resources

The projects reviewed in D2.2 reported numerous positive impacts, particularly in the areas of community engagement and ease of understanding and replication. A potential weak area was identified in knowledge-sharing transfer of resources, and narrative and communication. Given that both transferring resources and communication are often information technology-based tasks, the results suggest that some schools may be able to improve in these areas by adding online elements to their projects. Identifying this as a future focus is the first step to support and encourage teachers to carry out this important element of the project and share their results and resources online. It was also observed that resources shared online are rarely in the format of teaching material or courses. Encouraging this type of material to be shared will help grow a collection of reusable teaching resources on ocean and freshwater literacy.

In ProBleu WP3, the identified weaknesses are addressed through the creation of a catalogue of teaching resources focused on ocean and water literacy. These resources include slides, videos, simulations, documents, and interactive activities designed to support teachers in delivering comprehensive lessons on oceanography, water conservation, marine ecosystems, citizen science and related subjects. The goal of these teaching resources is to enrich the educational experience by sharing detailed and interactive content on ocean and water literacy. Teachers can use these resources to create engaging and informative lessons, enhancing students' understanding of complex topics related to oceans and water systems.

Teachers can align WP3 resources with specific curriculum goals by identifying how each resource supports the objectives of their ocean or water projects. The resources are organised based on themes such as marine, the water cycle, pollution, citizen science, conservation, and more to facilitate easy access and utilisation. The ProBleu catalogue can be used to assemble bespoke resource bundles that include materials created by project partners and tailored to lesson plans or thematic units.

These resources integrate simulations and virtual journeys to provide interactive and immersive learning experiences, such as virtual tours or simulations of oceanic processes. Teachers can upload their materials as well as tailor resources provided to meet specific classroom needs by editing and modifying slides and adapting documents, such as including slides on local water issues or integrating case studies pertinent to the region. They can also download necessary resources from the ProBleu catalogue for offline use, particularly in areas with unreliable internet connections. The catalogue will guide on accessing and utilising WP3 resources through tutorials, embedded videos, and support pages. To assess the impact of WP3 resources on meeting educational goals, engaging students, and the usability of the catalogue, feedback from teachers will be collected through workshops, and necessary modifications will be made based on the feedback to improve layout, content, translations, and instructional materials.

Teachers can share their resources back into the ProBleu catalogue to foster collaborative development and continuous improvement of educational materials. ProBleu will ensure that WP3 resources are accessible to all teachers by providing translations and user-friendly formats, offering clear instructions and intuitive navigation for those with limited technical skills.

The integration of WP3 teaching resources into ocean and water literacy projects involves a structured approach to aligning resources with curriculum goals, customising materials, facilitating access, and ensuring inclusivity. The identification of knowledge-sharing and communication as areas for improvement highlights the need for a stronger emphasis on online resource-sharing and collaboration.

7. Conclusion

The D2.3 report has created a comprehensive set of templates and Guidance to assist schools in developing Blue School projects. These resources are designed to streamline the application process, inspire project ideas, and support schools in aligning their initiatives with the objectives of the European Network of Blue Schools and Mission Starfish 2030. By providing structured frameworks for developing project proposals, securing institutional approval, and engaging with external parties, the templates offer valuable tools for schools to navigate the Blue School accreditation process. To ensure the ongoing impact of the D2.3 guidance, and further strengthen the NEBS:

- The guidance will be **disseminated** widely to schools and interested parties.
- **Feedback** will be gathered from teachers and schools using the guidance to identify areas for improvement and make necessary revisions. The guidance will be updated before each call to ensure its relevance throughout the project's duration and beyond its completion.
- **Ongoing support** will be provided to schools as they implement their Blue School projects.
- **Feedback** from teachers will be incorporated into the design of the teaching resources catalogue.
- **Finalise the fast-track of the accreditation process** to streamline the process for ProBleu schools to become members of NEBS.

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