ProBleu

Promoting ocean and water literacy in school communities

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Deliverable D2.5

Evaluation of the impact of ProBleu in the Network of European Blue Schools

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Contents

List of abbreviations

ICT: information and communications technology

IPAs: interested parties and actors

MICS: Measuring Impact of Citizen Science (European project)

NEBS: Network of European Blue Schools

PEDCR: plan for the exploitation, dissemination and communication of results

SDG: UN Sustainable Development Goal

Summary

This report examines how Blue School initiatives have been supported and improved through ProBleu's guidance and resources, and documents how these tools have helped schools progress towards the *Network of European Blue Schools* (NEBS) accreditation, while also identifying what is needed to sustain high-quality, inclusive projects over time. This is a formative, practitioner-focused evaluation of the ProBleu guidance and support package: it assesses how useful schools found the tools and how these shaped their path into the NEBS. Direct measurement of student learning outcomes through pre- and post-assessments is the objective of Deliverable 5.2, and project-wide impact measurement using the MICS tools is addressed in Deliverable 5.3; Deliverable 2.5 complements these by demonstrating whether the support itself worked for schools. The report is grounded in systematic feedback from ProBleu-funded schools on the full suite of support materials developed throughout the project, including the NEBS accreditation guidance, a project brainstorming worksheet, subject-specific project ideas, inclusivity guidance, an internal sign-off template, institutional roadmap support and a teaching resources catalogue.

Through an online survey, educators assessed how well these tools clarified the NEBS certification criteria, reduced administrative burden, and helped them connect local water

challenges to broader Mission Ocean objectives in ecosystem restoration, pollution reduction, and sustainable blue economies. Their insights highlight which elements are most effective in making the accreditation process transparent and achievable, and where additional examples, translation, or school-level facilitation would lower existing barriers.

This report also evaluates the extent to which ProBleu's orientation and promotion activities have broadened and diversified the Blue School community. By examining patterns in school responses, the report explores how guidance and templates have supported project design, inclusive student participation, and stronger engagement with school leadership, while also surfacing persistent challenges educators face across different national and institutional contexts. Attention is paid to the capacity-support needs of teachers and schools, echoing wider European efforts to ensure that ocean and water literacy innovation is not restricted but made easily accessible across all educational contexts.

Crucially, the findings from this evaluation can be used iteratively to adapt and improve the guidance package, aligning it more closely with teachers' constraints, preferred formats and real-world school processes. The report sets out concrete adjustments to key resources, such as clarifying accreditation steps, strengthening topic-selection support, enhancing inclusivity, and streamlining internal approval materials, so that schools can move more confidently and efficiently through the accreditation process. By openly disseminating these lessons and revised tools through the ProBleu website and channels, this report aims to leave a practical legacy: a tested, teacher-informed support system that can continue to expand and sustain the Network of European Blue Schools beyond the lifetime of the project. Set against its wider context, the project period coincided with a roughly tenfold increase in the number of accredited Blue Schools in the NEBS: the network-level growth that ProBleu's funding, guidance and accreditation support were designed to enable.

1. Introduction

1.1. Background

In the context of the EU Mission Ocean, there is growing recognition of the vital role schools play in fostering ocean and water literacy among the next generation (Costa & Faria, 2025). ProBleu supports this educational role by helping schools across the EU and associated countries develop and accredit impactful water-related projects, integrating them into curricula and aligning them with EU priorities for ecosystem restoration, pollution prevention, and a sustainable blue economy.

Educators often face significant barriers: limited time, complex administrative processes, varying levels of environmental expertise, and challenges in making water projects inclusive and relevant to local contexts (Freitas et al., 2024). These hurdles can restrict participation, leaving ocean and water literacy initiatives unevenly distributed across educational landscapes.

European policies have facilitated sustainability education, ocean and water literacy, and environmental awareness across schools and communities through the Digital Education Action Plan (2021–2027) (European Commission, 2020) and Mission Ocean, which both promote teacher training, practical guidance, and collaboration between schools, policy

makers, and other *interested parties and actors* (IPAs) to strengthen sustainability education (Wiarda et al., 2024). ProBleu aligns directly with these ambitions by equipping schools with resources that help overcome practical obstacles and support the long-term integration of water-focused innovation.

By providing a comprehensive range of guidance, templates, and evaluation tools, ProBleu enables educators to design projects that meet NEBS's five mandatory certification criteria (namely, (1) develop a project with interlinked activities, (2) produce a clear output, (3) involve all students, (4) collaborate with a local partner, (5) communicate to the community), all while addressing global and local water challenges. At its core, the project envisions students not just as learners but as active contributors to community resilience and ocean and water literacy goals. Central to this vision is the involvement of diverse IPAs: students as project leaders, teachers as facilitators, school leadership for institutional buy-in, parents and communities for local relevance, and partnering organisations for expertise and scaling.

This report synthesises feedback from funded schools on the full suite of ProBleu guidance, from accreditation support and brainstorming worksheets to inclusivity adaptations and leadership sign-off templates. Drawing on survey responses from schools across multiple EU and associated countries, it evaluates the tools' effectiveness, identifies areas for refinement, and proposes iterative improvements. These improvements represent a cyclical commitment to quality, in which real-world teacher feedback directly informs the ongoing evolution of resources, ensuring they remain responsive to the practical realities of school-based water projects and support broader, more sustainable uptake across the NEBS. Through this evaluation, the report not only completes the ProBleu quality assurance processes but also delivers an openly accessible legacy: optimised resources to accelerate NEBS growth and embed ocean and water education in diverse educational contexts. The actions outlined here foster sustainable change, ensuring every school can participate meaningfully in a transition towards more sustainability.

1.2. Purpose and structure

This report presents a comprehensive evaluation of the Blue School guidance and tools developed by ProBleu to support schools joining the Network of European Blue Schools. It collects and analyses feedback from funded schools on the usefulness, benefits, and areas for improvement of these materials, capturing insights on how effectively they clarify accreditation criteria, reduce administrative burdens, and enable water-related projects.

The report documents the adaptation and iterative improvement of these resources throughout the project lifetime, based on real-world educator experiences. It provides concrete recommendations for their future use and scaling, ensuring the guidance continues to support NEBS expansion, teacher capacity-strengthening, and ocean and water literacy across diverse EU and associated countries' educational contexts. These refined tools are openly disseminated to sustain impact beyond the project.

Following this introduction, the report proceeds as follows:

- Section 2 provides an overview of ProBleu guidance and resources.

- Section 3 outlines the evaluation methodology, including survey design, participant reach, and analysis approach.
- Section 4 presents key findings on the effectiveness of individual guidance tools and the overall support package.
- Section 5 presents the perceived benefits and weaknesses.
- Section 6 details adaptations made and proposed improvements to each resource.
- Section 7 offers recommendations for future implementation, scaling, and integration with NEBS and Mission Ocean activities.
- Section 8 presents the efforts related to disseminating the resources and making them easily accessible.

1.3. Scope and target audience

This report covers the full scope of key tools and guidance produced by ProBleu to support schools in developing and accrediting water-focused projects that align with the NEBS requirements. These include the project scope and accreditation guidance, practical templates (such as brainstorming worksheets and internal sign-off materials), subject-based project examples, citizen science and open schooling guidance, institutional roadmaps, inclusivity adaptations, and links to the teaching resources catalogue.

The primary target audiences are:

- Schools engaged in ProBleu, including both funded project schools and non-funded schools seeking accreditation
- Project partners and support organisations, such as ministries, NGOs, and educational networks, providing implementation assistance
- The wider Blue School community and ocean literacy IPAs, including educators, policy makers, and Mission Ocean coordinators looking to scale water literacy initiatives across EU and associated countries.

2. Overview of ProBleu guidance and resources

ProBleu provides a coherent set of guidance and resources to help schools design, implement and sustain meaningful Blue School projects that advance ocean and water literacy. Together, these materials form a practical pathway from initial idea to accredited project, supporting teachers at each stage of the journey. They aim to make the NEBS criteria transparent and achievable, while leaving space for schools to adapt projects to their own curricula, student groups and local water contexts.

The resources are organised into three complementary, interconnected clusters that together support schools across the full Blue School journey (Figure 1): planning and project design; implementation and best practice; and teaching aids and the resource catalogue:

- Planning and project design tools support schools in shaping their Blue School ideas, building internal consensus and navigating the NEBS process.
- Implementation support and best-practice guidance help teachers move from planning to action, offering concrete examples, citizen-science advice and partnership ideas.

- Finally, teaching aids and the resource catalogue connect schools to high-quality educational materials that can be directly used in lessons, projects and community activities.

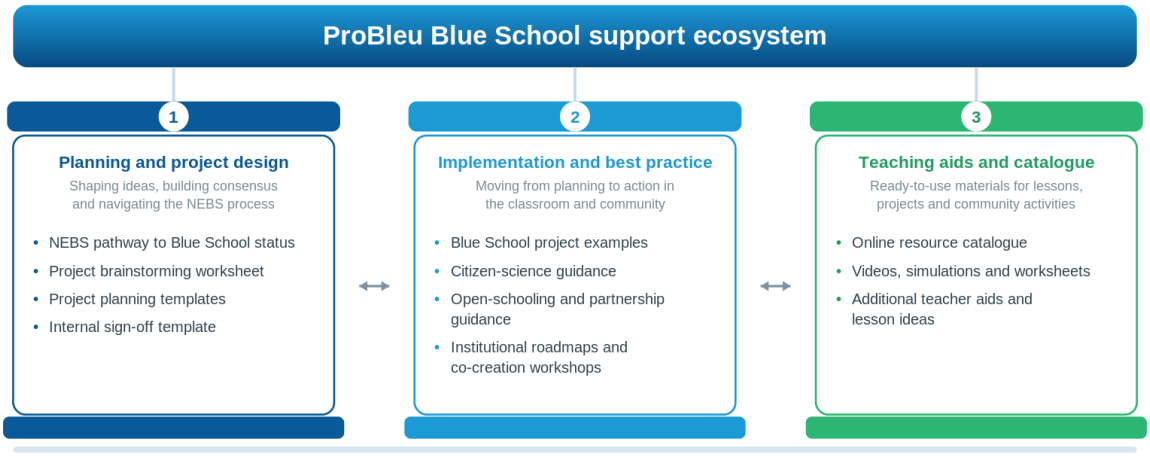

Figure 1. The three interconnected clusters of the ProBleu support ecosystem

The following subsection describes each cluster in more detail and explains how the various tools work together to form a flexible support package for schools at different stages of their Blue School journey. In the following (see also Table 1 and Figure 2), the most crucial conditions for supporting the transformation process in school settings are described.

2.1. Description of main guidance and resources

Table 1. Description of main guidance and resources

Cluster	Main tools/resources	Main purpose in the Blue School journey
Planning and project design	NEBS accreditation guidance; project brainstorming worksheet; project planning templates; internal sign-off template	Help schools understand NEBS criteria, identify water challenges, design projects and secure leadership support.
Implementation support and best-practice guidance	Examples of Blue School projects: citizen science guidance, open schooling, partnership guidance, institutional roadmaps, and co-creation materials	Support teachers to run projects in practice, collect and use data, work with partners and plan for long-term sustainability.
Teaching aids and resource catalogue	Online resource catalogue; classroom materials (videos, simulations, worksheets, tools)	Provide ready-to-use materials that bring ocean and water topics into lessons and enhance student engagement.

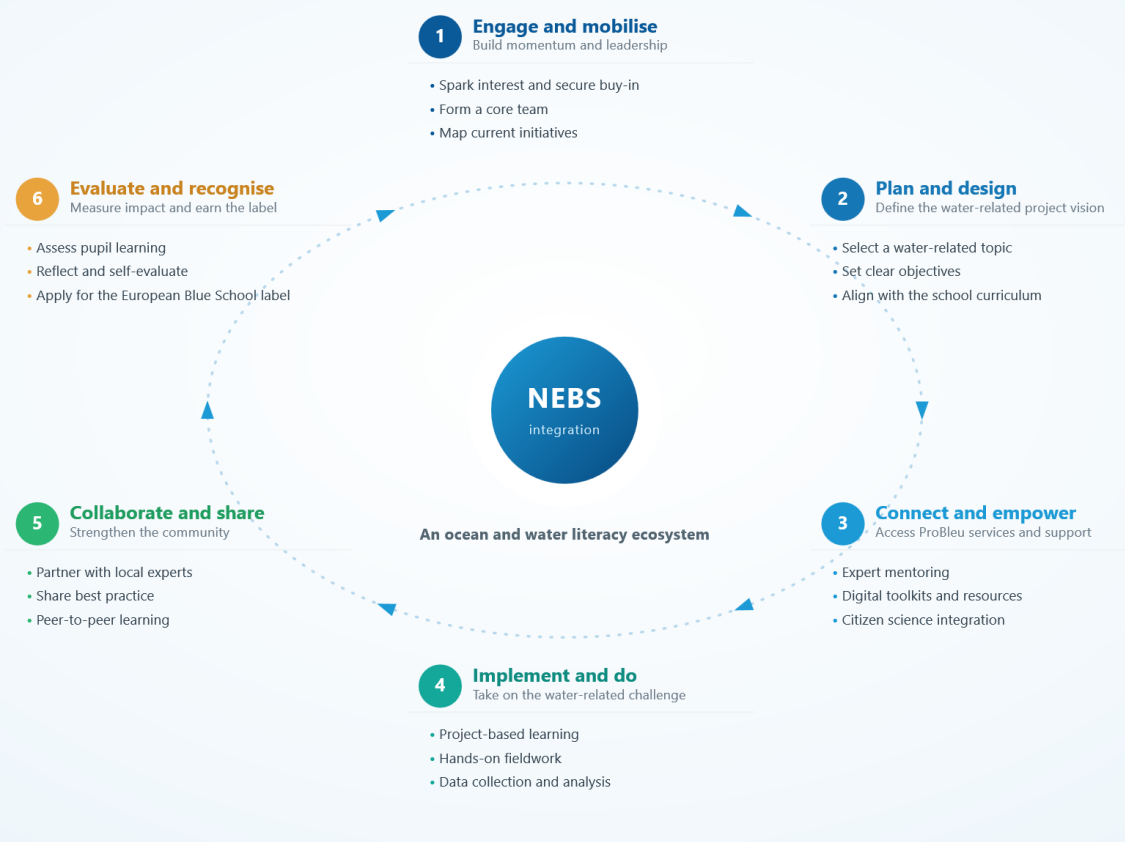

Figure 2. The ProBleu school transformation cycle and the path to Blue School status

ProBleu's guidance and resources have been developed as a coherent package to support schools through the full lifecycle of a Blue School project: from initial ideas through accreditation to long-term integration into school practice. Rather than offering isolated tools, the project has prioritised a structured pathway that combines planning support, implementation guidance and classroom-ready teaching aids. This approach reflects the realities of school life, where educators need both clarity on formal requirements and flexible materials that can be adapted to different curricula, ages and water contexts.

2.1.1. Planning and project design resources

At the heart of the planning support is the ProBleu pathway for Blue Schools, which provides a step-by-step guide to joining the NEBS. This pathway clarifies the actions schools need to take, from identifying a relevant water topic to aligning their project with the NEBS criteria and the objectives of the EU Mission "Restore our Ocean and Waters". It aims to reduce uncertainty around accreditation and to lower procedural barriers by making each stage of the journey explicit and manageable for teachers.

Building on this framework, ProBleu offers a set of templates and guidance to develop projects, refined through teacher feedback and iterative adaptation. The project brainstorming worksheet helps schools examine their local context, recognise water-related challenges and explore potential partnerships, while also prompting alignment with curriculum goals and Mission Ocean objectives. Project planning templates help educators structure their activities, timelines, and responsibilities, making it easier to move from a general idea to a concrete, implementable plan. An internal sign-off template complements these tools by providing a

ready-made format for teachers to present their project to school leadership, secure institutional approval and communicate the value of becoming or remaining a Blue School.

2.1.2. Implementation support and best-practice guidance

To help schools move from planning into action, ProBleu has assembled a set of implementation and best-practice resources. These include curated examples of Blue School projects that illustrate how different schools have translated NEBS criteria and Mission objectives into practice across a range of subjects and educational levels. By showcasing concrete project models, ProBleu enables teachers to see what successful implementation looks like in contexts like their own and to adapt ideas rather than start from scratch.

Recognising the importance of hands-on engagement, the project also provides citizen-science guidance, including recommendations on data collection, protocols and ethical considerations where relevant. This guidance is designed to support schools that choose to incorporate environmental monitoring or observational activities into their projects, helping them manage data in ways that are both pedagogically meaningful and scientifically robust. In parallel, open schooling and partnership guidance encourage schools to collaborate with families, local organisations and other IPAs, offering ideas for building relationships beyond the classroom and for framing projects as shared community efforts around water and ocean stewardship.

These implementation resources are complemented by institutional roadmaps and co-creation workshop materials, which support schools in thinking beyond a single project cycle. Using design-thinking approaches and collaborative planning tools, these materials help school teams consider how Blue School projects can be embedded in longer-term strategies, ensuring that gains in ocean and water literacy are sustained and expanded over time.

2.1.3. Teaching aids and resource catalogue

Alongside its planning and implementation guidance, ProBleu offers a set of teaching aids through its online resource catalogue of water and ocean literacy materials. This catalogue brings together videos, simulations, interactive tools, worksheets and other classroom resources that link directly to marine and freshwater topics. It is designed to help educators quickly find materials to integrate into lessons and projects, supporting both subject-specific knowledge and broader skills such as critical thinking, data literacy, and systems thinking.

The catalogue was developed by *Plymouth Marine Laboratory* (PML) as part of ProBleu and is intended as a dynamic, evolving resource where educators can also contribute their own materials and examples. In this way, it reinforces the wider ProBleu goal of building a community of practice around ocean and water literacy, where teachers learn from one another and from current scientific expertise. Additional teacher aids, including ready-to-use lesson ideas and links to external initiatives, further support schools in bringing water and ocean issues into everyday teaching, beyond the specific projects funded by ProBleu.

Together, these clusters of planning tools, implementation guidance and teaching resources form a practical ecosystem of support. They are designed not only to help schools achieve NEBS accreditation, but also to make ocean and water literacy a visible, engaging and sustainable part of school life across diverse contexts in the EU and associated countries.

2.2. Intended use and expected benefits

The ProBleu guidance and resources are designed to accompany schools throughout their full Blue School journey, from the initial idea for a project to its long-term integration into school life. They are meant to serve as a flexible pathway, helping teachers translate broad goals for ocean and water literacy into concrete, achievable steps. In doing so, the tools support schools in meeting the NEBS criteria while keeping the focus on their own learners, local environments, and educational priorities.

For planning, the resources are intended to structure a school's reflection on why and how it wants to engage with water and ocean themes. The brainstorming worksheet and project templates invite teachers and school leaders to consider their context, curriculum links, available time and partnerships, and to turn this analysis into a realistic project plan. Used together, these tools are expected to make the NEBS pathway more transparent, reduce uncertainty around the accreditation process and support internal agreement within the school on the project's objectives, roles and expected outcomes.

During implementation, the guidance and examples are meant to support teachers in "walking the walk" of ocean and water literacy in their classrooms and communities. The project examples, citizen-science guidance, and open schooling materials provide practical models for designing activities that actively involve students, collaborate with partners, and use water bodies or issues as learning contexts. The intention is to offer a repertoire of approaches that schools can adapt, helping them move from abstract intentions to concrete practice while maintaining educational quality and safety.

From a sustainability perspective, the institutional roadmaps, internal sign-off support and co-creation materials are designed to encourage schools to think beyond a one-off project. They can be used to discuss how Blue School activities are embedded in school development plans, how leadership and colleagues are engaged, and how project elements can be carried forward after initial funding or support ends. In this way, the tools aim to help schools build a culture of ongoing engagement with ocean and water topics, rather than treating them as a temporary add-on.

The expected benefits of this support package span several levels. For students, the tools are intended to create more coherent, engaging learning experiences around water and ocean issues, linking knowledge, skills and action. Teachers are expected to reduce preparation time, clarify requirements, and provide concrete ideas that can be adapted to different subjects and age groups. Schools and networks should contribute to more consistent, high-quality Blue School projects, making it easier to recognise and share good practice and to track progress towards Mission Ocean objectives and *UN Sustainable Development Goals* (SDGs).

In designing these resources, ProBleu assumes that schools operate in very diverse contexts: different countries and education systems, varying school sizes, varying levels of prior experience with project-based learning, and varying access to time, technology, and local partners. The guidance is therefore intended to be modular and adaptable. Schools with limited prior experience can rely more heavily on step-by-step templates and concrete examples, while those with established project cultures can use the tools more selectively, for instance, to refine

their NEBS applications or to strengthen citizen-science or community-engagement elements. The project also assumes that leadership support and teacher collaboration are critical; several resources are explicitly oriented towards dialogue within the school.

Overall, the intended use of the ProBleu guidance and resources is to make it easier for any interested school, regardless of country, size or starting point, to plan, implement and sustain meaningful Blue School projects, and to do so in a way that is both aligned with the NEBS and responsive to its own learners.

2.3. ProBleu contribution: strengthening the NEBS ecosystem

The ProBleu project has aimed at fostering a deep-rooted sense of responsibility toward the environment by bridging the gap between formal classroom education and real-world water conservation. By utilising open-schooling and citizen-science methodologies, ProBleu has tried to offer a vision of what can be achieved when schools move beyond theoretical learning to become active "agents of change" within the NEBS.

To achieve its aims, ProBleu has provided the financial and pedagogical support necessary for schools to meet the NEBS' rigorous certification criteria. It has been a collective endeavour to demonstrate how the water-sustainability challenge can be successfully implemented by:

- ✓ **Connecting students to water:** Pupils develop a sense of responsibility and awareness of their connection to the ocean and water, regardless of their geographical distance from water bodies.
- ✓ **Empowering teachers:** Through the ProBleu resource repository, educators have the support they need to increase ocean and water literacy through project-based learning (Kokotsaki et al., 2016).
- ✓ **Promoting citizen science:** Students engage in authentic research and data collection, transforming from passive learners into active contributors to the wider ocean and water literacy community.
- ✓ **Fostering open schooling:** ProBleu encourages schools to collaborate with local partners (e.g., ocean professionals, NGOs, and researchers) to solve real-world water-related challenges.
- ✓ **Building community impact:** By communicating project outputs to the local community, schools serve as "Blue Hubs" that drive environmental awareness at a societal level.

The ProBleu project has thus demonstrated that water-related education is integral to sustainability and environmental education. To address the diverse needs of schools, ranging from primary school to senior high, the project has provided a framework that aligns with the five NEBS thematic pillars: *Food from the ocean*, *Climate and ocean*, *Healthy and clean ocean*, *Biodiversity*, and *Maritime culture*.

2.3.1. Facilitating the journey to certification

ProBleu has aimed to develop a support mechanism that facilitates the NEBS certification process. It has defined a path in which funding is not an end in itself but a catalyst for schools

to join a sustainable, EU-wide network. This vision is based on a holistic view of the school as a synergistic system that:

- ✓ **creates interlinked activities,** supporting the development of projects with clear pedagogical outputs and multidisciplinary links;
- ✓ **supports professional learning communities,** enabling teachers to share experiences and best practices with other schools across the EU and associated countries;
- ✓ **enables real-world context,** challenging students to explore their local "blue" connections through citizen science and hands-on exploration;
- ✓ **allows equitable access,** providing the resources for schools across the EU and associated countries to achieve the NEBS certification.

The main stages of the ProBleu process focus on mobilising a critical mass of "blue agents" within the school system. By fostering interaction between schools, scientists, and local IPAs, ProBleu increases the "innovation spectrum" of the school environment. Through authoring tools, community-building services, and self-reflection mechanisms, schools are empowered to define their own path toward sustainability and, in turn, become permanent pillars of the Network of European Blue Schools.

3. Evaluation approach and data collection

3.1. Evaluation questions

The evaluation of ProBleu guidance and resources is structured around a set of core questions that reflect the project's aims and the needs of schools using these materials. These questions guide both the design of the feedback survey and the analysis of school responses.

3.1.1. Ease of use and clarity

- How easy are the resources and guidance to understand and use in different school contexts (e.g. country, school size, language, prior experience with projects)?
- Are instructions, formats and examples perceived as clear and practical for teachers and school leaders?

3.1.2. Support for project design and implementation

- To what extent do the resources help schools to design, plan and implement Blue School projects aligned with NEBS criteria and Mission Ocean objectives?
- Which elements (e.g., internal signoff and leadership support, brainstorming tools, templates, examples) are perceived as most helpful at different stages of the project lifecycle?

3.1.3. Perceived impact on school communities

- What impact do users perceive on students' interest, knowledge and engagement with ocean and water topics?

- What changes, if any, are reported in teachers' confidence and capacity to work with water-related themes?
- How do the resources influence relationships between schools and their wider communities (families, local organisations, partners)?

3.1.4. Gaps, weaknesses and improvement needs

- What gaps or weaknesses do users identify in the existing guidance and resources (e.g. missing examples, language issues, level of detail, format)?
- Are there specific challenges linked to contexts, such as curriculum constraints, time pressure, or access to local water environments?

3.1.5. Adaptation over time and the effectiveness of changes

- What adaptations to the resources were made in response to feedback from schools and partners?
- How effective are these changes perceived to be in improving usability, relevance and impact?
- What further modifications or additions do users recommend for future iterations or for wider scaling beyond the project?

These evaluation questions provide the framework for interpreting survey data, qualitative feedback and usage information, and they directly inform the analysis presented in the subsequent sections of this report.

3.2. Methods and instruments

The evaluation of ProBleu guidance and resources combines quantitative and qualitative methods to capture how the tools are used in practice, how educators perceive them, and the changes they support within schools. The approach is centred on an online survey for schools, complemented by feedback from co-creation activities and basic usage information for key tools and platforms. Together, these instruments provide a multi-layered picture of how the ProBleu support package functions across different contexts.

3.2.1. Online survey for schools

The survey instrument was structured around four analytical domains:

- usability of the guidance and resources;
- support for project design and implementation;
- perceived impact on students, teachers, and school–community relationships; and
- priorities for improvement and future scaling.

Building on the overall framework described above, the teacher survey was structured into thematic sections or areas, each linked to specific evaluation objectives and indicators of the usefulness and limitations of ProBleu guidance and resources (Table 2).

Table 2. ProBleu survey sections: focus and indicators

Survey section/area	Focus in ProBleu context	Key criteria/questions covered	Illustrative indicators generated
NEBS application guidance	Understanding and navigating the NEBS accreditation pathway with ProBleu support	Familiarity with NEBS process; clarity of the five criteria; effect of streamlined ProBleu–NEBS application; barriers to accreditation (Q1–5)	Proportion of schools familiar with NEBS; perceived clarity of criteria; reported reduction of administrative burden; types of barriers most frequently selected
Project brainstorming worksheet	Supporting early-stage project design and alignment with Mission Ocean and the curriculum	Use and depth of use of the worksheet; help in identifying water challenges, aligning with Mission Ocean, planning cross-curricular and inclusive activities; overall usefulness (Q6–11)	Share of schools using the worksheet; perceived usefulness for contextualisation and inclusivity; extent to which it shapes cross-curricular design
Subject-based project ideas	Inspiring and structuring water projects across subjects and educational levels	Awareness and use of subject-based ideas; subjects explored; appropriateness for age level; clarity of curriculum links and resource needs; overall usefulness (Q12–18)	Range of subjects activated; percentage finding ideas age-appropriate and curriculum-aligned; the degree to which ideas catalysed project development
External partnership support	Facilitating collaboration with scientists, NGOs and other external actors	Use of email template; existence and type of external partnerships; perceived helpfulness of partnership guidance and templates (Q19–23)	Frequency and diversity of external partners; reported contribution of guidance to initiating and sustaining collaborations
Inclusivity guidance and adaptations	Ensuring engagement of diverse learners in	Awareness and depth of review of inclusivity guidance; perceived usefulness and practicality; extent of engagement of diverse	Proportion of teachers reporting accessible design; inclusivity aspects most relevant (e.g. language, special educational needs,

	Blue School activities	learners; key inclusivity dimensions (Q24–28)	socio-economic); perceived feasibility of adaptations
Internal sign-off support and leadership concerns	Supporting institutional approval and responding to school leadership priorities	Use of internal sign-off presentation; support in communicating project value; coverage of leadership concerns; difficulty of approval; primary leadership concerns (Q29–33)	Ease/difficulty of approval; extent to which template addresses leadership needs; distribution of concerns (time/resources, admin burden, alignment)
Co-creation workshop and institutional roadmap	Building long-term, whole-school engagement through design-thinking and road mapping	Participation in co-creation workshops; effectiveness of design-thinking; links to Mission Ocean / SDGs; clarity and usefulness of roadmap; workshop format and duration (Q34–42)	Participation rate, perceived usefulness of roadmaps, the degree to which projects are connected to Mission Ocean and the SDGs, and the suitability of the online format
Integration of the teaching resources catalogue	Embedding ProBleu catalogue materials into the classroom and project practice	Familiarity with the catalogue; extent and type of resources used; perceived impact on project quality; ease of navigation (Q43–47)	Level of catalogue uptake, most-used resource types, perceived enhancement in project quality, and usability of the platform
Overall assessment of guidance and resources	Overall judgment of the ProBleu support package	Overall quality rating; perceived reduction of barriers; contribution to understanding Mission Ocean and to project sustainability; most/least valuable tools; improvement needs (Q48–54)	Overall satisfaction index; identification of high-value and low-value tools; priority areas for improvement (e.g. clarity, accessibility, examples)
Challenges and recommendations for NEBS support	Contextual constraints and expectations towards NEBS	Main challenges in developing/ implementing projects; preferred forms of additional NEBS support; likelihood of	Prevalence of key constraints (time, funding, curriculum, language, access to water bodies); demand for specific NEBS

		continued engagement with NEBS (Q55–57)	support modalities; future engagement intention
Open feedback	Nuanced reflections on strengths, gaps and future directions	Perceived benefits of guidance; most significant weaknesses and gaps; additional suggestions to better support future Blue Schools (Q58–60)	Qualitative themes on benefits and gaps; concrete proposals for adapting tools, formats, languages and support mechanisms

Items were designed to capture both tool-specific feedback and school-level interpretations, allowing the ProBleu team to examine how the same resources function in different national, institutional and curricular contexts. The main data collection instrument was an online survey sent to all funded ProBleu schools, with the option for other engaged schools and partners to respond as well. The questionnaire combined closed-ended items using Likert-type response scales (e.g., perceived ease of use, usefulness, and impact) with open-ended questions that invited respondents to describe concrete examples, challenges, and suggestions. This mixed-format design supported both quantitative analysis of patterns across all respondents and qualitative interpretation of how schools in different contexts experienced and adapted the ProBleu materials.

One section asked respondents which ProBleu resources they have used, including the NEBS accreditation guidance, project brainstorming worksheet, subject-based project ideas, inclusivity guidance, internal sign-off template, institutional roadmap materials and the ProBleu catalogue of teaching aids. Further sections invited participants to rate the ease of understanding and use of each resource, its perceived usefulness for planning and implementing Blue School projects, and any observed impact on students, teachers, and school–community relationships. The final part of the survey collected open-ended suggestions on gaps, weaknesses, and ideas for improvement, as well as reflections on how the tools could be adapted or scaled for future use.

3.2.2. Qualitative feedback from workshops and direct contact

Alongside the survey, the evaluation drew on qualitative insights gathered through co-creation workshops, institutional roadmap sessions and exchanges with project partners and schools. In the co-creation workshops, funded schools worked with the ProBleu team to design institutional roadmaps and action plans for maximising the impact of their Blue School projects, using design-thinking methods and collaborative tools. Notes from these sessions, together with follow-up conversations, provided rich examples of how schools interpret and apply the guidance in their own settings. This qualitative material was used to contextualise survey findings, illustrate specific challenges and successes, and trace how feedback from educators has informed the adaptation of templates and guidance over time.

3.2.3. Usage information for tools and resources

Where available, the evaluation also incorporated basic usage information for key tools and resources. This includes data such as the number of downloads or accesses of specific guidance documents and templates, participation in co-creation workshops, and visits or interactions with the teaching resources catalogue. While these metrics do not provide evidence of impact on their own, they help indicate which resources have been most widely adopted and in which phases of the project. Combined with survey and qualitative feedback, they support a more nuanced interpretation of the reach and relevance of the ProBleu guidance package across diverse school contexts.

3.3. Sample and participation

The evaluation drew on input from schools that are directly involved in using the ProBleu guidance and resources in real project settings. The sample was intentionally anchored in the community of schools that have engaged with the ProBleu pathway. This section describes who responded and when, to clarify the lens through which the findings in later sections should be interpreted.

The primary target group for the online survey consisted of schools funded under ProBleu to develop or extend Blue School projects. All 111 funded schools were invited to take part, with responses from a mix of primary and secondary institutions, and from schools at different stages of their Blue School journey (already accredited, in the process of applying, or preparing to join the Network of European Blue Schools). Within each responding school, the survey was typically completed by the teacher or small team most closely involved in the Blue School project and day-to-day use of the guidance and tools, ensuring that feedback reflects practical classroom and project experience rather than only management-level perspectives.

Data collection was timed to coincide with a mature phase of the ProBleu implementation, when schools have had sufficient opportunity to work with the guidance and resources in practice. Invitations to the survey were sent in February 2026, towards the end of the project period. This timing means that the sample reflects schools' experiences after, at least in some cases, one full cycle of planning and delivering Blue School activities with ProBleu support. As a result, the survey and accompanying qualitative feedback captured not only first impressions, but also more reflective judgements on the strengths and weaknesses of the guidance package across different national, institutional and educational contexts.

The 30 responding schools were spread across 21 countries in the EU and associated countries, indicating a broad geographic reach despite the modest sample size (Figure 3). Responses were most frequent from the Czech Republic, Kosovo and Latvia (three each), with the remaining countries represented by one or two schools.

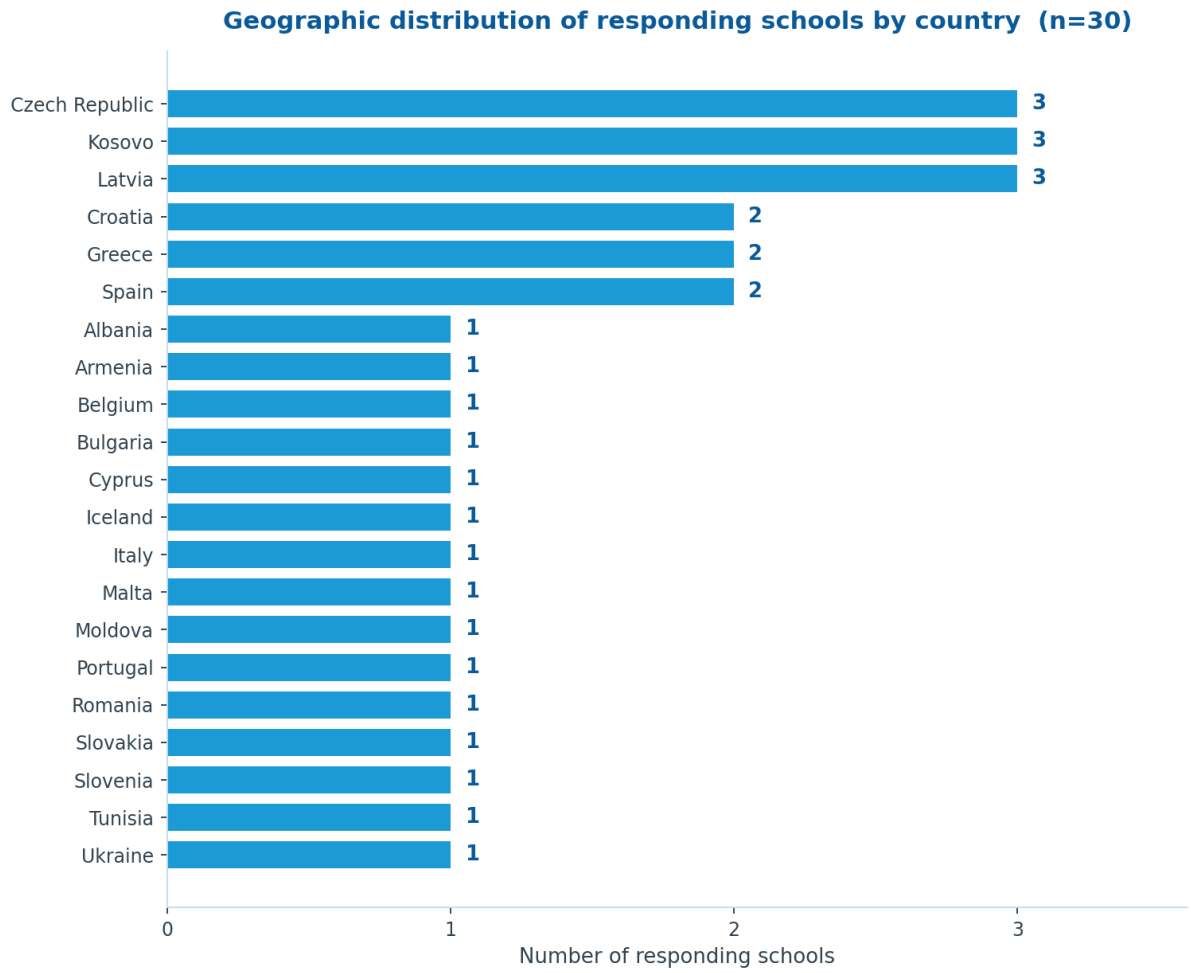

Figure 3. Geographic distribution of schools that responded to the survey by country

3.4. Limitations

The evidence presented in this report is shaped by several limitations in the data collection process that must be considered when interpreting the findings for ProBleu. The online survey was sent to all 111 funded schools, but only 30 submitted responses by the February 2026 deadline, resulting in a relatively low response rate. This means that the perspectives reported here reflect the experiences and views of a self-selected group of schools that were both sufficiently engaged with ProBleu and had the time and capacity to respond within the survey window.

Self-selection is likely to introduce a bias towards schools with higher levels of motivation, project momentum or internal support for Blue School activities. Schools facing more severe time pressures, administrative constraints, or leadership resistance may be under-represented in the data. In the open responses regarding school leadership concerns, some participating schools highlighted issues such as administrative burden and time and resource commitments, while others reported no significant concerns or pointed to more structural barriers (e.g., limitations in financial or technical capacity that required NGO intermediaries for grant management). The absence of responses from a substantial proportion of invited schools makes it impossible to know how widespread these different patterns of concern are across the full ProBleu cohort.

Language and contextual factors may also have influenced participation and response profiles. Although the survey aimed to use clear and accessible English and to reference familiar ProBleu tools, schools with limited English proficiency or with less access to digital infrastructure may have found it more challenging to complete a relatively detailed online questionnaire. Similarly, the survey was launched at a time when many schools were simultaneously implementing their ProBleu projects, engaging in other initiatives, or managing competing institutional demands. For some schools, this timing may have reduced their capacity to engage with an additional evaluative task, even if they were actively using ProBleu resources in practice.

These limitations have been explicitly considered in interpreting the results.

First, the analysis focused on identifying tendencies and illustrative patterns rather than claiming statistical representativeness across all funded schools. Where possible, findings are framed as insights into how a subset of schools experienced the guidance and resources, rather than definitive statements about the entire ProBleu population.

Second, greater weight is given to convergent signals that appear across multiple survey items (e.g. repeated references to time/resource constraints, administrative burden, or alignment with school priorities) and that resonate with qualitative feedback gathered through other project activities, such as workshops and bilateral exchanges.

Third, more idiosyncratic responses, such as a school unable to receive funding directly and therefore relying on an NGO partner for project implementation and financial management, are treated as critical case examples that highlight structural issues relevant to the future design of funding and support mechanisms, rather than as typical experiences.

Finally, the limitations themselves are used as part of the learning process: the modest response rate, the indications of time and administrative pressures, and the hints of language and capacity barriers all feed back into recommendations on how to streamline future guidance, tailor communication, diversify feedback channels, and reduce the burden of evaluation on schools. In this way, the data constraints do not invalidate the insights gained but rather situate them within a realistic understanding of the conditions under which Blue School projects are developed and supported.

4. Feedback on usefulness and ease of use

4.1. Tools used by schools

This section examines how far the different strands of ProBleu guidance were adopted in practice and how they supported schools at different points in the Blue School journey. In line with the overall evaluation approach, the aim is not simply to count usage but to understand which tools met schools' needs and where the support ecosystem shows gaps or underused potential. The resulting patterns offer both a summative picture of what has been mobilised and a formative signal for refining future guidance (Figure 6 and Table 3).

A clear backbone emerges. The tools tied to core NEBS processes and early-stage project design were the most widely used: the inclusivity guidance, the subject-based project ideas and the teaching resources catalogue were each actively used by half or more of responding

schools (67%, 57% and 50% respectively), and the NEBS application guidance and brainstorming worksheet were also widely recognised. These resources act as the "front door" of the ProBleu offer, translating an abstract mission into concrete starting points for classroom- and school-level action, a role reflected in their standing as the most valued tools (Figure 5), where the subject-based ideas (19 mentions), the catalogue (15) and the NEBS guidance (14) led the field.

Other resources show more selective uptake that reflects differences in school context, project maturity and partnership traditions. The email template for external partners and the internal sign-off template were the least used and least valued: only 13% and 27% of schools, respectively, applied them, and a third of schools were unaware of the email template altogether (Figure 6). The sign-off template is chiefly relevant where formal institutional approval is required, and partnership tools matter most to schools already building collaborations with scientists, NGOs, or local authorities, which points to an awareness gap as much as a relevance gap.

A similar pattern applies to the more strategic, whole-school resources. Participation in co-creation workshops and use of the institutional roadmap template were concentrated among schools with the time and leadership support to engage in design-thinking and a longer-term view of their Blue School work; for these schools, the roadmap helped connect projects to Mission Ocean and the relevant SDGs, whereas schools focused on a single project cycle engaged with them less (Figure 4).

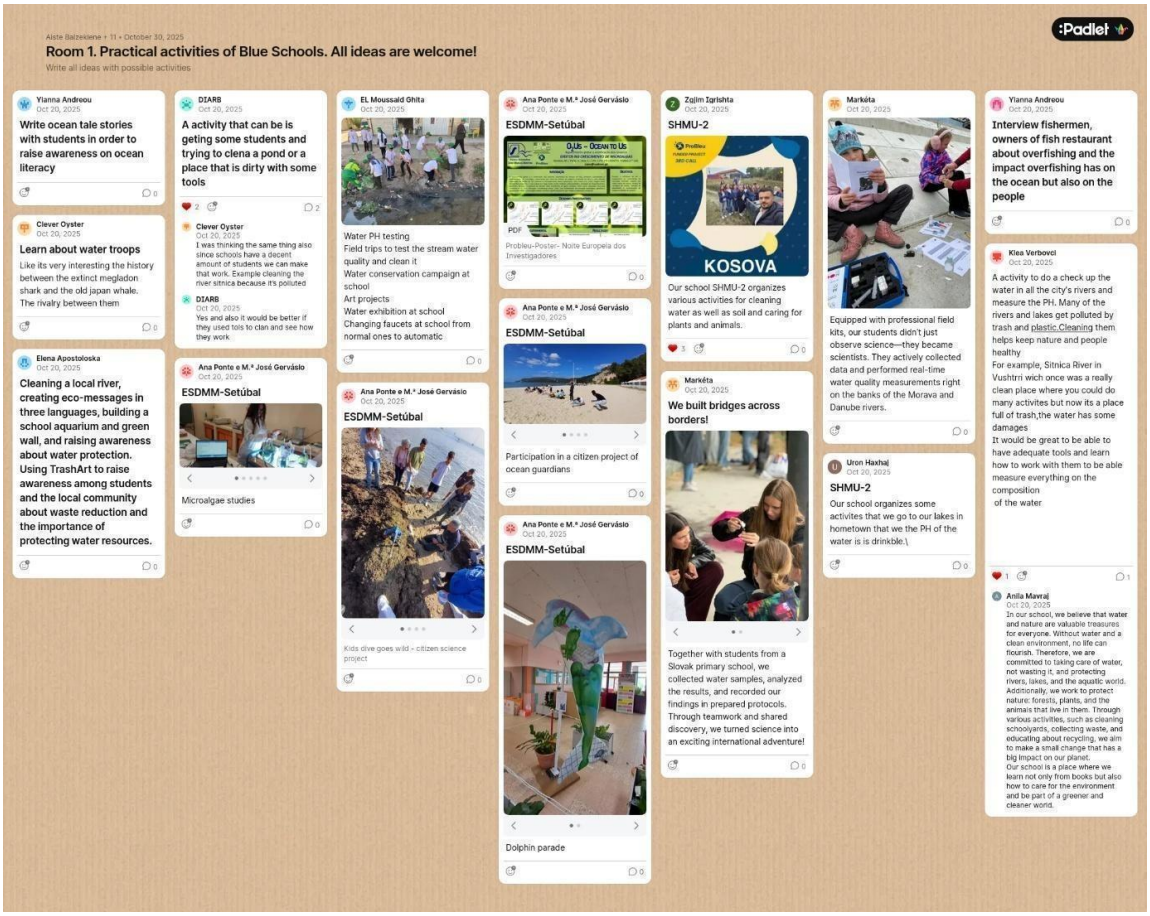

Figure 4. Co-creation workshop using a Miro board to develop institutional roadmaps for Blue School projects

Although the sample is too small for fine-grained statistical comparison, the responses suggest that school type, national context and prior experience with project-based or citizen-science work all shape these patterns. Schools embedded in wider networks were more likely to draw on partnership guidance, workshops and impact-oriented tools, while those working under tighter constraints prioritised resources that reduce administrative burden and help them get a project off the ground. Taken together, the evidence points to an ecology of support in which a common core (the NEBS guidance, brainstorming worksheet and subject-based ideas) underpins most schools, while the remaining tools act as optional, context-dependent extensions activated as schools' ambitions, capacities and partnerships evolve.

Figure 6 and Table 3 summarise this engagement, classifying each tool by whether schools used or applied it, reviewed or were aware of it only, were unaware of it, or found it not applicable.

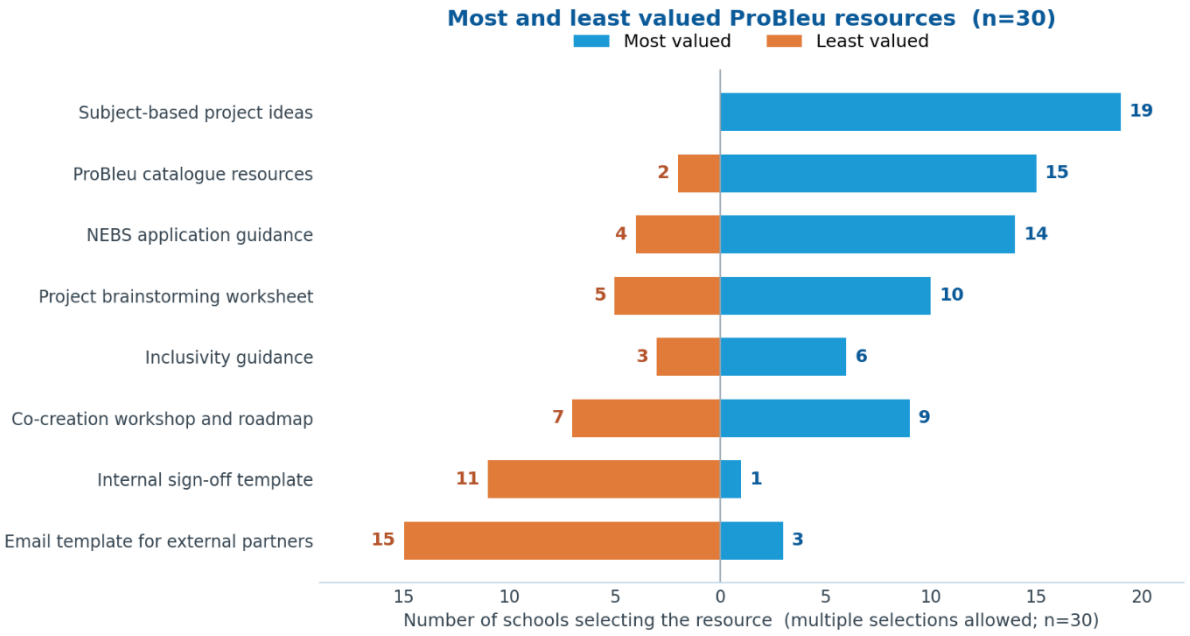

Figure 5. Most and least valued ProBleu resources

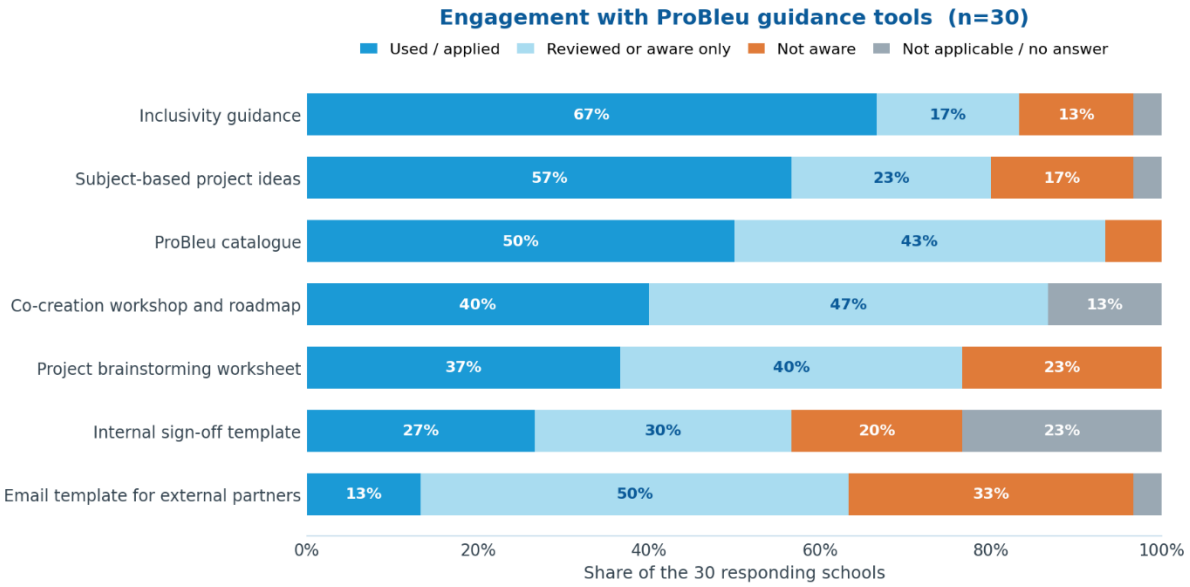

Figure 6. Engagement with ProBleu guidance tools

Table 3. Engagement with ProBleu guidance tools (n=30 responding schools)

Tool	Used/applied	Reviewed or aware only	Not aware	Not applicable / no answer
Inclusivity guidance	67%	17%	13%	3%
Subject-based project ideas	57%	23%	17%	3%
ProBleu teaching catalogue	50%	43%	7%	—
Co-creation workshop and roadmap	40%	47%	—	13%
Project brainstorming worksheet	37%	40%	23%	—
Internal sign-off template	27%	30%	20%	23%
Email template for external partners	13%	50%	33%	3%

Note: Percentages are based on responses from the 30 schools in this sample and should not be generalised to all 111 invited schools.

4.2. Perceived usefulness

Responding schools were broadly positive about the usefulness of the ProBleu guidance and resources. Overall quality was rated “Good” by 27 of the 30 respondents (90%; Figure 7), with 2 (7%) unsure and only 1 (3%) rating it “Poor”. This positive judgement carried through to the more specific dimensions captured in Figure 8: 80% of schools reported that the guidance had reduced barriers to participation, 67% that the streamlined application process had eased their administrative burden, and 87% that it had deepened their understanding of the EU Mission Ocean. It also coincided with strong forward commitment, with 90% of respondents saying they were likely to continue with the NEBS process beyond the funded period.

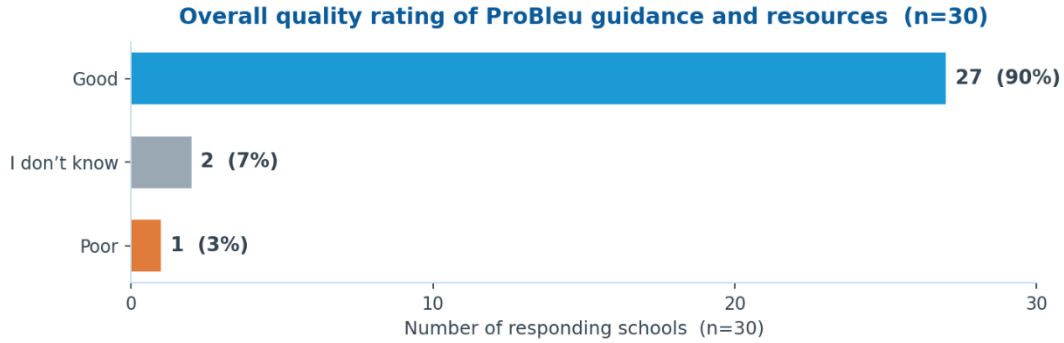

Figure 7. Overall quality rating of ProBleu guidance and resources

The guidance was intended to help schools in six areas: clarifying the NEBS accreditation criteria and streamlining the application process; identifying water challenges and aligning projects with Mission Ocean objectives; planning cross-curricular activities and ensuring inclusivity; securing internal approval and addressing leadership concerns; integrating subject-based project ideas into the curriculum; and supporting external partnerships and longer-term institutional planning. The resources most often singled out as valuable (the subject-based project ideas, the teaching resources catalogue and the NEBS application guidance (Figure 5)) were those that turn the abstract NEBS requirements into concrete, classroom-ready content. By contrast, the more procedural tools (the internal sign-off template and the email template for external partners) were the least valued, suggesting that schools drew the greatest value from design- and content-oriented support rather than from administrative aids.

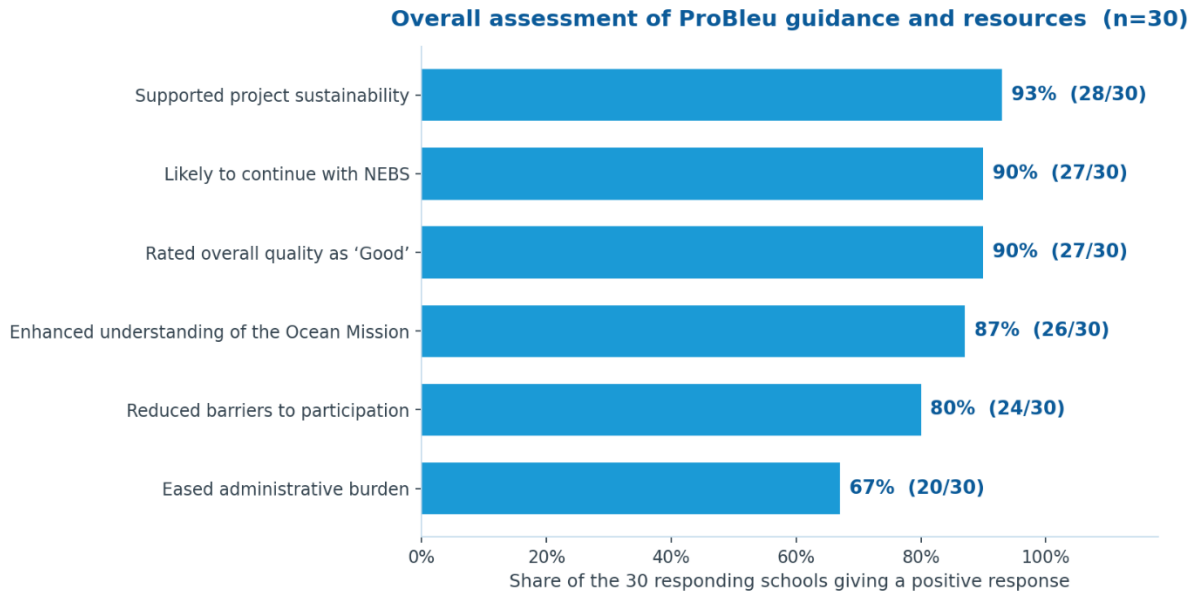

Figure 8. Overall assessment of ProBleu guidance. These indicators are drawn from different survey questions and response scales (a quality rating, three yes/no items and a likelihood question); each percentage therefore shows the share of the 30 respondents who selected the relevant positive option ('Good', 'Yes' or 'Likely') rather than a single common measure.

Because these figures come from a small, self-selected group of already-engaged schools, they should be read as indicative of how participating schools experienced the guidance rather than as a representative measure across all funded schools or as evidence of a causal effect.

4.3. Ease of understanding and application

Alongside the positive overall ratings, the survey collected structured and open-text feedback on where the ProBleu guidance materials were unclear, difficult to apply, or insufficiently adapted to respondents' contexts. This feedback is important for identifying practical barriers to uptake and for informing iterative improvements (Pedaste et al., 2015).

4.3.1. Clarity of NEBS criteria

77% of responding schools found the NEBS criteria clear. 3% found the criteria unclear, and 20% indicated they had not reviewed the criteria. The latter figure is particularly significant, as it may indicate that a proportion of participating schools engaged with ProBleu resources without fully engaging with the NEBS framework that the resources were designed to support.

4.3.2. Most-cited areas for improvement

When asked to identify where the guidance materials could be strengthened, respondents cited four themes with notable frequency: clarity of language and instructions (12), practical applicability (9), examples and case studies (8), and accessibility, including format and translation (8). A further 7 respondents called for more comprehensive content (Figure 9). Calls for clearer language, more practical examples, and improved accessibility (Figure 10) all point to a shared concern: the materials, while valued in principle, are not always accessible in practice.

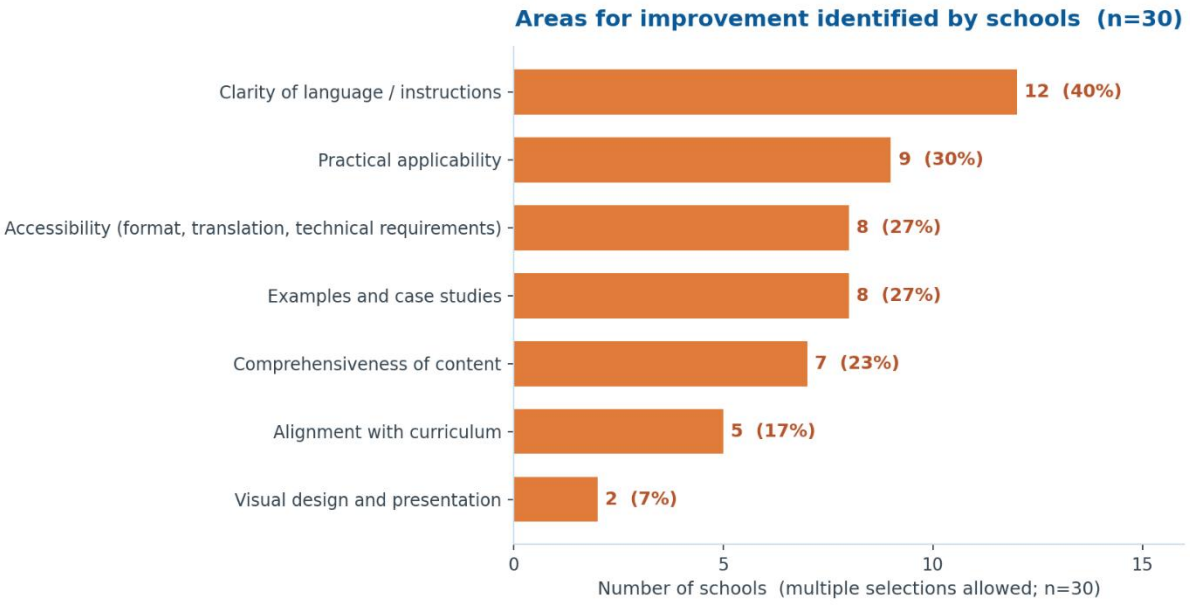

Figure 9. Areas for improvement identified by schools

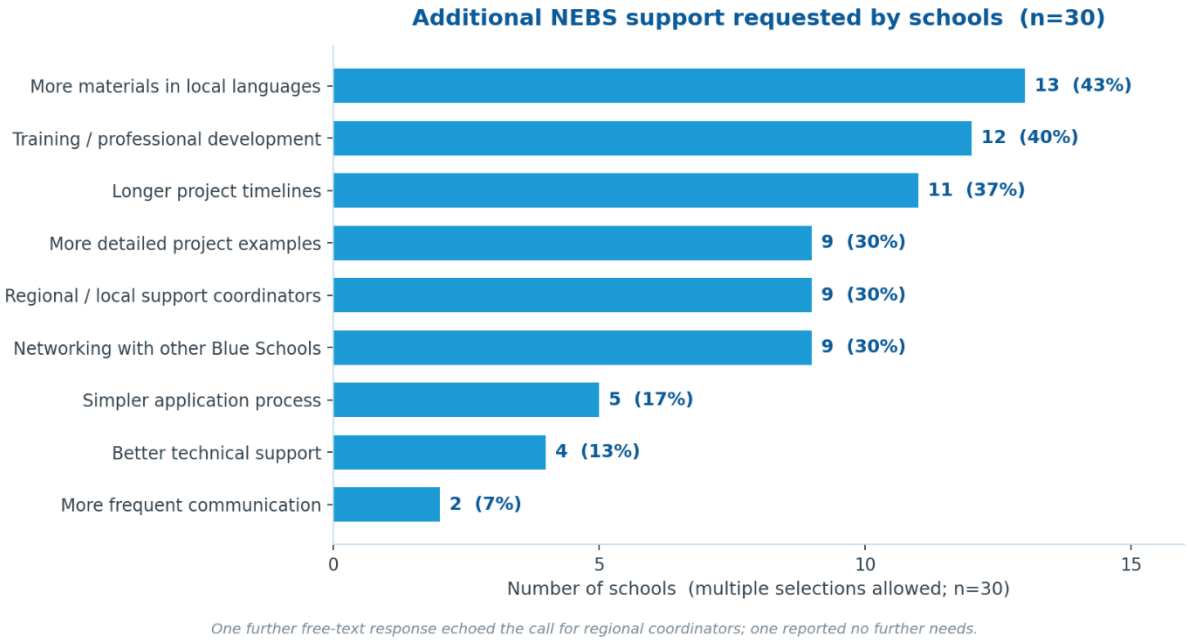

Figure 10. Additional NEBS-related support requested by schools

4.3.3. Main implementation challenges

Respondents also reported the challenges they encountered when attempting to use the ProBleu resources within their schools. Time constraints were by far the most cited challenge (16 respondents), followed by lack of ocean or water expertise (7), technical and IT challenges (6), limited financial resources (5), curriculum integration difficulties (5), language barriers (5), and lack of institutional support (5). Time pressure is a structural challenge that guidance materials alone cannot resolve, but several other challenges, particularly language barriers and a lack of subject expertise, are areas where resource design and support can make a difference.

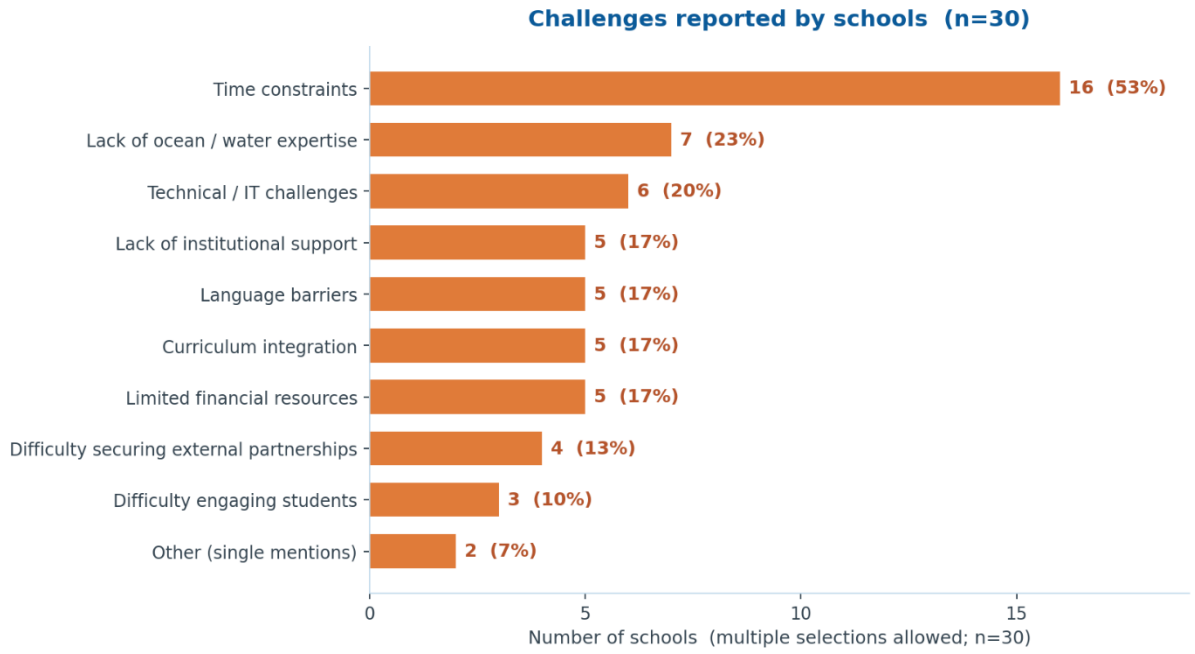

Figure 11. Challenges reported by schools (multiple selections allowed)

Open-text feedback on ease of use pointed to a recurring concern about how much information the materials contained and how formal or technical the language was. One respondent was explicit: "Perhaps the most important weakness is the length and abundance of information." Another called for materials more clearly scaffolded for non-specialist users, requesting "clearer step-by-step activity samples tailored specifically to younger learners" to make the resources more accessible in primary-school settings. A third pointed to the language itself, describing "the academic language" of some materials and asking for a "less academic level", feedback that aligns with the language-clarity improvement area cited by 12 respondents in the structured question.

Taken together, the ease-of-use feedback within this sample suggests that the ProBleu guidance materials are broadly valued but that their accessibility, in terms of length, language formality, degree of localisation, and translation, represents the primary area in which improvements would have the greatest impact on uptake and effective application

5. Perceived benefits and weaknesses

The evaluation of ProBleu guidance and resources indicates that the support package has been effective in helping schools navigate the early stages of Blue School projects and in strengthening understanding of the NEBS certification pathway. More broadly, the findings suggest that ProBleu has functioned not only as a set of practical tools but also as an enabling framework that helps translate the ambitions of ocean and water literacy into school-level action. This is consistent with prior research showing that sustainability and ocean-literacy initiatives are more likely to gain traction when schools are provided with clear, adaptable, and curriculum-linked materials rather than abstract policy objectives alone (Asikin et al., 2025).

At the same time, the results show that the impact is uneven across different aspects of implementation. Some resources appear to support immediate project design and communication very well, while others are more useful for sustaining participation, broadening

community engagement, and embedding the work into institutional practice over time. This pattern reflects the broader literature on school innovation, which suggests that practical uptake often depends on the degree to which tools reduce uncertainty, fit existing routines, and offer a manageable pathway for teachers already working under time constraints (Rogers, 2003).

5.1. Benefits for project design and implementation

A central strength of the ProBleu package is its support for project design. Survey feedback suggests that schools valued the clarity of the NEBS-related guidance, the brainstorming worksheet, the subject-based ideas, and the internal sign-off materials because these tools helped them move from a general interest in water literacy to a structured and actionable project plan. This finding aligns with research on project-based learning, which shows that educators are more likely to adopt interdisciplinary and inquiry-oriented approaches when they are provided with scaffolding that makes implementation feasible within the constraints of the curriculum (Kokotsaki et al., 2016; Condliffe et al., 2017).

The importance of this kind of scaffolding is especially evident in the NEBS context, where schools are asked to meet specific criteria while still designing projects that are locally meaningful and pedagogically coherent. ProBleu's resources appear to have helped reduce the perceived complexity of this process by breaking it down into smaller decisions: identifying a water-related issue, linking it to subject learning, involving students, and securing leadership approval. This is a valuable contribution because teacher workload and administrative burden are widely recognised barriers to the adoption of environmental and sustainability initiatives in schools (Borg et al., 2012; Freitas et al., 2024).

The support package also seems to have strengthened schools' capacity to align projects with broader policy frameworks such as Mission Ocean and the SDGs. In this sense, ProBleu is not merely facilitating compliance with NEBS criteria; it is helping schools frame their projects within a wider transformation agenda that links local action to EU priorities. This reflects the approach described in earlier ProBleu deliverables, which positioned Blue School development as part of a broader ecosystem of support, certification, and iterative improvement.

Among the 30 responding schools, a clear majority reported that the ProBleu guidance tools had made a tangible difference to the design and implementation quality of their projects. 80% stated that the guidance had reduced barriers to participation, and 67% reported that the streamlined application process had reduced the administrative burden on their school. While these proportions are based on a small, self-selected sample, they are consistent with ProBleu's design intent to provide structured, accessible pathways to NEBS accreditation for schools with limited prior experience with EU-funded initiatives.

The tools that most directly supported project design were the brainstorming worksheet, the subject-based project ideas, and the NEBS application guidance. Among the subset of responding schools that used the brainstorming worksheet, all raters reported that it helped them identify relevant water-related challenges in their context and align their proposed project activities with the Mission Ocean framework. This finding, though based on a small subset, suggests that the worksheet served its intended function for those who used it, a

finding which, when set alongside the 23% awareness gap reported in Section 4.1, underscores the importance of more proactive dissemination.

Open-text responses illustrate the design benefits in concrete terms. One respondent described how "the guidance helped structure our project more clearly and align it with NEBS criteria", indicating that the scaffolding function of the resources, providing a recognisable structure within which schools could situate their existing activities, was itself perceived as valuable, not merely the information content. Another observed that "the resources provided reliable scientific background, practical tools, and examples of good practice", pointing to the value of an integrated toolkit that combines content with process guidance. A third noted that "the guidance and resources helped me structure activities more effectively, ensure inclusivity, and improve the overall quality" of their programme, suggesting that the inclusivity guidance contributed to improvements in project design beyond procedural compliance.

These responses indicate that, for the schools in this sample that engaged substantively with the ProBleu toolkit, the materials supported not only administrative project management but also the intellectual and pedagogical quality of planned activities. This is a meaningful distinction: the guidance appears to have functioned not merely as a compliance aid but as a resource for improving project ambition and coherence.

5.2. Benefits for student learning and engagement

The findings also suggest that ProBleu has value as a learning framework, not only as an accreditation support system. Respondents indicated that the project tools helped students engage with water-related themes more actively and meaningfully, particularly when schools adopted hands-on, collaborative, or inquiry-based activities. This is consistent with the literature on ocean literacy and citizen science, which emphasises that learning is strengthened when students participate in real-world investigation, local observation, and reflection on environmental change (Ceccaroni et al., 2023)

The impact described by teachers is therefore both educational and procedural. When students contribute to project design, data collection, communication, or creative dissemination, the project becomes more than a one-off lesson or awareness campaign. It becomes a vehicle for developing scientific reasoning, environmental responsibility, teamwork, and communication skills. Such outcomes are strongly aligned with the wider research on experiential and place-based learning, which shows that relevance to local context increases engagement and supports deeper understanding (Medina-Rebollo et al., 2023)

However, the findings also suggest that the extent of student benefit depends heavily on how the project is implemented. Where schools used the tools as part of a broader pedagogical strategy, the learning benefits were more substantial. This distinction matters because it shows that the value of ProBleu lies not simply in the existence of resources, but in how they are taken up by schools and integrated into everyday practice.

The survey asked respondents to describe the effects of ProBleu-supported projects on student learning and engagement. Among responding schools, 87% reported that the guidance had enhanced their students' understanding of the EU Mission Ocean, and open-text

responses described effects that extended beyond curriculum knowledge to changes in student agency, motivation, and relationship with water environments.

The subjects most explored through ProBleu-supported activities were Science (cited by 16 respondents), Geography (10), and Art (10). This spread suggests that NEBS projects, as supported by ProBleu, were not confined to the natural sciences but were also integrated into the humanities and creative subjects, a breadth consistent with the holistic approach to water-related education promoted by the NEBS framework.

One respondent offered a particularly vivid description of student transformation: "By utilising the program's specialised tools, they transformed from passive observers into active Wetland Guardians." This formulation captures a qualitative shift from passive environmental awareness to active ecological stewardship, one that closely aligns with the aspirations of the EU Mission Ocean and the goals of the NEBS accreditation process. Another described how the guidance "inspired us to build an ambitious, hands-on learning experience around local rivers", highlighting how the ProBleu resources supported not only formal curriculum delivery but also place-based, experiential pedagogy.

Within this sample, the evidence suggests that ProBleu guidance and tools contributed to learning experiences that teachers perceived as genuinely transformative for students, deepening engagement with local water environments, broadening cross-curricular participation, and fostering a sense of environmental responsibility. These findings should be interpreted with caution, given the small sample size and the likelihood of response bias among more engaged schools, but they are nonetheless indicative of the NEBS framework's pedagogical potential when supported by well-designed guidance resources.

5.3. Benefits for school–community links and sustainability

One of the most important contributions of ProBleu is its support for school-community connection. The survey and workshop feedback indicate that the resources helped schools think beyond the classroom and consider partnerships with parents, local organisations, NGOs, and other community actors. This is significant because whole-school and community-linked approaches are repeatedly identified in the literature as essential for sustaining environmental education beyond isolated classroom activities (Mogren et al., 2019).

The co-creation workshop materials and institutional roadmap tools are particularly relevant here. These materials gave teachers a structured way to discuss project value with leadership, explain why the initiative mattered, and identify how the work could be embedded more permanently within the school. This reflects a wider evidence base suggesting that sustainability-oriented innovation in schools depends on leadership support, shared ownership, and a clear route from pilot activity to institutional practice.

The findings also point to the importance of ProBleu as a sustainability mechanism for NEBS itself. By reducing procedural barriers and helping schools organise projects more effectively, the programme supports broader participation in the Blue School network. In this way, ProBleu not only supports individual schools but also contributes to the growth, diversification, and resilience of the wider NEBS ecosystem. This interpretation is consistent with the earlier

ProBleu review of the NEBS, which identified the need for streamlined pathways, better dissemination, and stronger support for resource sharing and communication.

One of the central objectives of the NEBS framework is to embed schools within broader networks of environmental action, connecting them with local communities, scientific institutions, and civil society organisations. Within the sample, the survey evidence suggests that ProBleu-supported projects contributed to this goal. 93% of responding schools reported that the guidance had supported the long-term sustainability of their project activities, and 90% indicated they were likely to continue with the NEBS process beyond the current project cycle.

External partnerships were widespread among respondents. Schools reported collaborating with other schools (14 respondents), NGOs (13), local government (11), universities and other higher education institutions (10), and scientists and researchers (9). This distribution reflects a genuinely multi-actor approach to water-related education: partnerships spanned the public, academic, and civil society sectors and, in many cases, combined scientific expertise with local policy relevance. The frequency of partnerships with other schools also suggests a degree of horizontal knowledge exchange within the emerging European Blue Schools network.

Open-text responses offered additional perspective on how these partnerships developed and what they meant in practice. One respondent reflected on the value of connecting local school activities to wider scientific and institutional frameworks through the ProBleu materials, consistent with the high proportion citing NEBS application guidance and catalogue resources as most valuable. Another emphasised the importance of maintaining momentum beyond the initial project cycle, suggesting that ProBleu should "improve continuity once the initial project has ended" and exploring the possibility of "facilitating connections through Erasmus+" as a mechanism for sustaining inter-school collaboration beyond the immediate funding period. This suggestion reflects a broader aspiration within the responding schools: that the networks and partnerships developed through ProBleu participation should be nurtured and formalised rather than allowed to dissolve once project activities conclude.

The high proportion of schools in the sample indicating an intention to continue with the NEBS is among the most positive findings in the survey. It suggests that engagement with ProBleu and the NEBS, at least among the schools that responded, has created sufficient value and institutional momentum to sustain ongoing participation. Whether this pattern holds across the broader cohort of 111 invited schools, including the 81 schools that did not respond to this survey, cannot be determined from the available data.

5.4. Identified weaknesses and gaps

Despite the positive feedback, the analysis also highlights several limitations. The most recurring challenge concerns time, complexity, and communication burden. These issues are common in educational innovation initiatives and are well-documented in the literature on teachers' implementation of sustainability projects (Borg et al., 2012; Freitas et al., 2024). Teachers often value new tools but struggle to adopt them fully when they are not immediately integrated into existing structures or when they require additional time for documentation, adaptation, or dissemination.

Another recurring weakness is uneven uptake of the more outward-facing elements of the project, particularly communication, sharing, and wider dissemination. This mirrors the findings of the earlier NEBS review, in which knowledge sharing, open accessibility, and resource transfer were identified as weaker dimensions across many school projects. The implication is not that schools lack commitment, but that they may need more support in turning strong local practice into shareable, reusable outputs. This is particularly important if the ProBleu model is to contribute to broader knowledge exchange across the Blue School community.

The feedback also suggests that inclusivity and accessibility remain areas requiring attention. While the tools were generally viewed as helpful, some schools may need more adaptation to suit language differences, special educational needs, or uneven digital capacity. This aligns with research showing that educational innovation tools are more effective when they are designed for diverse contexts and when they actively anticipate barriers rather than treating them as exceptions (Meyer et al., 2014; CAST, 2018).

The open-text responses in the survey, combined with the structured feedback on areas for improvement and challenges, provide a frank picture of where the ProBleu guidance package fell short of the needs of the responding schools. Four interconnected themes emerge with sufficient consistency to warrant serious attention in future iterations of the toolkit.

5.4.1. Information overload and accessibility of materials

The most frequently cited concern across open-text responses was the sheer volume and density of information in the ProBleu resources. One respondent was direct: "The most important weakness is the length and abundance of information." This concern is consistent with the structured data: clarity of language and instructions was the most-cited area for improvement (12 respondents), and practical applicability was the second most-cited (9 respondents). Several respondents indicated that the academic register in some materials created a barrier, particularly for schools without staff experienced with EU project frameworks or ocean and water science. The implication is not that the content was wrong, but that its presentation was misaligned with the practical realities of busy school environments, where teachers are expected to act as both educators and project managers with limited preparation time.

5.4.2. Lack of clear onboarding and incomplete resource awareness

Multiple responses pointed to a structural gap in the way schools were introduced to the ProBleu toolkit. One respondent identified "the most significant gap" as "the lack of clear onboarding", describing a situation in which their school did not fully understand the NEBS framework, the available resources, or the application steps from the outset. This finding is reinforced by the awareness gaps identified in Section 4.1: 23% of responding schools were unaware of the brainstorming worksheet, 33% were unaware of the email template, and 20% were unaware of the sign-off template. A school unaware of the tools it might benefit from cannot make an informed choice about whether to use them. One respondent proposed a practical remedy: "Make sure schools understand all components from the start (NEBS,

resources, application steps, timeline)": a recommendation for a structured onboarding sequence rather than a repository of resources that schools must navigate on their own.

5.4.3. Need for age-specific, localised, and translated materials

Several respondents highlighted the insufficiency of generic, one-size-fits-all guidance. One called for "clearer step-by-step activity samples tailored specifically to younger learners", identifying an age-differentiation gap in the current toolkit. Another observed that "some scientific protocols were too generic for the unique biodiversity of our specific wetland", while a third cited "the overly general guidelines, the difficulty of adapting them to the local context" as a primary weakness. The demand for region-specific adaptation was echoed in a suggestion that ProBleu develop "region-specific modules that can be adapted to local ecosystems". Language accessibility was a related concern: 5 respondents cited language barriers as a main challenge, and the most frequently requested form of additional NEBS support was more materials in local languages (13 respondents): the single most requested support type in the survey, ahead of additional training, longer project timelines, and greater networking opportunities. One respondent articulated the need concisely: "Ready-to-use templates in multiple languages would enhance accessibility."

5.4.4. Communication barriers and administrative burden

A smaller but consistent set of responses flagged operational issues in communication and administration. One respondent noted that "not all emails concerning the project were sent directly to the project coordinator", creating a coordination failure that is difficult for schools to manage from their end. Others cited excessive paperwork and a mismatch between the flexibility needed to run a genuine school project and the administrative demands of NEBS compliance. Sixty-seven per cent of respondents reported that the streamlined application process reduced administrative burden (Section 5.1), which suggests that improvements in this area are both valued and achievable; but the open-text evidence indicates that administrative friction remains a real obstacle for a portion of participating schools. Taken together, these weaknesses do not undermine the broadly positive reception of the ProBleu toolkit, but they do identify clear, actionable priorities: simplifying and shortening key materials, implementing a structured onboarding process, developing localised and age-differentiated resources, and expanding multilingual provision.

6. Outcomes

Sections 5.2 and 5.3 reported the benefits schools perceived for student learning and for school–community links. This section views outcomes from a different angle: how far ProBleu met its stated objectives, how deeply and unevenly the ProBleu intervention took hold across schools, and what was achieved at the level of the wider Network. Outcomes are drawn from the survey of 30 schools, the co-creation workshops, and project-wide engagement data, and should be read as evidence of what engaged schools experienced rather than as a representative measure across all funded schools.

6.1. Outcomes against ProBleu's objectives

Against its central objective of strengthening ocean and water literacy, the evidence is positive among responding schools: 87% (26 of 30) reported an enhanced understanding of the EU Mission Ocean, and the supported projects reached well beyond the natural sciences, spanning Science (16 schools), Geography (10) and Art (10). Against the objective of building sustainable, networked participation, 93% (28 of 30) reported that the guidance supported the long-term sustainability of their activities, and 90% (27 of 30) intended to continue with the NEBS process beyond the funded period. On these measures, the project met its stated aims for the schools that engaged with it, while the modest, self-selected sample means the figures cannot be generalised to the full cohort of 111 funded schools.

6.2. Depth and variation of change

The outcomes were not uniform, and their depth is as informative as their direction. In a number of schools, ProBleu supported genuinely embedded, whole-school change: the project was connected to school development plans, leadership was actively involved, and Blue School activity was set up to continue beyond a single cycle. In others, engagement remained more of a one-off effort, where the tools were used to complete a project, but the wider pedagogical and institutional change was more limited (a pattern already visible in the student-learning findings in Section 5.2). The clearest differentiator was the involvement of school leadership: where coordinators and senior staff were engaged from the outset, often through an initial needs analysis, the project was both easier to embed and more likely to be sustained. This variation suggests that ProBleu's outcomes depend less on the resources themselves than on the institutional conditions in which they are introduced, with direct implications for how future support is targeted (Section 8).

6.3. Outcomes at the Network and system level

The clearest network-level signal is the growth of the NEBS itself. Over ProBleu's three years, the number of accredited Blue Schools in the Network grew roughly tenfold. This expansion cannot be attributed to ProBleu alone (it reflects the combined efforts of the European Commission, ProBleu’s sister projects, Mission Ocean and the wider Blue School community), but, as a dedicated mechanism that funded schools and guided them through accreditation, ProBleu was a direct contributor to it. The survey evidence in this report helps explain how: the schools it supported found the guidance usable and valuable, and the large majority intend to remain in the Network.

Beyond individual schools, ProBleu produced outcomes for the wider NEBS and for water-related education practice. Demand was substantial: more than 1,000 schools responded to the ProBleu open calls (D4.2), indicating scalable interest across the EU and associated countries well beyond the funded cohort. The project also strengthened a community of practice (through webinars, co-creation workshops, sister-project links (BlueLightS, SHORES), a WhatsApp group and peer exchange) and formally recognised participation by awarding certificates to teachers and students who completed co-creation workshops, providing a concrete professional-development outcome and an incentive for continued engagement. Workshop participation itself was a meaningful collaboration outcome, with around 40% of

schools taking part (27% fully and 13% partially). Taken together with the high continuation intent, these results indicate that ProBleu has contributed not only to individual projects but also to the growth, diversification, and resilience of the Network, and has generated a practical, evidence-based model relevant to curriculum, school networking, and open-schooling policy.

6.4. Outcomes by level

Table 4 summarises the main outcomes at each level, from the individual student to the wider community, together with the evidence supporting them.

Table 4. ProBleu outcomes by level, from the individual student to the wider community, with supporting evidence (n = 30)

Level	Main outcome	Indicator/evidence
Community	New, lasting community and cross-sector connections	Partnerships with other schools (14), NGOs (13), local government (11), universities (10) and scientists (9)
School / strategy	Embedding in the school strategy where leadership engaged	Leadership involvement the key differentiator of sustained vs one-off uptake
Classroom	More interactive, relevant lessons with greater teacher confidence	Catalogue used by 50%; 67% used the inclusivity guidance
Teacher	Professional development and recognition	Workshop participation ~40%; certificates awarded to participating teachers
Student	Increased engagement and cross-curricular participation	87% enhanced Mission Ocean understanding; reach across Science, Geography and Art

7. Adaptation and iterative improvement

The ProBleu project has not treated its guidance as fixed; instead, it has used school feedback to refine and improve the support package over time, revising the material after each call for school projects. This adaptive approach is one of the strongest features of the project because it reflects a practical understanding of how educational innovation works: tools are adopted, tested, revised, and reintroduced in response to user evidence.

7.1. Process of adaptation

The main pattern evident in the feedback is that ProBleu resources became more effective when they were simplified, clarified, and better aligned with school realities. This was especially visible in the evolution of the NEBS application guidance, the brainstorming worksheets, the inclusivity materials, and the internal sign-off tools. Teachers appeared to value resources that reduced ambiguity and gave them a concrete path from idea to action. This is consistent with the literature on implementation support, which shows that educators are more likely to adopt innovations when they can see a clear sequence of steps and when the process is framed as manageable (Rogers, 2003; Durlak & DuPre, 2008).

The co-creation workshops also played an important role in this iterative process. By giving schools a chance to co-design institutional roadmaps and reflect on their own constraints, the project moved beyond one-way dissemination, creating a feedback loop between practice and

improvement. This aligns with research on collaborative design and participatory educational change, in which co-creation is understood as a mechanism to increase ownership, feasibility, and long-term uptake (Voogt et al., 2015; Penuel et al., 2011).

The development of ProBleu guidance and resources for schools was not conceived as a one-time production exercise but as an iterative process in which feedback from schools, partners, and evaluative activities was systematically gathered and used to refine outputs across the project lifetime. This section describes the principal feedback mechanisms deployed within WP2 and how they contributed to successive revisions of guidance and resources.

The co-creation workshops, conducted using a design-thinking methodology, formed the earliest and most structured feedback channel. Approximately 40% of ProBleu schools engaged with these workshops, 27% fully and 13% partially. These sessions brought together teachers, school coordinators, and project partners to collaboratively explore how guidance materials could best serve classroom realities, surfacing practical needs around simplicity, visual clarity, and subject-level applicability at a stage when core outputs could still be substantially shaped. Although 40% of schools had planned to attend but ultimately did not, the workshops nonetheless provided a meaningful sample of views from across the network at an early formative stage. 20% of ProBleu schools did not engage in the co-creation workshops at all.

Exchanges between the WP2 team and partner organisations, including ICM-CSIC, Kaunas University of Technology, INOVA+, Plymouth Marine Laboratory, and the Ocean Conservation Trust, also contributed continuous informal feedback. Partners working directly with schools in their respective national contexts provided ground-level observations about how guidance landed in different educational systems, flagging language issues, mismatches with local bureaucratic procedures, and gaps in subject-level coverage.

Internal WP2 review cycles, conducted between major deliverables and milestones, provided an additional mechanism for self-assessment. These reviews compared the intended purpose of each resource with emerging evidence of actual use, enabling targeted revisions rather than wholesale redesigns. The team's response to feedback gathered at each stage was incorporated into subsequent deliverables, resulting in an iterative development process throughout the project's three-year lifespan. This approach reflects a commitment to responsive co-design, which is increasingly recognised as a condition for effective educational resource development (McKenney & Reeves, 2019; Voogt et al., 2015).

7.2. Examples of changes made

The iterative process described above produced a series of tangible revisions to WP2 outputs. The following examples illustrate the kinds of adaptations made in response to feedback from schools and partners. It should be acknowledged that systematic before-and-after documentation of each revision was not consistently captured throughout the project period; strengthening this documentation practice would be a valuable improvement for future evaluations of similar deliverables.

7.2.1. Simplification of the NEBS accreditation guidance

Feedback from the co-creation workshops and early school engagement consistently identified complexity and information density as barriers to effective use of the NEBS application guidance. In response, the NEBS accreditation guidance was revised to use plain-language explanations, reduce the length of explanatory sections, and present procedural steps in a more sequential order, with clearer signposting between stages. The survey finding that 90% of respondents were familiar with the NEBS process and 77% found the criteria clear suggests that these revisions contributed to improved accessibility over time.

7.2.2. Addition of inclusivity prompts to the brainstorming worksheet

Engagement with schools across diverse contexts, spanning different national systems, student demographics, and physical settings, highlighted that the original brainstorming worksheet did not adequately prompt educators to consider accessibility and equitable participation in project design. Partner feedback, particularly from organisations working with schools serving students with additional needs, led to the integration of explicit inclusivity prompts into the worksheet. Respondents' survey comments noted that guidance helped them "ensure inclusivity" and "improve the overall quality" of activities, and the finding that 67% of respondents reviewed the inclusivity guidance, 30% thoroughly, indicates that this dimension of the materials was actively engaged with.

7.2.3. Streamlining the combined ProBleu–NEBS application process

Administrative burden was identified early in the project as a deterrent, particularly for schools operating without dedicated project management staff. Working with NEBS administrators and partner organisations, the WP2 team revised the application pathway to reduce duplication between ProBleu reporting requirements and the NEBS accreditation process, consolidating documentation where possible and providing pre-filled template elements. The February 2026 survey found that 67% of respondents confirmed that this streamlining had reduced their administrative burden, a meaningful validation of the intervention, though it also implies that approximately one-third of schools did not perceive a reduction, indicating scope for further refinement.

7.2.4. Expansion of subject-based project ideas

Initial versions of the subject-based project ideas resource were weighted towards the natural sciences, reflecting the project's focus on ocean and water literacy. However, feedback from teachers working in humanities, arts, and interdisciplinary settings indicated that the resource did not sufficiently support engagement from across the school curriculum. In response, the resource was expanded to include project ideas spanning Geography, Art and Design, Language and Literacy, Social Studies, Mathematics, and Science. The survey confirmed that subject-based ideas were the most frequently cited, most valuable resource, receiving 19 nominations, the highest of any tool. Science, Geography, and Art were identified as the most used subject areas, indicating that the expanded coverage reflected genuine cross-curricular need.

7.2.5. Improvements to the teaching resources catalogue navigation

User feedback gathered through workshops and partner exchanges indicated that the teaching resources catalogue, while well-populated, was difficult to navigate efficiently, particularly for teachers with limited time who needed to quickly locate specific types of materials. Revisions were made to improve categorisation, tagging, and the presentation of search and filter functions. The survey found that 77% of respondents found the catalogue easy to navigate, and that 50% reported integrating its resources into their teaching, with 20% doing so extensively. This provides evidence that the usability improvements made a positive difference. The catalogue was also the second most frequently cited most valuable resource, with 15 nominations, reinforcing its centrality to the guidance suite.

These examples illustrate that the iterative development process was responsive to real feedback and resulted in measurable improvements. They are not exhaustive of the revisions made, and the team acknowledges that a more formal change-log process would enable more complete documentation of this trajectory in future projects.

Taken together, these changes show that the ProBleu approach has matured from a simple guidance package into a more comprehensive support ecosystem. That is important because the literature on school-based environmental innovation consistently shows that uptake improves when support materials are not used in isolation but are connected to leadership, teacher collaboration, community partnerships, and follow-up support (Fullan, 2007; Mogren et al., 2019).

7.3. Remaining improvement needs

Even with these adaptations, several needs remain. The most obvious need is for more concise, visually clear, and multilingual resources. Another is the need for better support around communication and resource sharing, so that schools can more easily turn their projects into public-facing examples that others can learn from. A further need is for stronger guidance on inclusion, especially for schools working with heterogeneous student groups or in contexts where digital access is uneven.

These gaps should be understood as the normal limits of any implementation process that aims to operate across the educational systems of the EU and associated countries. The challenge for future versions of ProBleu is to preserve the flexibility valued by schools while further reducing the burden of adaptation. The literature suggests that this balance is crucial: tools must be simple enough to use, but open enough to remain locally relevant (Durlak & DuPre, 2008; Davis & Krajcik, 2005).

Translation into additional languages was the most frequently cited need for improvement, with 13 respondents requesting more materials in local languages. This finding is unsurprising, given that ProBleu operated across 40 countries with 40 distinct official languages. One respondent stated plainly that "ready-to-use templates in multiple languages would enhance

accessibility." Core tools, particularly the NEBS guidance, the brainstorming worksheet, and the subject-based ideas, are strong candidates for priority translation.

Age-appropriate and level-differentiated materials represent a second significant gap. Feedback from primary school educators indicated that the current resources skew towards secondary-level complexity in language and task design. One respondent specifically noted that "clearer step-by-step activity samples tailored specifically to younger learners would make the resources more accessible." Developing parallel primary and secondary versions of key tools, or providing explicit guidance on differentiation within existing resources, would substantially extend their usability.

Region-specific ecosystem modules were identified as a priority by multiple respondents. Scientific protocols and project examples developed around generic ocean or water themes were found to be poorly suited to the particularities of local ecosystems, wetlands, inland waterways, Mediterranean coastlines, and Baltic Sea environments. As one respondent noted, "some scientific protocols were too generic for the unique biodiversity of our specific wetland." Regional adaptation layers, co-developed with local scientific and educational expertise, would significantly strengthen the practical utility of the resources.

More concrete examples and case studies were requested by 8 respondents in open-text responses and were the third most-cited area for improvement overall. Teachers found the guidance more compelling and actionable when it included illustrative examples of real school projects. An enriched case study library, ideally presented through an engaging digital format with visuals, as one respondent suggested, would directly address this need.

Better onboarding and greater awareness of the full resource suite emerged as structural gaps. Despite the breadth of available tools, awareness of some resources was notably low: 33% of respondents were unaware of the email template for external partners, 23% of the brainstorming worksheet, and 20% of the sign-off template. One respondent articulated this clearly: "*Make sure schools understand all components from the start, NEBS, resources, application steps, timeline.*" A structured onboarding sequence would improve uptake across the full toolkit.

Multiple respondents requested more interactive and multimedia formats, including videos, micro-modules, and web-based tools. These formats are better suited to busy teachers' working patterns and to the diverse learning styles found across EU and associated countries' school systems.

Stronger alignment with national curricula was cited as a challenge by 5 respondents and flagged as an area requiring improvement by 7 in the comprehensiveness dimension. Schools found it difficult to justify the time spent on Blue School projects when these could not be demonstrably linked to assessed curriculum areas.

Monitoring and self-assessment tools for schools undertaking Blue School projects were, until recently, largely absent from the suite, and schools expressed interest in frameworks that would allow them to track student learning and project progress against defined criteria, supporting both internal quality assurance and the NEBS accreditation narrative. In 2026, this gap began to be addressed by integrating the MICS (Measuring Impact of Citizen Science) tools [mics.tools] into ProBleu, enabling schools to measure and monitor the impact of the citizen-

science elements of their projects. While MICS focuses on the citizen-science dimension rather than the full range of learning outcomes, it gives schools a structured, evidence-based way to capture and reflect on project impact, and provides a foundation on which broader monitoring and self-assessment frameworks could be built. The ProBleu–MICS consultation and support services (impact assessment, community building, continued support, networking, online live reporting tools, and authoring opportunities such as blog posts for social media engagement) have helped schools and teachers to interact, share ideas for implementation, and develop scenarios for integrating evaluation and monitoring tools into school settings and the curriculum. They have also helped teachers to: secure support to explore further funding opportunities; choose appropriate evaluation, impact assessment and virtual science learning approaches; identify suitable learning partners; secure institutional backing; and plan for long-term sustainability.

8. Lessons learned and recommendations

The evaluation provides several lessons for future Blue School support. First, schools respond positively to guidance that is concrete, visual, and stepwise. Second, the greatest value is created when resources support not only initial project design but also communication, sustainability, and institutional embedding. Third, the strongest results emerge when schools are treated as co-designers rather than passive recipients of materials.

8.1. Lessons learned for supporting Blue Schools

Blue School development is most effective when it combines pedagogical relevance with organisational practicality. Schools need resources that speak simultaneously to learning, accreditation, leadership approval, and community engagement. This means that future support should continue to integrate curriculum-linked ideas with project management tools.

The findings also reinforce the value of a whole-school approach. When teachers were able to connect project aims to leadership priorities and school development plans, the support package appeared more useful and more sustainable. This echoes the literature on sustainability education and educational change, which shows that isolated classroom innovations are less likely to endure than initiatives embedded in school culture and supported by leadership (Fullan, 2007; Mogren et al., 2019).

The implementation of WP2 guidance across more than 100 funded schools, combined with the evaluative data gathered through co-creation workshops and the February 2026 survey, yields a set of substantive lessons for those seeking to support schools in joining the Network of European Blue Schools and, more broadly, in integrating ocean and water literacy into their educational programmes. Six key lessons are identified below.

Lesson 1: Core planning tools form the indispensable backbone of effective school support.

Schools consistently identified the subject-based project ideas (19 nominations as most valuable), the teaching resources catalogue (15 nominations), NEBS application guidance (14 nominations), and the brainstorming worksheet (10 nominations) as the resources of greatest utility. These four tools together provide the cognitive and procedural scaffolding that enables schools to move from initial interest to a defined, NEBS-ready project. Any future iteration of

the guidance suite should treat these as protected core assets, resources to be maintained, refined, and made widely accessible in priority languages before attention turns to supplementary tools. The email template and sign-off template, while useful for schools with specific coordination needs, were rated as less valuable overall and should be positioned as optional rather than central.

Lesson 2: Awareness gaps silently undermine uptake.

Even among funded schools that had committed to the ProBleu programme, between 17% and 33% were unaware of individual tools within the guidance suite. This was not for lack of dissemination: links to the full resource suite were provided in the calls for proposals and again during onboarding, so the information reached every funded school. Rather, it reflects the gap between distributing information and securing teachers' attention: receiving a link or a document is not the same as reading, absorbing, or returning to the material amid competing demands. High-quality tools cannot deliver value if, in practice, they go unread by their intended users. The lesson is that resource development and resource communication must be treated as equally-important investments, and that communication has to go beyond one-off distribution. Future programmes should build an active, repeated awareness and onboarding strategy into the project design, for example, staged prompts, guided walk-throughs and reminders at the point of need, rather than assuming that making tools available, or sending a link or a document, equates to tool use.

Lesson 3: Simplicity and brevity are conditions of effectiveness.

Across both quantitative ratings and open-text feedback, information overload and excessive length were recurring themes, with 12 respondents specifically citing clarity of language and instructions as areas for improvement. This reflects a broader pedagogical reality: teachers are time-poor professionals who engage with professional resources in brief, purposeful windows, and materials written for expert readers in a project-consortium context will not, in that form, serve classroom practitioners well. The lesson is not that the guidance should be less comprehensive (comprehensiveness remains essential), but that comprehensive content must be made accessible. This points to layered information design as a core development principle: concise, plain-language entry points and quick-start summaries for everyday use, with fuller detail available beneath for those who need it. Writing for the busy non-specialist reader and structuring material so that depth is available on demand rather than imposed up front allows the guidance to remain both thorough and usable.

Lesson 4: Language accessibility is non-negotiable for educational reach in the EU and associated countries.

With 13 requests for more materials in local languages, language emerged as the single most prominent unmet structural need. Five respondents reported language barriers as an active challenge in the survey period. For a project operating across the full geographic and linguistic breadth of the EU and associated countries, English-only resources pose a significant constraint on equity and uptake. Language accessibility should be planned and budgeted as a core deliverable from project inception.

Lesson 5: Institutional buy-in varies widely and requires differentiated support strategies.

The survey data revealed considerable heterogeneity in schools' institutional contexts. Some schools were able to initiate and run Blue School projects with minimal formal approval processes; others faced bureaucratic requirements for sign-off at multiple levels of their institutional hierarchy. The sign-off template was rated as not applicable by 17% of respondents, reflecting this variation. A single standardised institutional pathway cannot adequately serve this diversity. Guidance should explicitly acknowledge the range of institutional contexts and provide modular support, from a rapid self-starter route for independent educators to a more structured IPAs engagement process for those navigating complex school governance structures.

Lesson 6: Time constraints are the dominant systemic challenge, and guidance design must account for this.

Time constraints were cited as a challenge by 16 respondents, more than twice the frequency of the next most common challenge, and 11 respondents requested longer project timelines. This reflects a structural tension between the demands of running a meaningful, curriculum-integrated Blue School project and the realities of teachers' contracted time and workload. While project timelines are partly a funding and policy matter beyond the control of resource developers, guidance design can partially mitigate this constraint. Modular, time-stamped resources that communicate upfront how long each activity takes and that offer both abbreviated and full versions of key tools would meaningfully reduce the perceived time cost of engagement.

8.2. Recommendations for future use of ProBleu guidance

Future use of the ProBleu guidance would benefit from greater emphasis on:

- concise step-by-step guidance;
- visual examples of completed projects;
- templates for communication and dissemination;
- stronger support for inclusivity and accessibility;
- clearer routes for sharing outputs across schools and networks.

These recommendations are consistent with the literature on teacher uptake of environmental education tools, which indicates that adoption improves when resources are practical, adaptable, and clearly connected to intended outcomes (Rogers, 2003; Freitas et al., 2024).

The lessons set out above translate into a set of actionable recommendations, organised by the primary audience for each recommendation.

8.2.1. For schools and teachers

Prioritise the core planning toolkit as a starting point. The brainstorming worksheet and subject-based project ideas are the most effective entry points for schools new to the Blue School concept. Teachers should be encouraged to begin with these two resources before engaging with application and administrative tools, using them to identify a genuinely

compelling project question rooted in the local environment and curriculum context. Schools that start with a strong project idea are better positioned to complete the NEBS accreditation process.

Engage school leadership early using the sign-off template. For schools in institutional contexts that require formal sign-off, early engagement with school leadership and governing bodies significantly reduces the risk of project delays or termination. The sign-off template should be used as a communication tool, not merely an administrative one, framing the Blue School project in terms of its educational value and alignment with the school's wider development priorities.

Connect with other Blue Schools for peer learning and inspiration. Nine respondents requested more networking opportunities with other Blue Schools. Peer learning, through visits, virtual exchanges, or shared project showcases [https://probleu.school/funded-schools/], provides the kind of contextualised, concrete inspiration that generic guidance documents cannot replicate. Schools should be encouraged to seek out and contribute to such exchanges, and programme coordinators (e.g., from the NEBS) should facilitate structured opportunities for this by integrating a **push and pull strategy** whereby the advanced schools will push the most innovative projects and interventions, while the rest of the schools will pull for the ideas with the highest water and ocean educational impact.

Use the resources catalogue as an ongoing teaching resource. Fifty per cent of respondents reported integrating catalogue resources into their teaching, with 20% doing so extensively. The catalogue's value extends well beyond the NEBS accreditation cycle and should be promoted as a long-term professional resource for teaching ocean and water literacy.

8.2.2. For the ProBleu partners, the NEBS, the European Commission, and Mission Ocean

Maintain and update the teaching resources catalogue beyond the ProBleu project end date. The catalogue was rated as the second most valuable resource overall. Allowing it to become outdated following project closure would represent a significant loss of impact. A sustainability model, involving PML (and potentially the NEBS) as the maintaining institution with periodic contributions from national networks, has been agreed and resourced.

Invest in multilingual versions of the four core tools. The brainstorming worksheet, subject-based project ideas, NEBS application guidance, and inclusivity guidance should be translated as a minimum priority. Translation investment should be directed first to the languages of countries with the largest numbers of ProBleu-funded schools and, second, to languages representing underserved communities within the NEBS network.

Continue simplifying and streamlining the NEBS application process. The 67% who reported reduced administrative burden represent meaningful progress; the remaining third suggests that further simplification is achievable. Specific attention should be given to reducing duplication between project reporting and accreditation documentation, and to providing schools with clearer guidance on what constitutes sufficient evidence at each stage.

Establish regional coordination support structures. Nine respondents requested regional or local support coordinators, reflecting the significant value placed on proximate, contextually informed guidance. National contact points or regional ambassadors who can assist schools in adapting the generic guidance to their local curriculum, ecosystem, and institutional context would substantially increase conversion rates from initial interest to successful NEBS accreditation.

8.2.3. For national and regional networks and ministries of education

Map Blue School projects explicitly onto national curriculum frameworks. Curriculum integration was identified as a challenge by five respondents and as an improvement priority by seven. In the long term, the NEBS, in collaboration with national ministries, is best placed to develop country-specific guidance that demonstrates how Blue School project activities fulfil assessed curriculum requirements, reducing the perceived trade-off between project participation and curriculum coverage.

Support teacher professional development around ocean and water literacy. Twelve respondents requested more training and professional development. This is not a gap that can be addressed by resources alone. Sustained professional learning, through pre-service initial teacher education, continuing professional development programmes, and school-to-school peer learning networks, is necessary to build the subject confidence and pedagogical repertoire required for effective Blue School delivery.

Use the institutional roadmap tool to embed Blue School activity in school development plans. When schools position their Blue School project as a formal component of their school improvement or development plan, rather than an extracurricular add-on, the conditions for sustained engagement are substantially improved. National networks and education authorities should encourage and, where possible, formally recognise this embedding.

8.3. Recommendations for further development

Further development should focus on making the ProBleu package more modular and easier to reuse across different school types. Schools with less experience may need more guidance on the basics of project design and accreditation, while more experienced schools may benefit from deeper support on sustainability, communication, and scaling. There is also scope to develop additional examples that show how ProBleu activities can be linked to different subjects, age groups, and water contexts.

In addition, future iterations could place greater emphasis on impact narration, helping schools document not only what they did but also what changed as a result. This would strengthen the evidence base for the NEBS and improve the transferability of successful practices across contexts.

Beyond recommendations on how existing resources should be used and sustained, the survey data support a forward-looking agenda for further developing the ProBleu guidance suite.

These recommendations are primarily addressed to the project partners and any successor initiative.

Digitalise core tools through interactive online formats. Multiple respondents explicitly requested video resources, micro-modules, and web-based interactive tools as alternatives or complements to static documents. One respondent proposed "promoting real active projects on a well-designed webpage as idea brainstorming rather than putting the ideas without visuals on a sheet of paper." An online hub that presents core tools in dynamic, visual formats, with embedded video examples, clickable project templates, and searchable case study libraries would dramatically improve usability and reach, particularly for schools with limited capacity for extended engagement with documents.

Develop short instructional videos for each core tool. Brief (three-to-five-minute) explainer videos demonstrating how to use the brainstorming worksheet, navigate the catalogue, and complete the NEBS application would reduce the cognitive effort required to engage with the tools for the first time. These could be produced cost-effectively using existing project expertise and made available through the NEBS website and partner channels.

Co-develop national curriculum alignment guides with education authorities. Rather than leaving curriculum integration to individual schools, the NEBS, or a successor project, should seek formal partnerships with ministries of education or national curriculum bodies in key countries to produce country-specific alignment documents. These would map each Blue School activity type to specific curriculum standards and assessment criteria, providing teachers with the institutional authority they need to justify project time on their timetables.

Establish an ongoing teacher training and professional development programme. Twelve respondents requested more training and professional development, the second-most-common support need after language resources. A structured programme, potentially delivered through online modules, regional workshops, and school partnership schemes, would address the expertise gap that 7 respondents identified as a direct barrier to engagement. Aligning this programme with recognised continuing professional development frameworks would increase its uptake and institutional legitimacy.

Develop assessment rubrics and self-reflection tools for schools. The next stage of ProBleu development should include a structured impact assessment and self-reflection framework to complement the existing planning and implementation toolkit. Although the current resources effectively support schools in designing and carrying out Blue School projects, they provide less guidance on how to capture progress, assess quality, and evidence impact over time. Short rubrics and reflective prompts aligned with student learning, environmental action, community engagement, inclusivity, and sustainability would enable schools to track development more systematically, strengthen their NEBS submissions, and build a culture of ongoing improvement. This would build on the MICS-based consultations already used with schools to explore project impact in a practical and teacher-friendly way.

Design region-specific ecosystem modules in collaboration with local research institutions. The call for regionally contextualised guidance was one of the most specific and technically grounded improvement requests. Modules tailored to the ecology, environmental challenges, and cultural significance of aquatic environments, Mediterranean coastlines, Baltic and North

Sea shores, Atlantic margins, major river systems, and inland wetlands would make the scientific content of Blue School projects substantially more relevant and credible. These modules should be co-developed with regional universities and research institutes to ensure scientific accuracy and pedagogical appropriateness.

Establish a clear post-project sustainability and update model for the resource suite. ProBleu designated maintaining institutions (Earthwatch and CSIC), an internal funding stream, and an update cycle to avoid the risk of the ProBleu resource suite becoming progressively outdated following the project's May 2026 end date. A sustainability plan that identifies which resources will be maintained, by whom, with what frequency, and under what governance arrangements has been agreed upon by the consortium, coordinated with the NEBS. One respondent noted the importance of improving "continuity once the initial project has ended" and suggested leveraging Erasmus+ to sustain school connections. Embedding the resource suite within the permanent infrastructure of the NEBS and Mission Ocean platforms would provide the most durable foundation for long-term impact.

To strengthen the long-term legacy of ProBleu, the project partners should continue building partnerships with complementary platforms and initiatives, such as OxTrack [https://www.ox-track.com/], which supports teacher growth, professional reflection, and capacity strengthening. Such synergies could help extend ProBleu's impact beyond the project lifetime by reinforcing teacher development, supporting water-related education practice, and creating stronger links with the NEBS community and wider educational networks.

9. Dissemination, access and sustainability

The long-term value of ProBleu depends on the extent to which its refined guidance, templates, and examples are accessible beyond the immediate project consortium. Dissemination should therefore be understood as part of the support ecosystem itself. Schools are more likely to benefit from ProBleu when they can access clear materials, see examples from other contexts, and adapt tools to their own needs.

9.1. How the results will be shared

The project will continue to share results through the ProBleu website, partner networks, and NEBS-related channels. Where possible, outputs will be presented in formats that are easy for teachers to reuse, including concise guides, editable templates, and visual summaries of good practice. This is especially important for communication with schools that may have limited time or limited experience with project evaluation.

The findings of D2.5 will be disseminated through a range of channels to ensure broad reach across the NEBS community, the wider European water-education sector, and relevant policy audiences. Dissemination activities are planned primarily for Q2 2026, aligned with the final phase of the ProBleu project.

ProBleu website. The full D2.5 report will be made available for download on the ProBleu project website. Earthwatch, as lead partner for WP2, will publish an accessible summary blog post presenting the key evaluation findings in plain language, targeted at teachers, school coordinators and NEBS IPAs. The blog post will be published no later than the end of Q2 2026.

NEBS and Maritime Forum channels. A summary of findings relevant to the NEBS quality framework and the accreditation process will be submitted for publication on the NEBS platform pages. Where the European Maritime Forum (2021) or equivalent IPAs platforms offer dissemination opportunities, Earthwatch will prepare and share a short policy-facing summary in coordination with CSIC.

Newsletters and social media. Earthwatch will include a dedicated feature on D2.5 findings in the ProBleu project newsletter and will coordinate social media promotion across project partner channels (LinkedIn). Content will be tailored to different audiences, educators, policy actors and the public, in line with the WP6 communication plan.

Conference presentations. Where relevant calls for contributions arise, project partners will submit abstracts presenting the D2.5 evaluation findings to appropriate conferences and symposia (e.g. European science education conferences, ocean literacy networks, Horizon Europe dissemination events). Earthwatch, Plymouth Marine Laboratory and CSIC will lead science-facing presentations; Earthwatch will lead citizen-science-- and education--facing venues. All dissemination activities will be recorded in the WP6 dissemination log.

Additional repository support. As part of the dissemination and sustainability strategy, the ProBleu project team is exploring opportunities to connect its outputs and results with additional repositories at the conclusion of the project, such as the *Social Sciences and Humanities Open Marketplace* (SSH Open Marketplace), to increase the visibility, reuse, and interdisciplinary reach of its resources. The SSH Open Marketplace is a multidisciplinary discovery portal that pools and contextualises tools, services, training materials, datasets, publications, and workflows, supporting discovery, reuse, and dissemination across research communities. As such, it may offer a useful space to showcase ProBleu tools, methodologies, and learning materials, subject to further review of its relevance and submission criteria.

9.2. Access to guidance and tools

Open access to ProBleu tools is important for the wider Blue School community. The more schools can reuse templates, project examples, and roadmaps, the more likely the ProBleu model will contribute to the sustained expansion of the NEBS. The literature on school innovation and citizen science suggests that resource visibility, reuse, and adaptability are key to scaling beyond the original project cohort (Coburn, 2003; Ceccaroni et al., 2023).

All guidance materials, tools and resources developed or revised throughout the project, informed by the findings of this evaluation, will be made openly and freely available to the broadest possible audience, in accordance with Horizon Europe open-access requirements.

Updated versions of the ProBleu guidance package, incorporating revisions recommended in this document, will be hosted on the ProBleu project website and cross-linked from the NEBS platform. Materials will be published under a Creative Commons licence (CC0), permitting free reuse, adaptation and redistribution.

9.2.1. Long-term availability

All publicly accessible project outputs, including D2.5 and the associated resource package, will remain available online for a minimum of seven years following the project end date (i.e. May 2033). Earthwatch and CSIC are responsible for ensuring continuity of hosting arrangements beyond the project period.

The ProBleu teaching resources catalogue, one of the most frequently accessed elements of the guidance package (93% of respondents reported familiarity with it), will continue to be maintained by PML.

To reduce the onboarding difficulties reported by schools (notably the lack of clear orientation to the full NEBS process), an FAQ section addressing commonly raised questions will be developed and published on the ProBleu website.

9.3. Teacher support services

ProBleu provided comprehensive professional development support to teachers and school project leads through an integrated ecosystem of services designed to strengthen ocean and water literacy capacity within school communities. This support combined practical guidance, peer collaboration, and access to specialised tools, enabling educators to develop and deliver successful Blue School projects, and join the NEBS.

The ProBleu support framework included:

- **NEBS application guidance** and project planning templates
- **Co-creation workshops** with certification for participating teachers and students
- **Science Stories and resources** (D3.5) for immediate classroom use
- **MICS platform** [https://mics.tools] use-support for impact assessment and reflection
- **Webinars and networking** with sister projects (BlueLightS, SHORE)

Cross-school collaboration was facilitated through international exchange opportunities, enabling teachers to share good practices, develop joint projects, and build a sense of belonging within the wider NEBS community.

This integrated support approach created a **strong network of water-related education practitioners** at national and international levels, equipping teachers with the confidence, resources, and connections needed to sustain ocean literacy initiatives beyond the project lifetime.

9.3.1. Certification

ProBleu awarded certificates of participation to teachers and students who completed co-creation workshops, recognising their contributions to the development of ocean and water literacy. These credentials provide formal recognition of professional development in water-related education and motivate continued engagement with NEBS projects beyond the funding period. Certificates strengthen teachers' institutional profiles and give students tangible evidence of their role in EU Mission Ocean initiatives (see Figure 12).

Figure 12. Certificates of participation were awarded to teachers and students who participated in the co-creation workshop

9.4. Sustainability potential

ProBleu was designed so that its resources and community outlast the funded period. The project's full approach to sustaining and scaling water-related education is set out in the *Plan for the exploitation, dissemination and communication of results* (PEDCR, D6.1), which frames ProBleu dissemination and communication across several axes: alignment with Mission Ocean and national Blue School initiatives; exemplary NEBS case studies and accreditation guidance; ICT-based educational services through the resource catalogue (D3.5); dedicated water-related education communities; and the use of self-reflection and impact-assessment tools, including the MICS tools (D5.3) and emerging AI applications, to support school accreditation. This section summarises the elements most relevant to participating schools.

Three components underpin this sustainability:

- A community of practice: the certification of participating educators and students, mentoring relationships between Blue Schools, and the webinars and sister-project links built during the project create a community that can keep supporting new schools.
- Practical, reusable tools: schools retain access to a full resource set, including the teaching-resources catalogue and the 27-language Science Stories and resource bundles hosted by Plymouth Marine Laboratory [https://probleu.pml.space].

- Demonstrated demand: the strong response to the ProBleu open calls (see the Outcomes section) points to scalable demand for this kind of support across the EU and associated countries.

9.4.1. Long-term support commitment

Several concrete commitments extend support beyond the project: the MICS tools and the Earthwatch team will remain available to funded Blue Schools through their project's completion; PML will maintain the teaching-resources catalogue for at least seven years after the project (D3.5). Together, these arrangements let schools sustain their NEBS work through institutional embedding, peer mentoring, and access to evolving ocean and water literacy resources.

10. Conclusions

This deliverable, D2.5, set out to evaluate the extent to which the guidance, tools, and resources developed by the ProBleu project supported schools participating in the Network of European Blue Schools in understanding, navigating, and completing the accreditation process. The evaluation drew primarily on a structured online survey administered in February 2026 to the 111 schools funded through ProBleu, from which 30 complete responses were received (27% response rate). Open-text responses, where available, and qualitative inputs from project workshops provided supplementary context. The mixed-methods approach allowed both quantitative patterns and illustrative school-level experiences to be captured, producing a rounded, if necessarily partial, picture of the guidance package's perceived effectiveness.

The evaluation yielded several findings directly relevant to the future development of the NEBS and the broader Mission Ocean agenda. Satisfaction with the overall quality of ProBleu materials was high: 90% of respondents rated quality as "Good", and 93% agreed that the resources supported sustainability learning within their school communities. 87% reported an enhanced understanding of the EU Mission "Restore our Ocean and Waters by 2030" due to engaging with the guidance, and 80% felt it had reduced the barriers they faced in pursuing NEBS accreditation. Among individual resources, subject-based project ideas emerged as the most valued, receiving the highest number of nominations (19 of 30 respondents), a finding that points to the primacy of curriculum-integrated, practice-ready content for classroom teachers. Against this positive picture, the evaluation also identified time constraints as the dominant operational challenge, cited by 16 respondents (53%), well ahead of gaps in ocean expertise and technical difficulties. Administrative support tools such as the email template and sign-off template, while available, were among the least-used resources, suggesting that comprehensive toolkits alone are insufficient and that schools benefit most from targeted, immediately applicable materials.

The evaluation is subject to several limitations that should temper the interpretation of findings. A 27% response rate, while acceptable in institutional survey contexts, leaves most of the funded cohort unrepresented, and the likelihood of self-selection bias, whereby the schools most engaged with ProBleu are also the most likely to have responded, means that satisfaction levels may be somewhat overstated relative to the full population. By design, the evaluation did not measure student learning outcomes directly: pre- and post-assessments of learning are the focus of Deliverable 5.2, while broader, project-wide impact measurement using the MICS

tools is the focus of Deliverable 5.3. D2.5, therefore, concentrates on the perceived usefulness and implementation experience of the guidance and support package among the schools that engaged with it. Read together, these deliverables offer complementary evidence: D2.5 on whether the support worked for schools, and D5.3 (with D5.2) on the learning and wider impact it helped produce. The findings here should accordingly be read as indicative of how a self-selected, engaged group of schools experienced the support, rather than as a representative or causal measure of impact. Future evaluations should consider longitudinal designs, triangulated with school-level outcome data, to build a stronger evidence base.

Notwithstanding these limitations, D2.5 makes a meaningful contribution to the longer-term legacy of ProBleu, NEBS and Mission Ocean. By systematically gathering and publishing the experiences of schools that engaged with the ProBleu guidance package, the deliverable creates a transparent record of what worked, what did not, and what schools need next. The recommendations emerging from the evaluation, to simplify and shorten materials, expand multilingual provision, invest in sustained professional development, develop region-specific content, and support post-project continuity, are grounded in practitioner voice and are directly actionable by future NEBS governance bodies and potential successor projects. With 90% of responding schools indicating their intention to continue with NEBS beyond the funded period, the foundation for a self-sustaining, international community of Blue Schools is demonstrably in place. The task for the next phase of the network, whether through a successor project, national policy frameworks, or integration with initiatives such as Erasmus+, is to build the structural and pedagogical infrastructure that converts that intention into lasting, equitable engagement across diverse school contexts in the EU and associated countries.

The evaluation suggests that ProBleu has made a meaningful contribution to strengthening the Blue School ecosystem in Europe and beyond. Its main value lies in helping schools translate broad ambitions around ocean and water literacy into structured, implementable, and more sustainable projects. The findings also show that the project is strongest when viewed as a support process that combines guidance, co-creation, and iterative improvement.

At the same time, the report shows that further work is needed to strengthen communication, inclusivity, and long-term sustainability. These are not unique to ProBleu; they are recurring challenges in school-based innovation and environmental education. That is precisely why the project is valuable: it provides a practical, teacher-informed model for addressing such challenges through clear guidance, collaboration, and adaptive support.

Overall, the evidence indicates ProBleu has made a substantial contribution, delivering high-quality guidance and resources that respond directly to the needs of schools, teachers, and students working on water-related education. The project has shown that, when schools are supported with practical tools, professional learning, and a shared vision, they can build more engaging, inclusive, and collaborative learning environments.

ProBleu provides a comprehensive response to the challenges of introducing water-related education and ocean literacy in school settings. Through its guidance, teaching aids, and collaborative approach, the project has supported schools in involving their wider community, strengthening teacher confidence, and increasing student engagement. Its overall aim has been

to help schools embed water-related education in a sustainable way, so that school leaders, teachers, students, and communities can all contribute to and benefit from the process.

Building on existing best practices, ProBleu has demonstrated a practical and scalable path for integrating water-related education into everyday school life. The project has shown that meaningful change is possible when innovation is supported by collaboration, flexibility, and resources that are relevant to real classroom needs. In this way, ProBleu offers a clear model for future work that connects education, sustainability, and community engagement.

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