Using a Global Sporting Platform for Ocean Literacy - Insights from the Volvo Ocean Race 2017-18

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Abstract

The Volvo Ocean Race 2017-18, an around the world sailing race, created an ocean literacy programme called 'Champions for the Sea' for use by educators with 6- to 12-year-olds. There were 290 educators signed-up with over 94,000 students to use the online ocean literacy programme from 40 different countries. This paper researched how ocean literacy and pro environmental behaviour was influenced after using 'Champions for the Sea' with 16 educators from 7 countries using self-reporting feedback forms. It is clear from this research that the participants' exposure to the 'Champions for the Sea' topics had a positive influence on the educator's and student's ocean literacy. It also increased their pro-environmental behaviour in school regarding single-use plastics. This research suggests that using informal ocean literacy programs alongside formal school curricula can help promote greater ocean literacy, in turn, helping to address the global challenges of ocean literacy and the many directives and calls by the United Nations (UN) Ocean Decade, UN Sustainable Development Goal 14, European Marine Board and EU Commission. In addition, 'Champions for the Sea' was created using social-emotional learning, inquiry, place-based, peer to peer communications and reflective and active learning techniques helping to show how these techniques can support increased awareness and pro-environmental behaviour from an informal ocean literacy programme for primary school users. Finally, this research highlights the important role of sports in fostering and developing ocean literacy.

1. Introduction

The ocean covers more than 70% of the planet and is inextricably linked to human health and survival on planet Earth. The ocean provides most of the oxygen we breathe, stores carbon, regulates the climate, provides food, energy, medicines, transport, recreation and is culturally very important for many communities. As Claudet et al. [1] point out; the ocean is critical for survival and achieving sustainable development. It is believed that many of the United Nations Sustainable Development Goals (SDGs) might not be realised without achieving Sustainable Development Goal 14 and delivering a healthy ocean [2]. However, as noted in Laffoley et al. [3], current efforts aimed at preserving and expanding options and opportunities for future generations and a healthier planet are not working. The current narrative does not connect people with their actions in a way that is needed; evidenced by the lack of progress in protecting the ocean and the limited global climate action being taken [3].

The Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) Values Assessment highlights that the causes of and solutions for our global environmental challenges are related to the ways in which we value our environments [4]. Indeed, as Schellnhuber [5] expresses humans are part of one unified Earth system, that is; we are part of nature not 'apart' from nature and with that premise, the ocean is central to our existence. We are, therefore, inextricably connected and interdependent on the health of the ocean. However, despite a recognition of these interconnections, society's relationship with the ocean urgently needs to undergo a paradigm shift to effectively address the many crises affecting the ocean [6]. A fundamental change in restoration of human-ocean relationships can help develop new social norms that can in turn form new incentives for individuals, the private sector and governments to change behaviour for a more sustainable future [1], [6], [7].

Several studies have explored the human-ocean connection under the emerging field of marine social science research [8], [9], [10]. The importance of understanding the ocean and our relationship with it cannot be undermined [11], without this understanding a reciprocal relationship will be very hard to achieve [11]. In the context of international commitments, Kelly et al. [12] also argue that an improved understanding of the ocean and the ocean's sustainable use is essential for achieving the global Sustainable Development Goal 2030 commitments.

 | DOI: 10.20533/ijcdse.2042.6364.2024.0607

2. Ocean Literacy

There are a range of frameworks and concepts proposed to explore the relationships between people and the ocean a.k.a. the human-ocean connection (e.g. ocean identity [13] and marine citizenship [14], [15]. More recently we have seen ocean literacy gain traction due to these concepts being included in the United Nations Decade of Ocean Science for Sustainable Development. The term ocean literacy was coined in 2004 by US marine educators who recognized a lack of ocean science within the national curriculum, defined as meaning that humans understood the ocean's influence on you and your influence on the ocean [16]. Since then, this concept has evolved, moving away from a focus on individual understanding to one that is inclusive of the whole of society. Santoro et al. [16] indicate that ocean literacy should be understood as both an individual and collective mutual relationship with the ocean or as the development of a civic relationship with the ocean. Also, the understanding of ocean literacy means being able to communicate about the ocean in a meaningful way; and being able to make responsible and informed decisions regarding the ocean and its resources' [16]. Recent studies from Brennan et al. [17] and McKinley et al. [8] suggest a broader framework for ocean literacy encompassing multiple dimensions including knowledge, communication, behaviour, awareness, attitudes, activism, emotional connection, access and experience, adaptive capacity and trust and transparency. Crucially, they recommend expanding previously recognised ocean literacy dimensions, in a bid to ensure that ocean literacy encompasses diverse knowledges, values and experiences [8].

Education has been recognized as one of the critical agents in addressing environmental issues and climate change [16]. Effective education is fundamental in providing humans with enough information to make sound decisions (environmental or otherwise) in everyday life [18], [19]. From a collective intelligence study with education stakeholders, it was apparent that stakeholders were of the view that tackling "Awareness and perceived knowledge" would have the highest level of influence and impact on marine education tackling low levels of ocean literacy [21]. Therefore, it would be only natural for ocean education, and in turn the broadest conceptualization of ocean literacy [17], [8], to be on school curricula. The inclusion of this framework would help to encourage marine citizenship and build on the human-ocean connection which is an important factor for behaviour change [22] in turn supporting the United Nations Sustainable Development Goals 4 (Quality Education) and 14 (Life Below Water). However, we know that knowledge and awareness are not always the only key factor in acting to protect and stand up for nature; our connection with the ocean also plays a major part [22], [23].

The importance of recognizing the role of ocean literacy in addressing ocean issues has been stressed by the European Marine Board since 2013, and more recently in 2020 with the European Commission's Mission Starfish 2030 Report objectives. The UN Decade for Ocean Science has expectations and targets to have ocean literacy in education policies and curricula of formal education systems by 2025 [24]. However, research with citizens globally has shown limited understanding of the importance of the ocean and its functions, partly due to the limited marine education efforts happening in schools as noted in research over a decade ago [25], [26], [27], and, more recently, where ocean literacy is not part of formal education in many countries [28], [29], [30], [31], [32] In terms of education delivery, O Brien et al. [31] suggest that formal and informal education programs working together can improve school curricula and promote greater ocean literacy. Informal education settings have been found to enhance learning by going beyond the scope of formal educational curricula [32] by offering immersive hands-on and unique learning experiences [34], [35]. Sports can play an important role in informal education and fostering ocean literacy. Ocean-based recreational activities and watersports can play a crucial role in ocean literacy as an informal education tool. This has been evidenced by Fox et al [36] in a study showing surfers ocean literacy understanding that; the ocean is a major influence on the ocean and climate, the ocean supports a great diversity of life and ecosystems, and the ocean and humans are inextricably interconnected, therefore showing that surfing waves are a potential medium for ocean literacy [36].

Projects adopting this approach are increasing in number. Examples include some local water sports centers like Outdoor Portofino in Italy and Sea Synergy Marine Awareness, Research and Activity Centre in Ireland integrate ocean literacy into their outdoor activities with marine biologists and ecologists as tour guides (pers. obs.). These watersports centers also run citizen science activities e.g. Portofino Seaweed Garden [37] and the Sea Synergy Oyster project [38] where participants can join and learn about the local marine environment and contribute to marine restoration projects. Furthermore, it should be noted a new EU Erasmus+ Sports Programme called 'Ocean Sustainability through Education and Sport' was initiated in October 2023 to focus on raising environmental awareness through sport which also shows the interest and potential in this sector [39].

Increasingly, entities like the UN, The International Ocean Committee (IOC) and others have identified how sports heroes can reach another target audience and are using sporting heroes to increase ocean literacy outreach e.g. IOC: Maya Gabreira, famous big wave surfer [40], EU4Ocean: Federico Morisio professional windsurfer supports messaging

 | DOI: 10.20533/ijcdse.2042.6364.2024.0607

for several European Commission initiatives for the Ocean e.g. Youth4Ocean Forum and Starfish Champion for the EU Mission Starfish [41]. Sailors like Teresa Zabell, founder of EcoMar, Catherine Chabaud, founder of Ocean As Commons, Dee Caffari, Skipper of Turn the Tide on Plastic 2017-18 Volvo Ocean Race, Charlie Enright, Skipper 11th Hour Racing Team and Boris Herrmann, Skipper Team Malizia both in The Ocean Race 2023, are also using their sporting profile or platform for ocean and climate matters helping to educate and inspire their fans, schools, governments, and industry.

In addition to the diversity of experiences they can afford, sporting events offer a great opportunity for engagement and outreach in specific topics like ocean literacy and climate awareness due to their reach, specifically linked to the number of stakeholders involved in an event [42]. The Volvo Ocean Race has had a footfall of 2.5 million people onsite during the global sailing race, 2.8 billion cumulative online news audience, 1.9 billion social media post impressions and 2.6 billion cumulative TV broadcast audience making it an important sporting platform for engaging a range of stakeholders in the sport of sailing and ocean literacy [42].

2.1. The Volvo Ocean Race and Ocean Literacy

The Volvo Ocean Race is an around-the-world sailing competition that happens every 3-4 years and stops in 6-8 different international host cities. It engages over 2.5 million stakeholders worldwide, both online and onsite. When the race stops in a coastal town, it can be there from 5 days to 3 weeks. The Ocean Race initially engaged a marine biologist and environmental educator to develop an ocean education programme in 2017 as it wanted to be part of the solution to the surmounting issues with ocean health, particularly plastic pollution.

Figure 1. The Volvo Ocean Race 2017-18 route

The Race identified an opportunity to engage a wider audience of educators and their students in ocean literacy through their sporting events. Bringing ocean literacy to the classroom through the excitement of the sailing race and empowering students and their teachers to be part of the solution was the objective of the ocean education programme (see Figure 1). Figure 1 shows where the race host cities were located, the race boats would have stopped, and teams would have spent time engaging with the community.

2.2. Ocean Literacy Resources - Champions for the Sea

Champions for the Sea was originally developed in 2017 by marine biologists and environmental educators. It is an informal ocean literacy programme aligned with the United Nations Sustainable Development Goal 14, raising awareness of the value of the ocean in everyone's lives. To help all ages understand the need to protect the ocean with simple everyday steps that we can all undertake. It has a specific focus on trying to help improve ocean health and tackle the plastic pollution problem facing the ocean. The free-to-use, online resources, Champions for the Sea, were developed using Head Heart and Hands principles [43] which integrates all three domains of learning: cognitive (head), affective (heart) and practical (hands) to emotionally involve educators and students helping activate them to be the change. Within the sustainability education programme content, we also used some of the Volvo Ocean Race sailors as protagonists who had an important ocean conservation message like Dee Caffari, Skipper of Turn the Tide on Plastic. For the 2017-18 Volvo Ocean Race a pioneering ocean health and plastic pollution education programme was created for educators and their students aged 6-12 years old. The online element of the sustainability education programme covered four topics:

i. The Volvo Ocean Race

ii. Ocean health and plastic pollution

iii. How to reduce plastic pollution

iv. My Positive Plastic Footprint.

Resources such as presentations, videos, student booklets and worksheets called Wisdoms Worksheets as well as teachers' activity guides, Evaluation quizzes to test the student's ocean literacy before and after the module, certificates for each module and videos were developed. All resources were available in 7 languages (Spanish, Swedish, Dutch, Chinese, Portuguese, French). In 2019, the Champions for the Sea programme won Gold at the international Reimagine Education Awards in the sustainability category (see Figure 2).

The modules were created to engage the learners in understanding why the ocean is important, the issues regarding plastic pollution in the ocean, why we need

 | DOI: 10.20533/ijcdse.2042.6364.2024.0607

to protect it and how we can do that through tangible actions. While the ocean literacy principles [12] were integrated within the content, they were not listed as 'the ocean literacy principles' at any point in the resources to prevent overuse of jargon. The resources connect students with the United Nations Sustainable Development Goals (SDGs) that aim to 'transform our world' by 2030 relating to: SDG 14 Life below Water: Conserve and sustainably use the ocean, seas and marine resources for sustainable development.

Figure 2. Wisdom, the race mascot, which was featured throughout 'Champions for the Sea'

'Wisdom', the race mascot was used to engage learners further through having a charismatic character based on a real-life Laysan Albatross, to follow, care for, and ultimately save Wisdom and her friend's home - the ocean. Wisdom guides the learners through the topics using speech bubbles to introduce new resources like videos through weblinks and asking to share knowledge with peers and family. 'Did you know?' statements, and requests to complete challenges in the worksheets for each topic.

The educators could take on some, one or all the modules to engage their students in ocean literacy. After completing a module's worksheets, Champion Challenges and designated exercises from the educator's guide, the educator could print the Champion for the Sea certificate and the badges for each of the five topics. When all the topics were completed, the Champion for the Sea Certificate would have the badges for all five topics. Champion for the Sea's purpose is to help the users understand the ocean better and know their connection with it, understand the issues around plastic pollution and other threats to the ocean and what tangible actions can help protect the ocean.

3. Methodology

The Champions for the Sea resources were free to download from volvooceanrace.com/education. We also asked educators to sign up online if they were planning on using the programme to give us some basic demographic details like location and number of students the educator would use the resources with. Social emotional learning (e.g reflective writing, mindfulness) and active learning (e.g. the water cycle dance) methods were used in creating the programme to help embed the knowledge with the students. Other learning methods used in the programme were inquiry-based learning (e.g. see-think-wonder), and peer-to-peer and project-based learning with specific tasks and challenges to help the learners become more engaged environmental citizens. As the age ranged from 6-12years, age-appropriate student worksheets were available for age groups 6-8yrs, 8-10yrs and 10-12yrs.

3.1. Ethics

In the 2017-18 Volvo Ocean Race, we asked people who had signed up to use the resources to share their projects with us via email and send feedback on the programme with us through an online Smartsheet form. Permissions were given on sign-up to use the programme for The Ocean Race to reach out to the educators who were happy to be engaged in further research on the use of Champions for the Sea.

3.2. Feedback Questionnaires

After the 2017-18 Volvo Ocean Race had finished between June and August, purposive sampling was undertaken when feedback questionnaires were emailed to approximately 200 people who had signed up to use the education programme and agreed to be contacted by the race for feedback. The feedback questionnaire was a smartsheet form available in English. There were 18 questions to complete with a mix of open and closed questions (see Table 1) which ranged from demographic information, how the resources were used, to the influence of the programme on ocean literacy and pro-environmental behaviour based on single-use plastics, elements the educators enjoyed, or they thought could be improved. The questions were developed with the teacher's time in mind and the data we needed to understand the effectiveness of the new sustainability education programme 'Champions for the Sea' rolled out by the Volvo Ocean Race 2017-18. The feedback forms were shared with two educators to test the usability of the questionnaires before emailing the educators who had signed up to use the sustainability education programme (see Table 1).

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Table 1. Participants' responses to online Questionnaire used to Assess the Effectiveness of the Sustainability Education Programme in the Volvo Ocean Race 2017-18

1.	Name	
2.	Country	
3.	School/Organisation name	
4.	What age group did you use the programme with?	
5.	What education topics did you use?	
6.	What subjects did you cover with our education programme?	Language
		Math
		Geography
		Science
		History
		Environmental/Global Stewardship
		Other
Did the programme increase your ocean literacy?		
7.	Do you know more about the ocean after using these resources?	Y/N
8.	Did your student's ocean literacy increase?	Y/N
9.	Did you use the activities in the Teacher's Guide?	Y/N
10.	Has your school reduced the use of plastic as a result of this education programme?	Y/N
		Stopped using single-use plastic in the canteen
		Asked for plastic-free student lunches
		Taken the Clean Seas pledge (see volvooceanrace.com/pledge)
		Other:
11.	Did you complete the Champions for the Sea process with your students?	Y/N
	i.e. complete the Wisdom's worksheets and Champion Challenges for students to obtain their certificate and all badges?	
	Comments	
Please rate the Volvo Ocean Race Education Programme on scale 1 to 5 (1 is poor and 5 is excellent.)		
12.	Was the content suitable for your class curriculum?	1 to 5
13.	Was the content age-relevant for your class?	1 to 5
14.	Did your students' learning outcomes meet your expectations?	1 to 5
15.	Did your students enjoy using the resources?	1 to 5
16.	Did you enjoy using the resources?	1 to 5
17.	What was your favourite part of the programme?	
18.	What would you like to see improved in the programme?	

4. Results

There were 290 sign-ups with over 94,000 students reported engaged in the online education programme from 40 different countries. This indicates that the education programme engaged people from another 28 countries that were not directly linked to the race e.g. not a host city country.

4.1. Sign-Ups

The online sustainability education programme 'Champions for the Sea' was made available in November 2017 and accessible via volvooceanrace.com/education. We encouraged people to sign up for our sustainability education programme so we could track where the programme was being used globally. There were sign-ups from 40 different countries. The most sign-ups were from the USA (55) with 25273 students using the resources, followed by New Zealand (41;4409 students) UK (37; 7228 students) France (32; 2671 students) Spain (18; 1118 students) Netherlands (14;18664 students) Hong Kong (13;

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4268 students) Ireland (10; 231 students). Canada and Brazil only had six sign-ups but the number of students using the resources was high; 1052 and 6001 respectively. Australia had nine sign-ups and used the programme with 775 students. Sweden (4;119 students) India (4;75 students) also signed up to use the programme. Norway and Greece both had 3 sign-ups. Twenty-eight other countries were engaged in the education programme even though the race was not visited there or directly engaged with the country (see Figure 3).

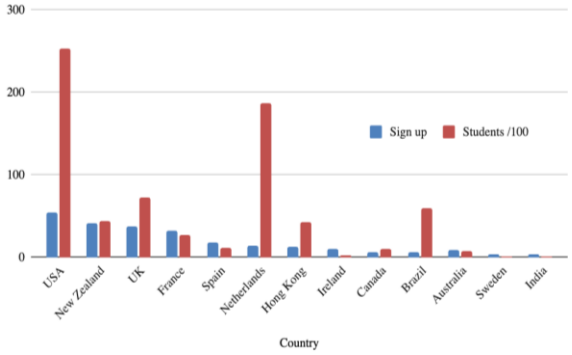

Figure 3. Number of Sign-ups from the Top Countries

Figure 3 shows the number of people signed up to use sustainability education programme and the number of students (divided by 100) in each country from the top countries engaged in the Volvo Ocean Race 2017-18 sustainability education programme.

Singapore, Mexico, Italy, Germany, Dominican Republic and China each had 2 sign-ups with student numbers ranging from 30 to 300. There was one sign-up from each of the following countries with a range of student numbers using the resources from 1 up to 550; Vietnam, United Arab Emirates, Trinidad and Tobago, Timor Lest Thailand, Switzerland, South Africa, Portugal, Poland, Nigeria, Luxembourg, Indonesia, Guernsey, Guam, Ghana, Estonia, Ecuador, Bulgaria and Austria. (It is important to note that people did not have to sign up to access our resources therefore some information on users may not be recorded).

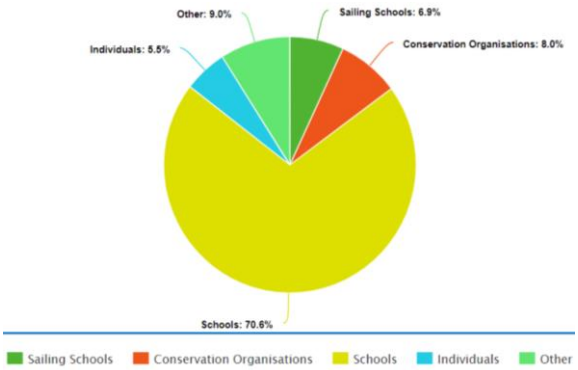

Figure 4. Range of Different Entities

Sign-ups came from a range of people including, teachers, parents, hospitals, conservation agencies, sailing schools, homeschoolers, and art galleries (see Figure 4). Figure 4 shows the range of different entities that signed up to use the sustainability education programme for the Volvo Ocean Race 2017-18.

4.2. Participant Feedback

We received feedback from 16 people who had signed up to use Champions for the Sea from seven countries: USA (6), New Zealand (5), while Ireland, Brazil, Sweden and the UK all had one person send feedback (see Figure 5). Figure 5 shows where the participants were from who gave feedback on the sustainability education programme for the Volvo Ocean Race 2017-18.

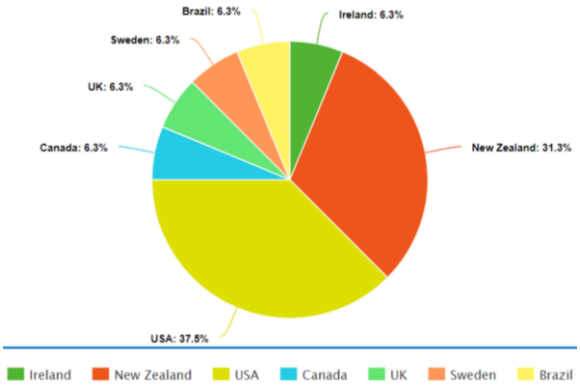

Figure 5. Countries that participated in the survey of the Sustainability Education Programme for the Volvo Ocean Race 2017-18

The participants used the resources with several age groups from 6 years old to adults. Most participants (50%) used the programme with 8- to 10-year-olds (see Figure 6).

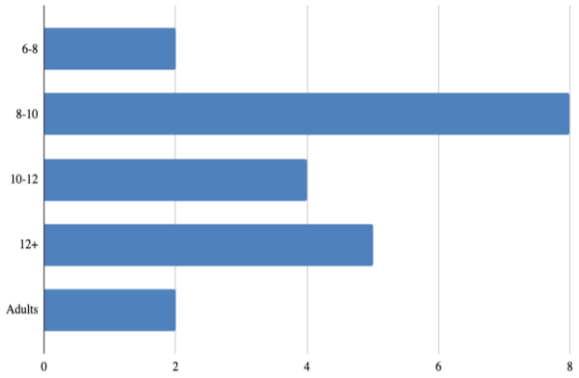

Figure 6. Participants Age Groups

Figure 6 shows the different age groups that the 16 participants of the feedback survey used the

 | DOI: 10.20533/ijcdse.2042.6364.2024.0607

sustainability education programme during the Volvo Ocean Race 2017-18.

All 16 participants (100%) reported that their ocean literacy increased through their knowledge of ocean health gained from using the Volvo Ocean Race's sustainability education programme. All participants reported (100%) that their student's ocean literacy had increased after using the programme, which would have been assessed by pre and post intervention quizzes and observations by the educators.

4.3. Topics Used and Curriculum Alignment

All four topics of the Champions for the Sea programme were used by the participants. However, the use of the topics varied - 75% of the participants used Topic 1; The Volvo Ocean Race, 100% used Topic 2; What is Ocean Plastic Pollution, 94% used Topic 3; Ways to reduce Ocean Plastic Pollution and only 44% used Topic 4; My Positive Plastic Footprint.

Champions for the Sea Topics were used to facilitate several subjects in the classroom as part of their curriculum. Some educators used the programme for multiple subjects (75%) whilst others just used it for one subject (25%). As well as Languages, Math, Geography, Science, History and Environmental / Global Stewardship some educators used the programme for Art and Technology and another educator used the programme for Social Science.

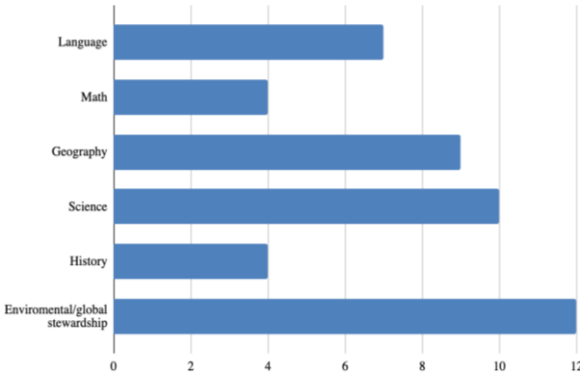

Figure 7. Different Subjects used in the sustainability education programme

Figure 7 shows the different subjects that the participants used in the sustainability education programme for during the Volvo Ocean Race 2017-18.

Participants self-reported their enjoyment of using the resources in the questionnaire using a Likert scale, the educators' enjoyment ranged from 3 to 5 on the Likert scale with 3 being somewhat enjoyed (6%) to 5 being very much enjoyed (94%) using the resources. The educators were also asked how they felt their students enjoyed using the resources which also ranged from 3 to 5 on the Likert scale; somewhat enjoyed (12.5%) to enjoyed (12.5%) and very much enjoyed (75%) using the resources.

4.4. Pro-environmental Behaviour regarding single-use plastics

Sixty-two per cent of the participants reported reducing the use of plastics in their schools because of participating in the ocean education programme. Twenty-five per cent of the participants reported having stopped using single-use plastics in the canteen, 12.5% of participants asked for plastic-free student lunches, and 44% of the participants signed up to support the United Nations Clean Seas pledge. Some of the teachers reported they were working towards eliminating plastic and styrofoam food containers in school or discussed the issues with single-use plastic like Glad Wrap/cling film and looked at solutions like beeswax covers instead; one of the educators also reported the students took part in a beach clean and hope to organise more.

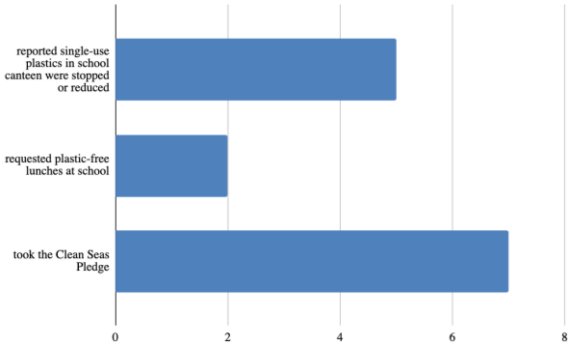

Figure 8. Different Pro-environmental Behaviours

Figure 8 shows the different pro-environmental behaviours of the participants in the survey, having used the sustainability education programme during the Volvo Ocean Race 2017-18.

4.5. Qualitative feedback from educators who participated in the survey

Within the feedback questionnaires for the educators there were also open-ended questions to qualitatively assess what the educators thought about the Champions for the Sea resources. This included comments about their favourite parts of the programme which ranged from the excitement of the race and following it as a class to how inspiring it was as indicated in the below quotes:

"*I thought the entire programme was inspiring - videos were used as a backdrop for a display in the hospital foyer about reducing the use of plastics…"* Auckland City Hospital

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"We loved following on the tracker and looking on the globe to see the locations of the boats. The drone footage and daily updates were awesome! We watched them from the start of leg 1 to the finish! We had a "Where are they now? Bulletin board with all the boats and their scores etc. We loved all of Dee's blogs and some of the others too. We loved the daily pics and the kids loved learning about life on board such as eating, sleeping, and bathroom stuff. It was the highlight of entire year! We went nautical in Grade One!" Canadian Elementary School Teacher

"We followed the race all the time. Some of the pupils came to school in the morning and knew about the race from the morning. Every day we were looking at the map. The pupils were very serious about all the things about animals and plastic. They found out that in school and at home we care about plastic." Swedish Educator

Other themes identified by the analysis indicated some suggestions about how the programme could be included more in curricula, or digitized and other content that would be good to see in the programme as indicated in the comments below:

"*I would love to see it continue for the next edition with the knowledge, energy and enthusiasm that was delivered for this race. Thank you for all your effort!"* Elementary school teacher, USA

"*There's so much content! That would usually be great, and the curriculum is fantastic, but we in the UK are bound by national curriculum and exam boards leaving very little time to cover extra material. A bite-size version per discipline would be helpful.*" UK Teacher

"*More videos to support the materials and as resources.*" Educator, USA

"*We are a bring your own device school, to help save paper. It would be good if the worksheets were compatible with that, to save printing*." Educator, New Zealand

5. Discussion and Conclusion

It is clear from this research that the participants' exposure to the sustainability education programme of the Volvo Ocean Race 2017-18 - Champions for the Sea topics had a positive influence on the educator's and student's ocean literacy. It also increased their pro-environmental behaviour in school, specifically regarding single-use plastics. This research helps to reinforce O' Brien et al 2023 suggestions that using informal ocean literacy programs alongside formal school curricula can help promote greater ocean literacy, in turn helping to address the global challenges of ocean literacy and the many directives and calls by the Ocean Decade, United Nations SDG 14, European Marine Board and EU Commission.

The Champions for the Sea programme was created with many of the dimensions referred to in the broad ocean literacy framework by Brennan et al (2019) and McKinley et al (2023) which shows how using social-emotional learning, inquiry, place-based, peer to peer communications and reflective and active learning techniques can help increase awareness and pro-environmental behaviour from an informal ocean literacy programme for primary school users. The findings of this research further emphasise the opportunity and importance of using alternative informal education platforms like sports and sporting events to increase ocean literacy. Using the sport of sailing as a platform for ocean literacy has engaged many more people from all walks of life to understand the importance of the ocean and why we need to protect it. Future work must explore these opportunities and how they can be used to further the goals of the UN Ocean Decade and other commitments.

Having an ocean literacy programme embedded with the Volvo Ocean Race 2017-18 also enabled further outreach and awareness of the race with many countries that were not involved with race stopovers, indicating the benefits of having such a programme for a global sporting platform. It was clear that all participants wanted to know more about what ocean plastic pollution is and most wanted to know how to reduce ocean plastic pollution, not all participants were interested in the actual Volvo Ocean Race in Topic 1 or the final Topic on how to have a positive plastic footprint as they may have already obtained enough knowledge at the time on tangible actions from Topic 3 How to reduce Ocean Plastic Pollution. Further research would need to be undertaken to understand the drop-off in the use of the last module; Topic 4 My Positive Plastic Footprint.

Using the Volvo Ocean Race 2017-18 as a global sporting platform to ignite excitement around ocean literacy and often hard-to-grasp concepts related to ocean pollution and single-use plastics proved to be a positive influence on ocean literacy and pro-environmental behaviour with the participants of this research.

6. Research Limitations

While the study has provided useful insights, the low sample size (16) in this research is a noted limitation and it is important to be aware that this may not give the overall picture of how the programme influenced other users and their students. This represented approximately 5% of the overall users (290) who had signed up to use the Champions for the Sea programme with their students and 8% of the educators (200) who agreed to be contacted for the

 | DOI: 10.20533/ijcdse.2042.6364.2024.0607

research. Although this is a low response rate, this data should not be discounted as it was also backed up with qualitative data on tangible actions and impressions of the participants on the programme.

Participants were only from seven countries when the programme was being used in 40 countries, therefore this research should not be considered to be fully representative of the overall use of the programme. Further research to explore impact in the different countries and variation of actions due to locations, cultures and other regional factors would benefit assessment of the programme.

Self-reporting is a well-documented research method used in many social science studies as a good way to obtain data from large numbers of participants. However, there are sometimes issues regarding over-reporting higher rates of positive behaviours being undertaken by the participant. For this research, there was no way to evaluate if this was happening due to time constraints.

7. References

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8. Conflicts of Interest

There are no identified conflicts of interest in this research. The author of this paper consults for The Ocean Race (formerly known as the Volvo Ocean Race) as a Senior Advisor on their ocean literacy programmes. No payment was received to conduct this research.

9. Acknowledgements

I would like to acknowledge The Ocean Race, formerly known as the Volvo Ocean Race for providing the platform and the data to undertake this ocean literacy research. A very big thank you to the educators who took their time to fill in the online feedback forms. I would also like to thank Dr. Anita McKeown and Rebecca White for reading over the content and for their advice on this submission.

