The Future of Maritime Education

How worthwhile is it to scale up the Maritime Futures curriculum in the UK/British Isles?

Written By Shah Arafah Uddin

August 2021

Research Question: How worthwhile is it to scale up the Maritime Futures curriculum in the UK/British Isles?

ABSTRACT

There is no doubt of the importance that the Maritime Industry has on the UK and its economy. This roots from trade to tourism, energy to super yachts. However, the importance is not relayed onto younger people as they are not aware of what the industry consists of, leading to shortage of workers. There are many issues that the workplace is suffering from. This is from an increase in skills shortages in areas such as STEM subjects as well as the rise in gender inequality for women. To combat this, schools such as Cowes Enterprise College have introduced the Maritime Futures Curriculum to help address these issues, but more importantly to create awareness and encourage students to take up a role in the industry. This scheme is fairly new so there are no results to see if this curriculum has increased uptake. This report will investigate if it is worthwhile to broaden this curriculum around the UK and British Isles. I have found out that it is worthwhile to introduce similar curriculums to the areas that have similar economic profiles and reliance in the industry.

INTRODUCTION

The maritime industry in the UK

In this report I will be investigating whether it is worthwhile to scale up the Maritime Futures Curriculum, offered at Cowes Enterprise College in Isle of Wight, in the UK/British Isles. The Maritime sector is defined as consisting of the individual shipping, ports, marine and maritime business services industries, each of which comprise a diverse array of activities [Career Transition Partnership, 2021]. This stems from aspects such as the cruise/tourism industry which is estimated to contribute £10 billion to the UK economy every year to the offshore oils and gas industry which employs over 375,000 people in the UK [Solent University, 2020].
The sector can be divided into seven main sub sectors:

- Fishing
- Leisure marine
- Marine search and rescue
- Merchant Navy
- Ports
- Royal Navy
- tugs and workboats

The UK has a long and proud maritime heritage recorded from as early as the 18th century due to the creation of Lloyd's list which provides weekly shipping news in London. Developments in transport and trade in the 19th century accelerated globalisation as the evolution of steamboats/steamships replaced horse-drawn carriages, increasing the interconnection between countries. Currently, the maritime industry is responsible for facilitating 95% of UK global trade, contributing nearly £40 billion to the country's economy. The UK maritime sector employs over 185,000 new people annually and already employs nearly 1 million throughout the nation [Solent University, 2020].

The Maritime industries have come together to introduce 5 priorities to make progress on. [Maritime UK,2020]
This includes:

- **People-** The aim is to have talented and diverse workforce who are well-trained to use their talents
- **Innovation-** The aim is to position the UK as a leader in innovation
- **Regional Growth-** The aim is to boost prosperity and opportunity by working with the government to create more pro-investment conditions for maritime businesses
- **Environment-** The maritime industry wants to minimise the sector's impact upon the environment and enable effective projects and initiatives that enhance environmental sustainability
- **Competitiveness-** The sector aims to attract new maritime businesses to the UK by working with the government to enhance competitiveness.

Whilst the maritime sector is hugely important, there is an increase in skills shortages and gross gender inequality; especially in the STEM areas. The maritime industry is rapidly growing yet there are not enough skilled workers to fill up these positions. It is predicted that there will be a Marine skills shortage of over 300,000 seafarers by 2050 [Robert,2018] and currently a shortage of 147,000 workers [World Maritime University, 2019]. The maritime industry has a history of gender inequality, from superstitions to stereotypes. Recent figures show that women only make up 2% of the global maritime industry with the majority of women working in ferries and cruise ships [Maritime UK, 2018].

The Maritime Futures curriculum

The Maritime Futures curriculum was introduced by Cowes Enterprise College (CEC) based in the Isle of Wight. Students study maritime subjects embedded/woven in traditional curriculum subjects. Over 400 students have taken part, but only 200 have so far completed it (2019/2020). According to the Principal at CEC, the curriculum aims to '*anchor in our local environment, introduce KS3 children to maritime employment possibilities and offer opportunities to explore and learn through the maritime sector*'. This curriculum aids pupils to develop interconnected and in-depth knowledge throughout a range of subjects which interlink to the real world maritime settings.

From my contextual reading, I have come up with 3 sub questions/areas that I will investigate:
1. The maritime industry context of Cowes Enterprise College
2. Understanding the Maritime Futures curriculum and what it offers
3. Explore potential demand for a Maritime curriculum across the UK /British Isles

METHODOLOGY

The research takes a mixed-method approach. Principally, document analysis was carried out using resources from the internet, including information from websites to online reports written by others. Documents were also collected from the school and Edge Foundation. I have kept in mind that some of this data is outdated and tried to use data which is up to date. This is one of the limitations of this method. Documents were collated, selected, reviewed and cross-checked against each other to ensure reliability. Empirical evidence was collated from the documents in order to help answer the research questions. Another method used in this report is a structured interview in the form of an email with the principle of Cowes Enterprise College. This has given me both qualitative and quantitative data, which will allow me to answer/investigate sub question 1 and 2. This method is reliable as I have received data from someone who has experience in this field of knowledge.

CASE STUDY

Cowes Enterprise College is a secondary school/sixth form based in the Isle of Wight with an academy status. The school's capacity holds around 1585 students from the ages of 11-19. The school is run, along with 38 other schools across England, by the Ormiston Academy Trust which is an education charity. They have been awarded £97,000 by the Edge Foundation to develop a curriculum to help meet skills gaps in the maritime industry. Nick Hudson, the Chief Executive Officer of Ormiston Academies Trust, stated that '*This work [curriculum] will address the skills needs of the maritime industry whilst ensuring young people at Cowes Enterprise College are provided with the knowledge and skills needed for the maritime sector*'. The school's motto is 'education for life' which is significant in the case of their new path in vocational education. Not only getting pupils ready for exams but also introducing them to new transferable skills for their future.

FINDINGS

In this section, I will display my findings into my three areas of investigation.

The maritime industry context of Cowes Enterprise College

The Isle of Wight has a population of 142,300; 62,100 (43,6%) are economically active [Nomis, 2020]. The Maritime Industry is a key industrial sector with relatively strong local presence. The Island has approximately 700 employees working in the sector, though this doesn't take into account those who are self-employed [as of 2017] and accounts for 1.4% of all employees on the Island [Isle of Wight Economic Profile 2019].

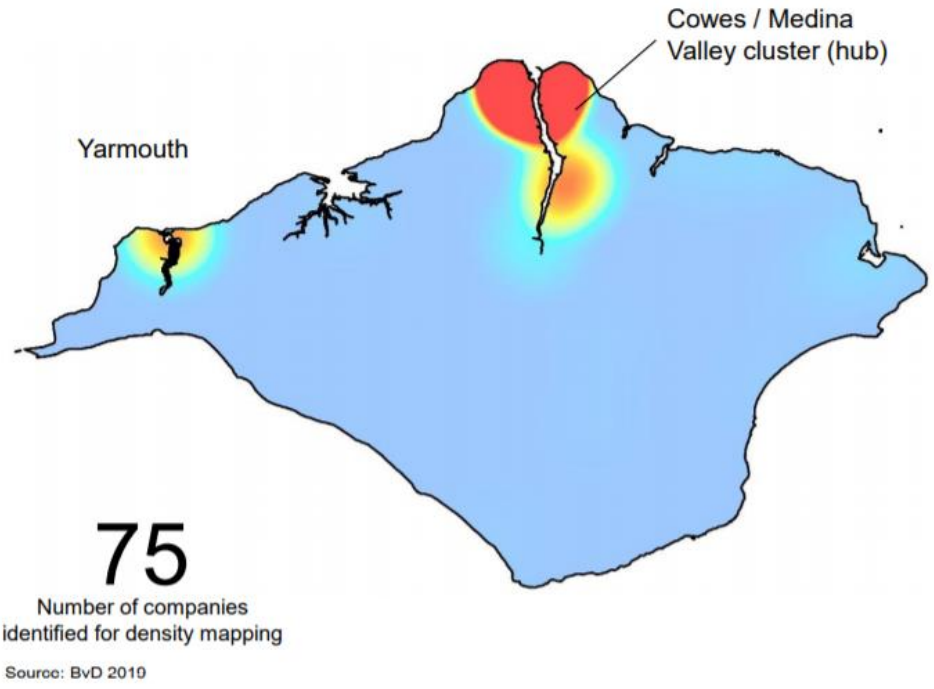


Figure 1.1 shows a density map based on postcode proximity and employee weighting. From the map, there is a very high presence of businesses around Cowes compared to Yarmouth. .

There is a diverse and increasing range of jobs in the Maritime sector from engineering to welder/fabricator, but there are also many jobs that are in demand and need filling. Due to the growth, there are not enough skilled marine engineers/workers to keep up with this growth; it is estimated that there will be a skill shortage of over 300,000 seafarers by 2050 [Robert,2018]. There is a greater demand in which STEM skills will become more prevalent. This includes science-based skills and types of engineering such as electronics, software, robotics, mechanical engineering, marine and system engineers, and environmental scientists. The Isle of Wight is currently underrepresented in employees in those high-tech sectors like engineering. There are 3 main factors for this change. One reason for this is the usage of new technology which is significantly affecting the required core skills sets needed. Recent figures issued by Lloyd's Maritime Academy show that 67% of the 500 people interviewed believe that there is a skills gap within the Maritime sector [Lloyd's Maritime Academy, 2019]. Many workers are not competent or skilled enough in their role. Another reason is the drive for greater environmental sustainability, decreasing the amount of carbon dioxide and greenhouse gases in general. Finally, there is a rise in global competition and the ability for the marine sector to upgrade into more knowledge intensive and research-based sectors in order to compete with lower cost competitors from abroad.

To combat this, the UK's Maritime Minister Nusrat Ghani revealed that the UK Government will fund £730,000 to boost maritime careers with the aim of increasing diversity and decreasing the alarmingly high skills gap percentage.

The breakdown of this funding is as follows [Saraogi,2019]:

- £40,000 will be used for the 'Maritime and Me' initiative to encourage girls to join the maritime industry
- £250,000 will be used to increase awareness of maritime careers in schools and promoting the sector to students
- £300,000 will be used to create a new Maritime Skills Commission to help ensure that the training curriculum continues to evolve.

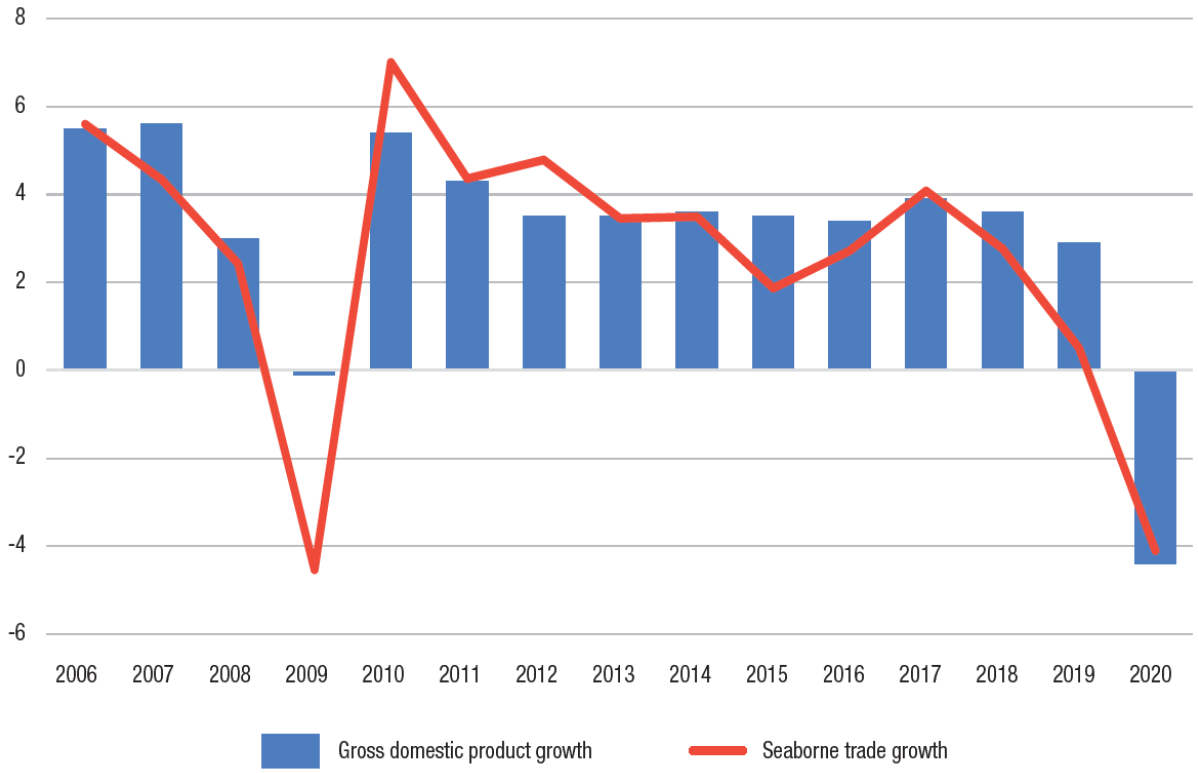
Alongside an increase in skills gaps, there is also a widening gender inequality within the Maritime Industry. Globally, only 2% of 1.2 million seafarers are women [Women in Maritime, 2019]. The maritime industry has adopted initiatives such as the International Maritime Organisations (IMO) gender programme which aims to improve the awareness and representation of women to help reduce the existing gender gap. There is a negative perception of women in the industry as women are seen as fragile.

How has Covid 19 affected the maritime industry and education?

Covid 19 has hit the maritime industry severely. It has disrupted supply chains, trade (reduced demand), as well as economic input/output in various countries. Some of the issues that the industry is facing are:

-Port closure: Many ports have been closed or functioning with few workers. This causes congestion regarding wanted/left cargo and vessels near a port without a destination to go to.
-Ship Building and Repair: Setbacks have been created through disruptions between the supply chain and the workforce. They are solely dependent on material therefore as the shipping has been in decline, employees are not getting their material on time.
-Cruise Lines/Tourism: Many cruise ships like the Royal Caribbean have halted their operations as a result of many infections on board. It is estimated that the cruise line will lose around $250 million and $290 million per month [Globaldata, 2021]. There are still many limits on international tourism meaning this industry is far from recovery.
-Reduced employees: Many workers are either let go or are self isolating to reduce the risk of transmission. This means that there are less people doing the work leading to a slower workforce.

Figure 1: Development of international maritime trade and global output, 2006–2020



Source: UNCTAD calculations based on data from UNCTADstat.

Figure 1 shows that in 2020 the global output has reached its lowest point since 2009.

Not only has the Coronavirus affected the industry, it has also affected education and training. The 2020/2021 academic year has been severely disrupted/interrupted therefore students are not

completing some courses leading to a rise in the number of cadets and seafarers dropping out. Additionally, many courses require onboarding experiences within the industry however because of restrictions implemented there are not being completed. The pandemic has forced many schools to teach online which is sometimes a problem as maritime education heavily resolves around face to face teaching.

Understanding the Maritime Futures curriculum and what it offers

The Maritime Futures Curriculum was introduced to Cowes Enterprise College, through financial support by the Edge Foundation after receiving a grant of £97000 in 2018/19. Over 10% of the lessons in KS3 are currently linked to the Maritime Industry. The Curriculum offers interweaving knowledge of the industry, employer knowledge and skills as well as expertise and real world learning opportunities. This encourages local business to interact with students, informing them of career opportunities, introducing them to new skills and helping add relevance and context to maritime studies. In context with our case study, the school works with different stakeholders to provide this curriculum; an example of this includes: Cowes Harbour Commission which have worked with Year 7s to look at the Cowes Breakwater and different coastal features between East Cowes and Gurnard.

CEC's curriculum provides this for their KS3 pupils; since it was introduced in 2019 400 students have participated in this but only 200 have been able to complete it as Covid has severely disrupted the delivery of the course.

According to the students at Cowes Enterprise College, they have reported being '*engaged with the learning that has been created and enjoying the 'different' aspects of the curriculum*'. Additionally they enjoyed having *'much more knowledge about the maritime opportunities on their doorstep*'. However, no student has managed to progress further on in the maritime industry from the school due to the first cohort only being in year 9/10 in 2021.

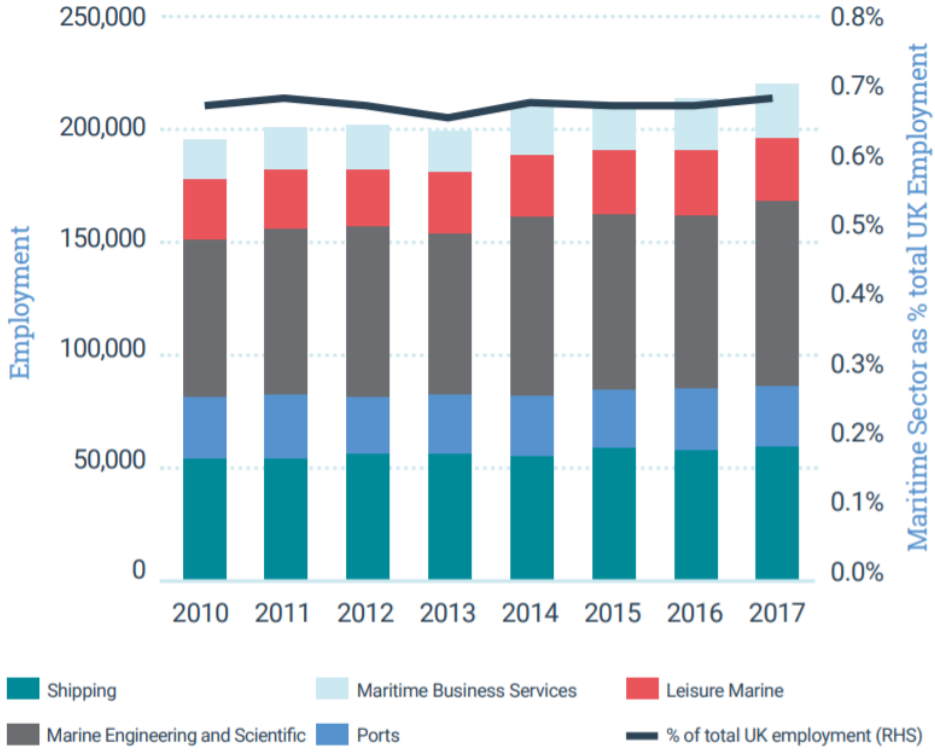
Nevertheless, there are colleges/higher education practices who do educate pupils in relation to the Maritime Industry. An example of this is the United Kingdom Sailing Academy [UKSA] based in Cowes in the Isle of Wight. UKSA teaches a 2-year Maritime Foundation course for those who have an 'Interest or experience in water sports, outdoor education or maritime industry' to provide the essential skills, qualifications and knowledge required to start a career within the Maritime Industry. As well as Universities like the University of Plymouth who do a 3 year course on Navigation and Maritime Science. The course includes different modules ranging from Marine Operations, Coastal Navigation to Management and Leadership. Both of these offer local progression routes for those interested in going into the maritime industry.

Explore potential demand for a Maritime curriculum across the UK /British Isles

Maritime industry in the UK:

The UK is surrounded by Maritime. The distribution of economic activity is influenced by its geography, demographic and its proximity to the sea. According to the State of the Maritime Nation Report 2019, it is estimated that direct employment is heavily concentrated in Scotland, London and South East England. Both London and Scotland make up 19% of the UK maritime workforce, with 42,000 people and 41,000 people working respectively. The South-East contributes to 18% with 40,000 employees whilst the South West and North West contribute less with 13% and 10% respectively. [Maritime UK, 2019]

Figure 5: The direct contribution of the Maritime Sector through employment, and the sector's share of total UK employment, 2010 to 2017



Source: UKCoS, British Marine, PwC, FAME, ONS, Cebr analysis

Figure 5 shows that the Maritime Sector directly supported around 220,000 jobs for UK employees in 2017 compared to the estimated 196,000 in 2010 which is a 12% (24000 jobs) increase.

Current education and training options in UK

Maritime education and training opportunities are offered nationwide, mainly at university and apprenticeship levels (age 16 and above). It is often argued that maritime education is outdated and there is a demand to change the course/training to modernise it. Without this change, there could

be increasing skill shortages. The Principal of South Shields Marine School, Simon Ashton has commented on how the emergence of technology and '*better trained personnel with broader skills are required to be at the helm*' (2021). Therefore it is vital to adapt the courses to be a chance to attract younger people in this profession in order for the UK to stay competitive.

Some colleges are already adapting/introducing their courses. One example is the City of Glasgow College who offer Nautical training to enhance and develop pupils' knowledge within this sector, encouraging career opportunities. They offer pre-cadet programmes for school leavers at 15 or 16 which are tailored to the STEM subjects as well as progressing to Honours Degree level qualifications which includes modules such as:

- Deck Cadetship
- Pre-cadet training
- Marine Engineering Cadetship (and many more)

The Principal and Chief Executive, Paul Little states that this programme '*allow[s] our students a blended learning approach matched with hands-on learning developed in tandem with industry needs.*'

Another example is the Fleetwood Nautical Campus, in north west England which offers a marine engineer cadet programme at the age of 16 and those who are successful in it can progress to University achieving a full BSc (Hons). The school has partnered with the Marine Society to provide this.

Apprenticeships include Maritime Operations Officers which helps coordinate maritime search and rescue, maritime caterer who works within the hospitality sector in the industry and Marine surveyor who makes sure marine vessels are complying with standards and regulations.

Furthermore, there are some 'courses' aimed at younger children in KS1/2 like the Maritime curriculum as Cowes. The Ocean Conservation Trust has developed a new trial curriculum with 5 schools in Plymouth called the 'Connecting us with our Ocean' project to create an interest in marine conservation. These primary schools include:

- Eggbuckland Vale
- Leigham
- Manadon Vale
- Thornbury
- Widey Court

The Trust has partnered with Connect Academy Trust to design a programme to integrate the ocean into core subjects [2020]. Nicola Bridge (Head of Conservation Education and Communications) mentioned that '*[the ocean] is notably missing from the current English National Curriculum, which is something we, as an Ocean conservation charity, feel strongly needs to change...and Ocean related teaching should be an essential part of the core curriculum offering for all schools*.'

Discussion and Conclusion

In this section, I will answer the research question:

How worthwhile is it to scale up the Maritime Futures curriculum in the UK/British Isles?

The evidence suggests that to an extent the Maritime Futures curriculum is worth scaling up across the UK/British Isle, as maritime education is crucial in the UK due to the presence of a substantial maritime industry. It is vital for young people to be aware of the possibilities of having a career in the industry. It is great that the curriculum is expanding and being adapted to make it more interconnected to the real world but it is also important to take into account that this should be consistent throughout the pupils' education. As mentioned previously, there are some initiatives like the 'Connecting us with our Ocean' project that help explore the maritime/ocean in primary school. Though this is a good start as it gives one an idea for a career, we should also remember that a pupil's choice of career is always dynamic and changing as they grow up. Additionally, the industry is also dynamic and developing and we should ensure that the KS3 Maritime Futures Curriculum stays up to date and relevant to changes in the industry.

It is important to create this awareness and combat poor perceptions of the maritime industry early on in pupils' lives as this is where they make their career choices or have an idea of what they want to do. Receiving first hand experience and information from employees directly influences one's decision; engaging and inspiring them. The maritime curriculum helps break down barriers within the industry by increasing awareness and addressing attitudes. It also helps to address some of the issues the industry is facing, such as encouraging women to consider a role in the industry and increasing the necessary skill sets.

Evidence has shown that real-world learning, particularly integrating work and careers education, increases students' understanding, by providing them with meaningful opportunities to apply their knowledge. It also can help students understand more about employment opportunities by helping them to develop the requisite knowledge and skills that will enable them to plan and manage their lifelong career journey (Andrews 2011; Hooley et el., 2011). Furthermore, project based learning allows students' understanding to widen as they are given meaningful opportunities to apply, interpret and solve problems situated in the real world. [Rogers & McGrath, 2021]. This is a fundamental aspect in relation to the maritime futures curriculum at Cowes Enterprise College as they use/integrate real world scenarios in teaching, and therefore should be an essential part of any maritime curriculum

These curriculums happen on the coastline mainly in the south of England, but the question is if it is feasible and worthwhile to do so. It makes sense for this curriculum to happen in the Isle of Wight as it does rely on the maritime industry in terms of the economy/employment. It could also be worthwhile to introduce a similar curriculum in schools on other islands across the British Isles that have a similar economic profile and heavy maritime industry. Likewise coastal regions in the UK which have a strong maritime industry such as the South East of England, London and Scotland. However it may not be as worthwhile to offer it in areas where this industry is small, particularly as such as the delivery of the curriculum relies very much on employer engagement which would not

be possible where there are few or no suitable employers. However, as discussed above Bridge (2020) has highlighted a greater need for ocean/maritime education, particularly in relation to conservation. Potentially in these areas, students should have a choice if they want to have maritime education woven into their every day curriculum. With advances in online learning, more research could be done to look into the viability of delivering online elements in order to reach other areas of the UK.

REFERENCES

Ashton, S. (2021). Rapid response required. *Nautilus International.* Available at: https://www.nautilusint.org/en/news-insight/telegraph/rapid-response-required/

Career Transition Partnership (2020). Maritime Industry Sector Guide. Available at:https://www.ctp.org.uk/assets/x/53125

Cruise Critic (2021). What is the Economic Impact of the Pause in Cruise Operations to the UK?. Available at: https://www.cruisecritic.co.uk/articles.cfm?ID=5639

GlobalData (2021). Cruise industry holds a bleak outlook for 2021. Available at: https://www.ship-technology.com/comment/cruise-industry-2021-outlook/

International Maritime Organisation (2019). Women in Maritime. Available at: https://www.imo.org/en/OurWork/TechnicalCooperation/Pages/WomenInMaritime.aspx

Isle of Wight Council Economic Profile (2019). Isle of Wight Economic Profile. Available at: https://www.iow.gov.uk/azservices/documents/1433-Isle-of-Wight-Economic-ProfileFinalFebruary2020.pdf

Lloyd's Maritime Academy (2019). More Needs to be Done to Address Maritime Skills Gap. Available at: https://www.hellenicshippingnews.com/more-needs-to-be-done-to-address-maritime-skills-gap/

Maritime UK (2019). State of the maritime nation report 2019. Available at: https://www.maritimeuk.org/media-centre/publications/state-maritime-nation-report-2019/

Maritime UK (2021). About us. available at: https://www.maritimeuk.org/about/about-us/#:~:text=Supporting%20over%201%20million%20jobs,then%20the%20 average%20UK%20worker

Maritime UK (2021). Priorities. Available at: https://www.maritimeuk.org/priorities/

Maritime UK (2018). Women In Maritime. Available at: https://www.britishports.org.uk/system/files/documents/women_in_maritime_taskforce_bpa_conf_2018.pdf

Nomis (2021). Labour Market Profile Isle of Wight. Available at: https://www.nomisweb.co.uk/reports/lmp/la/1946157281/report.aspx#tabrespop

Robert, M (2018). How to Address the Marine Skills Shortage. Available at: https://blog.v-hr.com/blog/how-to-address-the-marine-skills-shortage

Saraogi,V (2019). UK Government pledges £730,000 to support maritime industry. Available at: https://www.ship-technology.com/news/uk-government-pledges-support-maritime-industry/

Ship-technology (2018). Industry views: addressing gender inequality in the maritime sector. Available at : https://www.ship-technology.com/features/industry-views-addressing-gender-inequality-maritime-sector/

Solent university,(2020) Offshore and gas and renewables . Available at: https://maritime.solent.ac.uk/maritime-industry

Solent University,(2020). The Industry. Available at : https://maritime.solent.ac.uk/maritime-industry

World Maritime University, (2019). THIRD WMU INTERNATIONAL WOMEN'S CONFERENCE EMPOWERING WOMEN IN THE MARITIME COMMUNITY. Available at: https://safety4sea.com/wp-content/uploads/2019/09/WMU-Third-WMU-International-Womens-Conference-Empowering-Women-in-maritime-community-2019_09.pdf?__cf_chl_jschl_tk__=pmd_k3EuVg0_tjJDkuixk24Wg_0StWc3pPC6xRnSEiK_.eY-1629725831-0-gqNtZGzNAnujcnBszQkR

UNCTAD,(2020), COVID-19 cuts global maritime trade, transforms industry. Available at: https://unctad.org/news/covid-19-cuts-global-maritime-trade-transforms-industry