SKILLSEA

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GUIDE ON DESIGN, IMPLEMENTATION OF EDUCATIONAL PACKAGES INCLUDING LESSONS LEARNED (D2.1)

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Summary SkillSea Report

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Future-proof skills for the maritime transport sector

Project SkillSea is co-funded by the Erasmus+ Programme of the European Union

Technology and digitalisation are transforming the shipping industry. 'Smart' ships are coming into service, creating demand for a new generation of competent, highly skilled maritime professionals. Europe is a traditional global source of maritime expertise, and the four-year SkillSea project is launched with the aim of ensuring that the region's maritime professionals possess key digital, green, and soft management skills for the rapidly changing maritime labour market. It seeks to not only produce a sustainable skills strategy for European maritime professionals but also to increase the number of these professionals - enhancing the safety and efficiency of this vital sector.

The first part of the SkillSea project, WP1, assesses seafarers' current education and training and compares them with current and future competence needs, subsequently defining knowledge and competence gaps.
WP2 proceeded with the findings of WP1 and developed a systematic approach for designing training programmes to bridge the defined gaps. This document presents the design guide, an explanation of the seven educational packages, and the Train-the-Trainer Manual. The insights and benefits from lessons learned during the design and piloting of the educational packages (EPs) are included.

Toolbox design guide

This report presents how the SkillSea partnership has developed a toolbox design guide as a system of methodologies to develop curricula, review, and validation as a means of quality assurance measures to cover every sequence of EP development.
The EPs can be used in any national education institution. For that reason, they are designed to be flexible and can be

- integrated into existing curricula
- adjusted to meet the needs of different target groups
- adapted to national requirements
- used with different teaching methods

Seven educational packages

Based on the findings and recommendations of WP1, the SkillSea partners have developed seven EPs to illustrate the use of the design guide.
The packages are described separately and are available on the SkillSea website, www.skillsea.eu.

The report introduces the Train-the-Trainer Manual to facilitate the implementation of the SkillSea EPs.

Train-the-Trainer

The Train-the-Trainer manual is created to provide a clear overview of the objectives of the SkillSea EPs, the background for the design, and their use.
During the design phase, the partner institutions have adopted European standard frameworks such as Bologne, Cedefop, and ESCO.
Terminology led to some confusion, as certain terms were interpreted differently by some group members. This led to the development of a Glossary, which is included in this report.

Lessons learned

This report also presents insights gained during the development process.
All partners were asked for feedback at regular intervals.
Most of the difficulties experienced were due to structural differences between the partner institutions or countries involved. As an example, the differences in the academic year should be mentioned. The summer holidays last from the end of June to the end of September, making scheduling meetings difficult.
Another issue was that whilst all maritime institutions educate to STCW standards, national approaches strongly influence education in the maritime industry

Recommendations

Collaboration between institutions across nationalities seemed more accessible when the same people were allocated to the project, and only a limited number of people were involved in each task.

1. Content

1. Introduction

The first part of the SkillSea project (Work Package 1, WP1) assesses seafarers' current education and training and compares them with current and future competence needs. WP1 then defines knowledge and competence gaps.

Work Package 2 (WP2) presents Educational Packages (EPs) that can fill the defined gaps. The EPs are structured measures to close the gaps punctually and can be used with current and future seafarers, providing flexible tools for up- and reskilling.

This report presents the systematic approach for designing such training programmes, including reviews, options for integration, and synergy. These are based on defined learning outcomes and aim for enhanced competencies. Included is a guide on lessons learned during the design and piloting of the EPs.

Two initial guides were envisioned at the application stage, one on curricula development and one on EPs. A further two guides were planned based on experiences – one on EP development and one on piloting. Ex-post, the advantage of gathering the material into a single guide became apparent to ensure the subject is presented coherently to the future reader.

2. Design and Implementation

The SkillSea project has revealed in deliverables D1.1.3, Future Skills and Competence Needs, and D1.3, Recommendation for Education and Training. The focus of the educational packages was further validated by deliverable D3.3, Employability anticipating skills needs and gap measurement. A particular need was identified for enhanced competencies of seafarers in five specific areas:

1. Green shipping
2. Digital technologies
3. Operation in a digital world
4. Innovation
5. Sea–land mobility

In WP2, seven Educational Packages (EPs) were created, tested and revised to cover all five areas. The EPs include the detailed elements in deliverables D1.1.3 Future Skills and Competence needs and D1.3 Recommendation for Education and Training.

Two EPs cover green skills and digital skills, respectively.

To understand the fast-evolving technological environment and enable seafarers to operate in green shipping and a digital world, one EP was developed in science, technology, engineering and mathematics (STEM). The grant proposal had already anticipated the need for competencies in this area.

WP1 found that for a better digital and green transition of the industry, innovation based on the experience and knowledge of seafarers needs to filter into the companies. Thus, to contribute to the maritime industry's potential, an EP on Intrapreneurship and Innovation followed logically.

An EP on leadership covers sea-land mobility and the transversal skills needed to move from one value chain to another. Deliverable D1.3, Recommendation for Education and Training, lists elements such as teamwork, leadership and communication and cultural awareness, which are included in the EP Leadership.

This leads to the following SkillSea educational packages:

1. Green Skills I: Energy-Efficient Ship Operation
2. Green Skills II: Vessel Performance Management Systems
3. Digital Skills I: Information Infrastructure
4. Digital Skills II: Maritime Cybersecurity
5. STEM: Operating in green and digital shipping
6. Innovation and Intrapreneurship
7. Leadership: Teamwork, leadership, culture

The choice of EPs is intended to be relevant for several job and/or occupational profiles.

The EPs are to be understood as extracurricular and, as such, not a part of the STCW requirements, but rather a supplement for upskilling or reskilling as needed. Thus, they should not be confused with "model courses" as laid down already in the application. Beyond transferring knowledge and skills and building competencies, they shall enhance mobility horizontally and/or vertically, or from sea-based to land-based jobs. Some of the subjects covered are included in the STCW Convention but at a lower level, limited to what is required for the safe operations of the ship.

National MET systems and backgrounds of students may vary considerably across jurisdictions. In addition, SkillSea partners agree that technological developments in many areas of the maritime industry are, and will remain, fast-paced. Moreover, certain aspects of the future of shipping – such as the feasibility of various alternative fuels – have not been fully established. For these reasons, developing ready-to-use educational packages has been deemed inappropriate. Instead, SkillSea EPs have been designed to demonstrate sustainable cooperation among industry stakeholders and maritime training and education institutions in developing future-focused courses for maritime education.

It is expected that SkillSea educational packages will be used to assist the development and implementation of a future-focused programme or course. However, the learning outcomes, syllabus and other content of the course need to be customised to meet the learning profiles of students as well as to account for their current knowledge base, skills, and the expected learning environment. If such changes are made, lecturers must ensure that various aspects of the course – such as learning outcomes, teaching methods and assessments – are realigned accordingly.

The EPs can be used in any national education institution. For that reason, they are designed to be flexible and can be

- integrated into existing curricula
- adjusted to meet the needs of different target groups
- adapted to national requirements
- used with different teaching methods.

This flexibility allows using substantially different target group backgrounds and curricular flows. Each EP suggests material as examples and illustrations for teaching and assessment.

Making the EPs future-proof lies in their simple, transparent, and recognisable form. Firstly, it is easy to adapt and develop EPs to meet the emerging needs for competencies. Secondly, the chosen form of communicating learning outcomes and achieved competencies promotes mobility as the educational packages, the rationale, and applicability are explained using terms defined under EQF.

Glossary and STCW compatibility

When designing the EPs for various countries and educational systems, it became clear that a common language was needed. In many cases, the same term was used by various members of the research team with a variety of meanings, and this caused misunderstandings.

A glossary was created to support understanding the terms used (Appendix 5). At the same time, the authors made sure that terminology was compatible with standard STCW terminology.

3. Train-the-Trainer manual

The Train-the-Trainer manual is created to provide a clear overview of the objectives of the SkillSea educational packages, the background for the design, and their use. The manual is a guide to be explored by educators before designing specific educational packages.

The manual is intended for teachers, instructors, lecturers and managers at Maritime Education and Training institutes (METs). It offers a series of three presentational videos that trainers can review, on an individual basis, before the delivery of any educational package. The videos are complemented by written material elaborating on the three themes:

- SkillSea background and choice of subjects
- Introduction to the educational packages
- Pedagogical approaches

The Train-the-Trainer manual aims to provide the support necessary for maritime lecturers, trainers, and instructors in implementing, fully or partially, EPs developed by the SkillSea project. This manual is designed for lecturers experienced in maritime education and training and does not cover basic educational principles or the nature of maritime education and training.

The proposed EPs offer example lesson plans and teaching materials. The learning outcomes, teaching, and assessment methods have been aligned for demonstration purposes. Implementing these EPs will require the development of learning and teaching resources. It may also require the professional development of the lecturers to update their knowledge with the latest industry trends.

4. Curricula development

During the first consortium meeting held in Svendborg, Denmark, in June 2019, the participating project partners met to share views and secure a common ground for collaboration. The partnership invited all partners to provide examples of curricula development to identify a best practice. Based on the first workshop, where the project partners were gathered, different national and local standards for developing curricula were presented and discussed.

Based on the outcome of the work groups, a draft of the first design guide was developed. The many different approaches were combined and transformed into recommendations now featured as the first part of the SkillSea toolbox design guide.

The toolbox design guide is our common standard for designing educational packages (Models with Learning Outcomes and suggestions on Assessment Methods and Delivery Models). Each element of the toolbox is described thoroughly in the design guide.

As the project aims to further mobility, making qualifications transparent and comparable, it was agreed to refer to the European Qualification Framework (EQF) as a common standard across national and local traditions. The design guide included the qualification level and the definition of learning outcomes. The learning outcomes follow the principles described in the Cedefop Handbook on Learning Outcomes (Cedefop 2018).

5. Toolbox design guide

The toolbox approach is introduced below.

The toolbox design guide is available on www.skillsea.eu

The goal of higher education is to enhance the competences of students. This is done through the definition and teaching of learning objectives. The SkillSea project has developed the toolbox approach to facilitate sharing courses (wrapped into educational packages) to increase student knowledge, attain learning objectives and eventually reach higher competences.

The toolbox shall also enable increased student mobility across Europe. The toolbox design guide was developed to support the work groups engaged in designing the educational packages and consists of an explanation of each step presented in the toolbox template.

The Toolbox Template	
Curriculum	
Learning objectives	
Target group	
Entry requirements	
Duration	
Assessment	
Course description	
Course outline	
Learning outcome	
Teaching methods	
Teaching material	
Assessment/exam	
Evaluation	
Course review	

Figure 1: The Toolbox Template

Curriculum

The first part of the design is curriculum development and the eventual fit of the respective package. The word curriculum is a broad term which can also be seen as a module part of a curriculum.
To define the exact learning outcome, it is necessary to know which target group and qualification level (EQF) the course aims at and where it might fit into a curriculum.

The curriculum elements are interdependent, as the qualification level and the decided learning outcome -– skills and competence – indicate what is to be assessed and the choice of the assessment method. When the skills needed are known, the qualifications and the competencies to be achieved may be described using the EQF descriptors.

Learning objectives
The learning objectives are based on the needs of the industry. A learning objective is a statement of teaching intentions and describes the specific areas covered in a course or a block of courses.

The target groups
Course target groups are identified as professionals expected to perform the duties requiring the skills and competencies defined in the learning objectives. Characteristics of a target group can be previous education and training, experience, level of responsibility, rank, age, and ambition. The need for defining a target group emerged during the development of the first two EPs, as a lack of shared understanding of the profile of the participants made it difficult to decide on the content of the course.

Entry requirements
The content and curricula elements of EQF levels are often subject to national-specific requirements. The design guide stated specific requirements, such as what was needed to follow the course. These requirements may regard competencies such as reading, language skills, maths, or specific technical knowledge or skills. Some EPs have included an initial test of the students to identify their competence level.

Duration
The course duration is stated in hours specified as guided learning hours and independent study, individually or in groups. The intended learning outcome should be achieved within the time stated.

Where applicable, the duration is stated in ECTS.

Assessment
The assessment method should mirror the desired learning outcome.

Course description
The second part of the toolbox covers the course details, which may include learning outcome, course outline, course structure, teaching method(s), teaching material, and assessment method(s)/exam. These details can be elaborated in a table of constructive alignment covering the above subjects in each lesson.

The work of Biggs & Tang especially inspires this part. See figure 2.

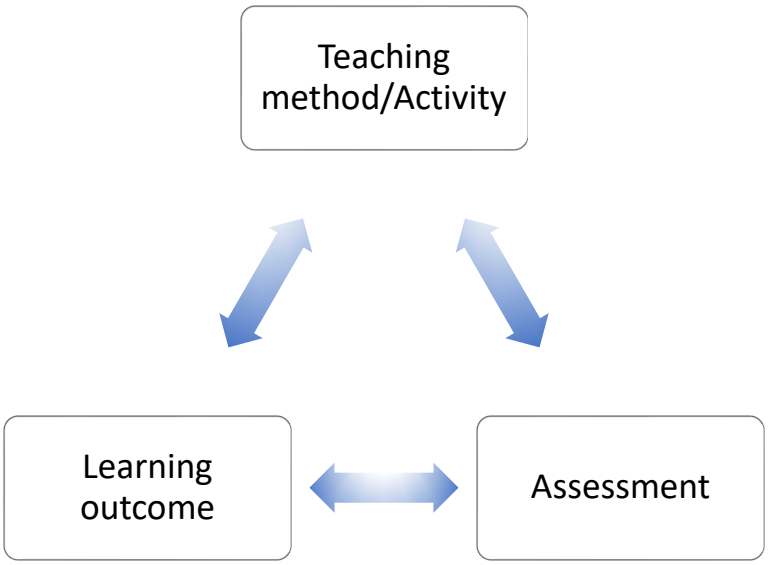

Figure 2: (Biggs & Tang, 2011)

Learning outcomes

The learning outcomes are stated using the descriptors of knowledge, skills, responsibility, and autonomy (European Union, u.d.) and formulated using "action verbs" (Cedefop, 2022). Action verbs corresponding to the EQF or a specific profession also make it transparent how the student is expected to demonstrate knowledge, skills, responsibility and autonomy. This was chosen after intensive discussions, as there are national variations.

During the development of the first EPs and the following piloting, it became clear that a detailed and well-articulated syllabus was needed.

Teaching methods

Teaching and training methodologies have been designed to match the learning outcomes.

The development of the EPs took place largely during the Covid pandemic. Decentralised teaching and learning had become another norm besides classical classroom learning. Thus, many educational packages include the possibility of blended learning, and some are even designed only as online courses, e.g., the EP Digital Skills I on digital infrastructure.

Digital Skills I was developed to allow students to familiarise themselves with information infrastructure specific to the vessel they are working on and complete the course whilst at sea. Thus, taking advantage of the combination of work-based learning and theoretical lessons. This requires the course to balance semi-autonomous learning with a supportive virtual environment incorporating teaching, learning and assessment.

The EP Green Skills I, Energy-efficient Ship Operation, is based on simulator sessions. The pedagogical considerations originate from the “Reflective Practitioner” concept of reflections in action and reflection on action (Schön, 1983). The awareness training includes Socratic questioning.

As most EPs are aimed at experienced seafarers at an advanced stage in their education or career, SkillSea has mainly aimed to include the most innovative teaching methods.

Giving guidance on the didactic approach is challenging as the education needs to fit the student. Students at MET institutions can range from Master (EQF7), Bachelor (EQF6), to Vocational (EQF 4 and 5), upskilling, reskilling, and may have significant age differences. Cultural differences between European countries must also be taken into account. On top of that is the variety of those determining maritime education programmes and curricula. Therefore, it is impossible to give one didactical approach for each EP.

Teaching material

As mentioned above, teaching material is only provided as examples to illustrate teaching methods. Experience gained during piloting shows that teaching material should be adapted to the target group and their previous education and experience.

Differences in national regulation also require teachers who want to utilise the EPs to create resources specific to learning outcomes, ensuring currency to their own national and organisational regulations. Furthermore, it is expected that teaching material, due to the changes in the industry and rapid technological evolution, needs to be continuously updated.

Assessment/exams

An assessment is necessary to test the success of teaching and understand if the intended learning outcomes have been reached. Summative exams are recommended to correspond with the learning outcomes and the teaching method. The assessment methods will be stated in the table of constructive alignment. Further examples of assessment are described in the Toolbox Design Guide.

Evaluation

The third and final part addresses the evaluation of the course, the review, and the suggested changes.

Course review

As with all training courses, the evaluation/review of these packages is essential to ensure that they remain current and of the correct quality. Students are provided with opportunities to evaluate the delivery and content of the package. This process should fit with the quality assurance measures adopted in the specific organisation.

6. EP validation process

The validation process has been conducted in three stages as a means of quality assurance measures to cover every sequence of the EP development before releasing the material for public use.

Stage 1, Review

While developing the EPs, one partner in each work group has been appointed to review the performance and outcome of the task, provide internal feedback on quality and delivery as per expectations, and offer feedback on the goals and quality of the work.

The reviewer has not participated in developing the EP but scrutinised the outcome and contributed to finalising the toolbox and example lessons. See appendix 2 for the guide for review.

Stage 2, Piloting

After completion, the EP is ready for piloting, and the material is delivered to the piloting partners.

EPs are essentially structured material with suggestions for overall teaching, learning and assessment methods, including examples of learning materials.

For this reason, the scope of the piloting is to evaluate the EP, its structure and the coherence between intended learning outcomes, teaching methods and assessment. Teaching methods are examples and assist in reaching learning outcomes and as guidance in choosing the assessment method. While samples of teaching materials are provided, they are not the main objective of the review. See appendix 3 for the piloting strategy.

Stage 3, Revising

All piloting partners and developers have analysed, discussed, and summarised the data collected via evaluation forms. Comments and feedback provided by the teachers who have delivered the course are discussed and considered to adjust the EP as required. Piloting partners, reviewers and developing partners meet and agree on the revised design and content of the EP. It is then handed over to project management, ready to be shared with the Advisory Board and published after further feedback. See appendix 4 for the revising procedure.

7. Lessons learned

Methodology

All partners were asked for feedback at regular intervals. Mini-surveys and other feedback sources are used as the work on the EPs progresses. Input from the partners is used to adjust formats and shared structures of EPs. Similarly, after developing the piloting plan and conducting pilots, members work to integrate piloting results into the EPs themselves.

Experiences from piloting

During the process of adapting the EPs, the following observations have been made.

There were similar experiences in Green Skills 1, Digital Skills 1, and Digital Skills 2 that the intent and scope of a given lesson should be clearly articulated. It was challenging for institutions not specialised in the subject area to fill in the gaps in the toolbox. This is viewed as a systemic issue with the approach of leaving gaps for institutions to fill in. It is suggested that more detailed consideration is needed for when gaps should be left and how end-users will be guided on approaching the sections not included in the toolbox. At the same time, sample teaching resources were always valuable but would have to be amended considerably in piloting. Links to websites should be avoided.

In developing EPs, the emphasis could be on suggested lesson plans and detailed, constructive alignment rather than sample teaching materials. Lesson examples are welcomed, but fixed flows are difficult to implement.

The recommendations, as mentioned earlier, have been implemented during the development of the latest EPs (such as STEM and Leadership).

8. Insights gained

Benefits

One of the main benefits of the toolbox design guide and the glossary was developing EPs with educational providers from different European countries, together with maritime professionals. Applying the toolbox approach to the developed EPs and, in this way, creating a common language makes them usable for all METs and the maritime industry.

Challenges

The internal survey results (on the EP development of WP2 participants) show that insights gained, as well as challenges, are grouped around two themes: developing EPs and collaboration in the partnership. See Appendix 1.

Developing EPs

Figure 3 below illustrates the main challenges envisioned by the groups working together to develop the EPs.

The initial discussions with the partner groups were challenging due to a significant disparity in their academic level and institutional background. The aims were different, mirrored in the choice of the target audience for the specific course. Defining the target group and prerequisites appeared difficult as syllabi differ due to national regulations and local maritime institutions.

This was solved during extensive discussions about the specifications of entry requirements. For example, members struggled to agree on which word to use to describe the target group: audience, participants, trainees, or students.

Terminology also led to confusion even though the consortium initially decided to use the EU framework, e.g., Bologna, Cedefop, and ESCO. Some of the terms were interpreted differently by some group members.

The SkillSea consortium created a glossary to support a common understanding.

Finally, several partners emphasised the need for a clear focus and content of the EP and learning outcomes. Content and development should be discussed, and EP intentions should be articulated in detail.

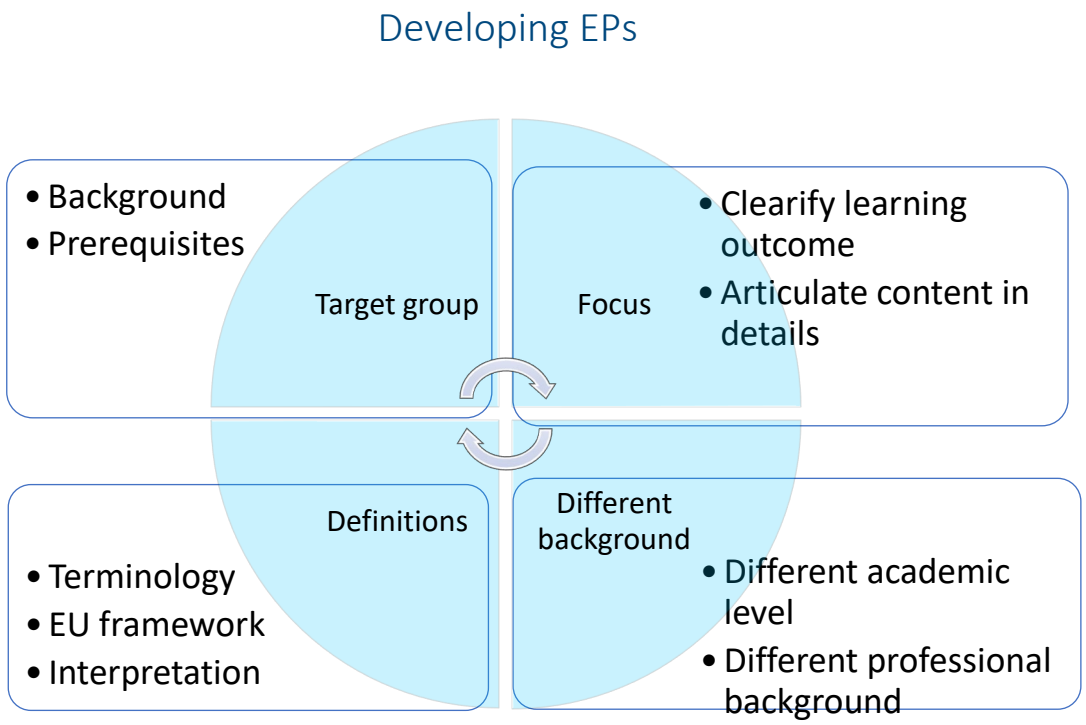

Figure 3 Developing EPs, an internal survey on WP2 participants see appendix 1

Collaboration in the partnership

Collaboration between group members developing the EPs is illustrated below in figure 4.

Most of the difficulties experienced were due to structural differences between the partner institutions or countries involved. An example which should be mentioned is the differences in the academic year. The summer holidays last from the end of June to the end of September, making scheduling meetings difficult. Finding time for all group members to meet worked best for the groups that had fixed weekly or other regular intervals.

Another issue is that although all maritime institutions educate to STCW standards, national approaches strongly influence education in the maritime industry.

Collaboration was also affected by the changes in allocated staff. Including new group members seemed to slow down the process as many decisions were questioned, and discussions were opened anew.

In other cases, the late introduction of a new collaborator benefited the group; during the STEM EP development, adding an extra person involved in other EPs provided great focus and sped up the final draft of the STEM EP.

Group size also made dialogue difficult, especially at online meetings.

Finally, the uncertainty on which platform to use for sharing information across the partnership, where to find information, how to get access, and the lack of a transparent information exchange system for all resulted in a loss of knowledge. This led to much time spent searching and asking for documents not filed as expected. Initially, files were shared on Basecamp, subsequently on the WP2 Teams folder, but adding collaborators to the WP2 Team wasn't easy. Once a separate Teams folder was created to cover just one EP and controlled by one person, sharing files became easier. It also allowed the controller to add templates and relevant project documents to the folder. In the project's first period, it was unclear whom to ask about the process and procedures, and project management should have been much tighter.

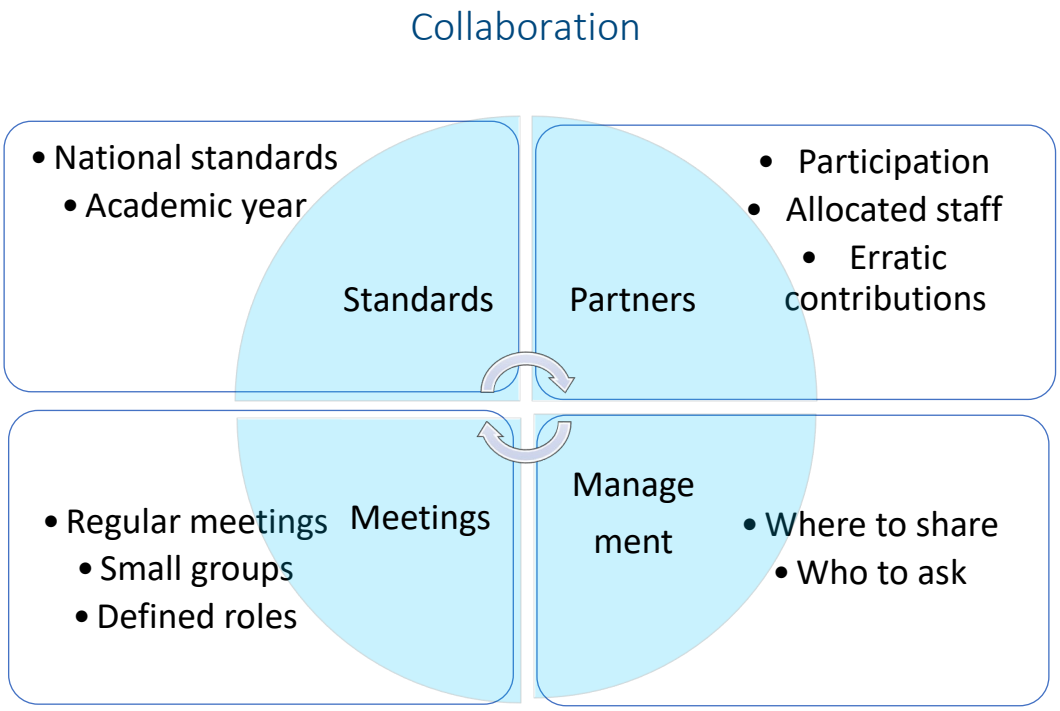

Figure 4 Collaboration, an internal survey on WP2 participants see appendix 1

9. Recommendations coming from the internal survey

Allocate necessary staff and keep the same people working on the project to contain knowledge and history. Let personnel work in small groups to ensure effective communication and meet preferably at the same time every week.

Introducing an experienced person can help break a deadlock to progress work that has stalled.

Aim small and focus when deciding on content and development of the EPs. Learning outcomes should be articulated in detail. Be clear about the target group and the entry requirements.

When developing EPs, create precise project management with a plan, clearly defined roles, and responsibilities.

Be aware of your own (cultural) background and academic expectations.

Get the terminology straight. A glossary is a great help.

Choose a digital sharing/communication platform accessible for all partners, with templates and a clear communication strategy.

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11. Appendices

Appendix 1
Internal survey

Challenges	
EP development	Collaboration
• Aim small Find/decide on your focus • Clarify what is to be delivered • Decide on definitions • Common guide on terminology • Some confusion; Refer to EU framework, e.g., Bologna, Cedefop + ESCO • Content beyond STCW • Discussions on content and development • EP intentions should be articulated in detail • Target group/participants/students who and which background • Previous knowledge and competence/profiles • Group members and institutions Different backgrounds - academic level • Identifying learning outcomes	• National and local standards • Academic year • Participation, engagement, allocated personnel, and workgroup size • Contributions erratic • Small workgroups • Regular meetings - preferably same time every week • Platform – where to share • Who to ask about processes and procedures? • Covid 19

Appendix 2
Guide for review

Guide for reviewers

The reviewer's role is to view the actual performance of the task from above, with an eye to the scope and direction, meeting the objectives of the development of the specific educational package, ensuring progress is on track, and providing internal feedback on quality and delivery as per expectations.

The reviewing institution takes part in the development of the educational package with the obligation to spar and advise the initiator on scope and approach, to offer feedback and an uncluttered view of the path, goals, quality of progress made, as well as on situations where there are several approaches or paths to choose from, which may stall the progression.

Appendix 3
Piloting Strategy

Piloting Strategy

The First SkillSea educational package (EP) Green Skills 1 is now completed in its first version.

WP 2 leaders have also confirmed the final list of EP titles and the deadlines for their development and piloting (please see the amended Overview of Tasks for WP 2).

As such, we are in a position to inform you of approved arrangements for piloting.

1. What will be piloted?

Piloting will be organised and conducted in several stages.

Stage 1: Initial piloting (review of the first EP)

During stage 1, we will aim to collect early feedback on the first EP developed, which is Green Skills 1. To achieve this, we will provide a completed EP for an independent review, which is suggested to be STC in their role as a partner in designing, piloting and considering their independence from developing this educational package.

This review aims to:

1) Evaluate the application of the toolbox approach.

2) Collect feedback on improvements required for the design and methodologies, which could be utilised to develop the following educational packages.

This stage will be completed with the active participation of teachers and colleagues with knowledge and experience in curriculum development and design.

Deadline: 30 October 2020.

Stage 2: Full piloting of all EPs

The next piloting stage will be to deliver completed EPs and collect the feedback required to further improve their toolbox.

EPs are not ready-to-use modules or courses with full content, teaching, learning, and assessment materials. Instead, they are a toolbox outlining learning outcomes, syllabus and teaching methods proposed for developing knowledge, skills, attitudes, and behaviours that will be meeting current and future needs of the industry. This toolbox provides suggestions for overall teaching, learning and assessment methods alongside some examples of learning materials. It aims to assist European METs and the maritime industry in closing identified skills gaps.

For this reason, the scope of the piloting is to evaluate the EP toolbox, its structure and the coherence between intended learning outcomes, teaching methods and assessment. Teaching methods are only examples and serve to assist in meeting learning outcomes and to be used in the context of the

assessment method. While samples of teaching materials are provided, they are not the main objective of the review.

Stage 2 of this piloting strategy might be reviewed and amended moving forward based on the outcomes of Stage 1.

2. Who is involved, and who is piloting?

A broad range of partners across various WPs will be involved in piloting in differing roles, from advice and guidance to assisting in dissemination. The leading roles are outlined below.

a. Developers of EPs

EP developers are expected to support piloting partners by providing clarifications and instructions if required. This support will be provided via an identified contact person (Cadiz: ensure the contact person is identified).

Developers will also be taking feedback received after piloting into account to adjust the Toolbox as required.

b. Piloting partners

Each EP will be piloted by one organisation identified through consultations among piloting partners (piloting partners are assigned in the Overview of Tasks, please always check the latest version for dates and partners). The decision will be made considering entry criteria for the EP, availability of students in the assigned period, expertise in delivering and possibly other factors. Chosen organisation will be communicated to Fleetwood, who will maintain the list of piloting organisations.

The role of the Initiator of the piloting will be to:

1) convene all piloting partners;
2) identify one organisation to deliver the package;
3) collect feedback from students, instructors and employers (if appropriate; only specific packages will be assigned to be reviewed by employers; Fleetwood & LJMU liaise with NTNU to organise);
4) analyse collected feedback with all piloting partners and communicate it to developers.

Please see section 3 for more details on the piloting procedure.

c. Associated partners and broader stakeholders

Associated partners and organisations will pilot EPs outside the consortium (stakeholders). The list of associate partners and stakeholders will be provided to utilise this opportunity to disseminate the results. All piloting partners are required to broaden the dissemination of EPs through national clusters. Active seafarers will be invited through unions. In addition, GS 2 and DS 2 could be aiming at upskilling officers at sea. We can then use feedback from actual employers (LJMU in identifying stakeholders, STC in dissemination, SIMAC in suggesting upskilling for GS 2 and DS 2).

3. How will we be piloting?

Piloting and evaluation will follow the triangulation approach by collecting feedback from students, lecturers/educators and employers.

These three stakeholder groups will evaluate by completing evaluation forms and interviews with employers. The data collected via evaluation forms will be analysed, discussed and summarised by all piloting partners and developers via face-to-face or virtual meetings/workshops. The meeting outcomes will be finalised and recorded in a short report/email and considered for the finalisation of EPs.

Evaluation tools, which are yet to be designed, will include various questions. These forms will be designed as a Google (maybe other) form, and links will be sent to all. Evaluation tools will be in precisely the same format for all EPs, allowing sharing of best practices, if possible, among different EPs against each other.

Train-the-Trainer task and related support will be offered only after piloting is completed and EPs and their respective toolboxes are amended/ This will allow lessons learnt could be included. Train-the-Train will support the usage of EPs after their completion.

4. Communication

Launching the piloting will be via virtual meeting, providing opportunities for Q&A. This meeting will be recorded and available on Basecamp.

It was agreed to have monthly short informal keep-in-touch meetings between all piloting and developing partners to provide an opportunity to share best practices and learn while doing. These meetings will be held on MS Teams and recorded for partners who cannot attend. Fleetwood to organise.

Descriptive template and guidance for revising educational packages based on piloting feedback

According to agreed arrangements for the development and piloting of educational packages (EPs) in the SkillSea consortium, partners responsible for developing EPs are expected to review reflections and recommendations received from piloting partners and take feedback into account to adjust and finalise the EP as required.

It is strongly recommended that a short meeting be arranged between piloting and developing partners to communicate the outcomes of piloting documented in the reflection document.

Feedback from piloting should be then used to review and improve the EP after it is considered completed.

Developers are also expected to provide a short document on lessons learnt and improvements made to EP after piloting. This document should be sent to Fleetwood Nautical Campus for records and can contain the following details:

1. Overview of the amendments made to the EP after receiving piloting feedback, preferably with specific examples and references to critical sections of the toolbox. Explain the rationale for those changes.

2. If any suggestions and/or recommendations were not accepted, please explain the rationale for declining proposed changes.

3. Please provide a conclusion of lessons learnt from piloting and how this could help develop future-focused educational packages.

SkillSea Glossary

Frequently used expressions and clarifications.

Benchmarking	A voluntary tool which some might apply, for example, in structured cooperation. Within the SkillSea project, there is no benchmarking
Convergence/ encountered harmonisation/ standardisation etc.	Through best practices and identification of obstacles and difficulties e.g. in curricula adaptions, SkillSea facilitates the application of EU-wide tools like EQF, ESCO, Cedefop and all things Bologna, without unifying/standardising the education or programmes
Cedefop	European Centre for the Development of Vocational Training: aims to help develop the right policies to provide the right skills for VET
Deliverables	Outcomes are organisational business changes that will lead to the objectives. Deliverables are the work products, from documentation to actual products, producing the outcomes
Diplomas of Excellence	SkillSea provides insights and tools, for example, through strategy and probably through structured cooperation. It is always Diplomas in plural! SkillSea does not provide the Diplomas or the content of these within the project
Dissemination activity	How we make project results available to stakeholders, including industry and policymakers

EQF	European Qualification Framework: relating different countries' national qualifications systems to a common European reference framework to better understand and compare the qualification levels of different systems. For example, the bachelor's degree is EQF level 6, the Master's level is 7, and the PhD is level 8
ESCO	European Skills, Competences, Qualifications and Occupation: classification and dictionary, describes professional occupations, skills and qualifications to support job mobility
Initiator's tasks/role	Plan and structure tasks to deliver objectives/targets of the work with timeline, interfaces and reporting milestones; ask for reviewer's feedback on ideas/crossroad decisions; ensure dialogue, structure, and coordination with relevant partners. Inform subtask partners of upcoming tasks, clarify scope, and manage progression. Set process (e.g. meeting frequency, recordings, who are on which aspects, exactly which persons are involved), share information internally and externally (report progress, obstacles that need assistance from without the group, e.g. if a partner cannot participate in the work expected at a given longer period, so tasks must be redistributed, or send cause and suggestions if a deadline is under pressure). Decide the relevant starting date, and inform WPL. Provide input for Flash Report (work expected every three months and the actual progress of the past three months).
MET	Maritime Education and Training – at all EQF levels, meaning all levels and covering various institutions from, for example, upper secondary schools to universities and commercial training centres
New education	No IMO model course from this project, but findings can be presented as indicative, and work could continue, e.g. in the structured cooperation among (some) participants
Outcomes	are changes to organisations' business that will lead to the objectives. Deliverables are the work products, from documentation to actual products, producing the outcomes

Ranking	Through the SkillSea project, we inspire and share best practices. We do not rank education, institutions or countries
Reviewer's tasks/role	View the actual performance of the task from above, with an eye to the scope and direction, meeting the objectives/targets, ensuring progress is on track, and providing internal feedback on quality and delivery as per expectations. Engage with and advise initiator on scope and approach. Offer feedback, an uncluttered view of the path, goals, and quality of progress made, and situations where there are several approaches or paths to choose from, which may stall the progression.
Piloting	***
STCW revision	We make our reports and findings available to member states, the EU Commission and other relevant parties. Through the workshop and internal discussions, we establish proper channels and ways to address these, and whether we can provide specific indications or recommendations as a presentation of our findings. There are political currents and aspects to be aware of. SkillSea will not provide a direct paper with mandatory elements.
Seafarer/	We use the term seafarer when it is precisely the person(s) referenced. In most SkillSea contexts, Maritime Professional will be the appropriate term.
Stakeholder	Stakeholders are central players impacted by, affecting or relevant to the project. *PM clarifies the scope and aims. This defines relevant stakeholders.* For various tasks or purposes, some or all stakeholders may be relevant.
Target Group	a) b) c)
VET/Vocational education	Vocational Education and Training, often used for education in practical skills, including an apprenticeship, like hairdresser, electrician, carpenter

or gardener, providing access to higher education programmes and further adult education programmes at EQF levels 5 and 6. Be aware that some use it for education at all levels. Within the SkillSea project, we use MET used to cover all levels

Overall, we must be true to the task – are we analysing, gathering best practices, creating/outlining options and suggestions, or are we presenting fixed answers or solutions? It might be the right answer/solution, but we must keep an open mind and get there first – the project scope determines how far we can/should/must go in this direction.