SKILLSEA

BLUEPRINT MARITIME SHIPPING PORTAL

:

DELIVERABLE: 3.6
DATE: June 30, 2023
VERSION: 7.0

MAIN EDITOR(S)	EUGENIDES FOUNDATION
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REVIEWER(S)	
DISSEMINATION LEVEL	PUBLIC

VERSION HISTORY			
VERSION	DATE	EDITOR	SUMMARY OF MODIFICATIONS
V1	6 September 2019	EF	Draft
V2	15 November 2020	EF SkillSea	Draft Interim
V3	23 November 2020	EF (ext.)	Interim
V4	10 December 2020	STC Group, SIMAC	Review
V5	18 December 2020	EF	Final
V6	28 June 2023	EF	Fina to STC for review
V7	30 June 2023	EF	Final

Acknowledgements

Summary SkillSea Report

Deliverable: 3.6, version: Final, date: 30 June 2023

This document (D3.6) reports the history of the creation of the website and of the portal, and provides a general description of the website, its technical specifications, graphical design and related web analytics.

The Blueprint Maritime Shipping Portal – or Maritime Education and Training Portal – constitutes an integral and important part of the SkillSea concept. The portal enables easy information management, secures availability of the wider public to the toolbox developed by WP2, making available the Educational Packages (EPs) developed on the basis of the toolbox itself.

This document summarises the phases of the portal construction and development, the portal development methodology, the selection of the Moodle platform and its specifications, along with a related list of functions of the portal as the web repository hosting all educational materials created in the project and fostering reuse by third parties.

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.

Contents

ANNEXES

FIGURES

TABLES

IMAGES

LIST OF ABBREVIATIONS AND DEFINITIONS

Abbreviation/Term	Definition
Agile methodology	Software development methodology focused on decreasing the feedback loop between writing code and deploying it to users in contrast to the Waterfall Methodology.
API	Application Programming Interface – a set of technical requirements required for communication between programs
CMS	Content Management System – a computer system that supports management (creation and edition) of digital content in a simple way, usually abstracting any lower-level technical details.
E-MSF	European Maritime Skills Forum
EPs	Educational Packages
ESCO	European Skills/Competences, qualifications and Occupations
IPR	Intellectual property rights
LMS	Learning Management System (delivers content to students and tracks their progress).
MET(s)	Maritime Education and Training (institutions)
MET-NET	Maritime Education and Training Network
SCORM	Sharable Content Object Reference Model is a standard for packaging e-learning content (to be delivered to LMSs)
WPs	Work Packages

1. TIMELINE OF THE WEBSITE CREATION

1.1. Timeline of the website creation

The various stages of the website creation are described below:

Date	Action
15-11-2018	Comparison of various CMS platforms by Eugenides Foundation (EF)
29-11-2018	Selection of content management system (CMS): Joomla
12-03-2018	Started the development of design proposals (internally by EF)
12-122018	Two proposals for the SkillSea logo submitted to partners by the STC Group
15-12-2018	One design proposal internally selected and internally submitted for improvements
18-12-2018	Main website development and installation
58-12-2018	First development of content; content added to the main website
05-01-2019	SkillSea server configuration
05-01-2019	SkillSea database and emails creation
01-10-2019	Content developed added to the main website
18-01-2019	One design proposal submitted to the SkillSea coordinator and WP leaders
25-01-2019	Feedback by WP leaders and incorporation into the website proposal
06-02-2019	Presentation of the website to the partners at the kick-off meeting
13-02-2019	Skillsea.eu domain creation
08-03-2019	Content updates/modifications added to the main website
15-03-2019	Started the development of the web folder for collaboration (internal-external)

Date	Action
01-04-2019	Development of the terms of data policy and privacy policy and notice for the website
08-04-2019	Submission of the terms of data policy and privacy policy and notice to the coordinator, as well as discussion about the appointment of data processor and data controller
15-04-2019	Added new photos to the various sections of the website
21-05-2019	Reply by the coordinator on the appointment of data processor and data controller
14-06-2019	Appointment of data processor and data controller by EF
21-06-2019	Publication of the official website to the public
01-07-2019	Continuous updates
31-12-2019	Development of portal prototype
01 to12-2020	Deployment of Moodle platform according to WP2 requirements
2020-05-02	New interface layout and sub-menus
30-07-2020	Uploaded toolbox
01 to 12-2021	Deployment of Moodle platform according to the new WP2 requests
10 to 12 2021	Inclusion of new items (Tools, video section, YouTube channel). Content updates.
07 to 02-2022	Continuous updates (content, modifications) and development of new items (mailing registration form)
11 to 12-2022	Embedding of the Toolbox (new version and format), of Educational Packages and other items
03 to 05-2023	Continuous updates (news, closing conference, other events)
06-2023	Portal finalisation

2. SKILLSEA WEBSITE

2.1. Web-based communication

Web-based communication can be divided into three sub-tasks, as follows:

Task.2.1: Project logo and visual communication

Task 2.2: Website

Task 2.3: SkillSea community and network

2.2. Project logo and visual communication

Two logo proposals were developed by the WP4 leader, the STC Group, and their concepts were submitted to the SkillSea partners in December 2018. Partners voted for the second option, which was chosen as the official project logo.

2.3. Website objectives and goals

The website has been designed to raise awareness about the SkillSea project and to effectively prepare and coordinate the use and dissemination of the material generated during and beyond the project life. Therefore, its function is three-fold:

- ○ **Raise awareness** about the project concept, objectives and goals, partners, news, and activities related to the project.

- ○ **Attract the end users of the SkillSea project activities**: students and teachers, and at a later stage maritime education and training institutions (METs), including educational authorities involved with METs.

- ○ **Build and nurture the SkillSea community and network**: MET students participating in piloting and beyond, teachers using toolbox/educational packages, educational authorities in MET and external stakeholders with an interest in the maritime sector.

2.3.1 Registration of the domain name

The URL of the domain was registered on 13/02/2019, after the kick-off meeting, as per Inset 2.A below.

Inset 2.A

www.skillsea.eu

2.3.2 Website design and management

The website was built using Joomla, an open platform. The contents and user interface of the website were developed by WP3 leader (EF) with inputs from WP leaders for the individual subjects. The website content has been updated by the WP4 leader, both periodically and on events.

The periodic update is useful to maintain the interest of users who can find the latest news at each update period, while the 'on events' update ensures immediate availability of updated information.

The day-to-day management and maintenance of the website has been managed by the leader of WP3, who is also responsible for the management and maintenance of the innovative tools developed.

The day-to-day management and maintenance of the website will continue to be carried out by the leader of WP3 after the end of the project.

Basic design guidelines

- *Aesthetic and minimalist design.* The website has been designed according to the latest trends in web design. All the colours, images, and layout are in line with the logo and the corporate image guidelines provided by the WP4 leader.

- *Responsiveness.* The website was built in 'responsive' mode, which means that one can view it from any device, be it a desktop computer, a laptop, tablet, or a mobile phone, and its content and graphics layout will adjust automatically to the size and shape of the screen of the device.

- *Coherence in look.* The look and feeling of the interface follow a common model throughout the website to improve readability and reduce familiarisation time for navigation.

- Flexibility and efficiency of use. The SkillSea website has been designed to address the needs of different target users and stakeholders with differing user goals, abilities and preferences. The target groups have been assessed by D4.1[1].

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[1] Cf. WP3 deliverable, SkillSea (2020), D4.1 Dissemination plan.

2.3.3. Web updates

The first website version was launched – by the WP3 Leader – to the public in June 2019. Since then, adjustments and updates have been made by the WP4 Leader, responsible for web communication and content. The homepage of the website was improved by adding three columns with news updates, spotlight articles and events in each. The main picture on the homepage was changed, as well as several text boxes, to improve the attractiveness and visibility of the portal.

In the first year since its construction, the project website provided increased information about the project and about dissemination activities in order to raise awareness of SkillSea. In the following years, the content and a number of structural elements of the website were completed or renewed and also enriched with important project materials produced such as project deliverables, dissemination materials and innovative tools.

2.3.4 Website description

In this section the site is described analytically (as it was created initially, updated and upgraded) along with the available sections (cf. Table 2.1 and Image 2.1 below).

Table 2.1

Sitemap of Skillsea.eu

(Sv14 – 9/11/2020)

Title	ID
Home (Alias: home)	101
About	141
– What is SKILLSEA? (Alias: what-is-skillsea)	203
– Project Management (Alias: project-management)	204
– Work packages overall structure (Alias: work-packages-overall-structure)	205
– Work Package 1 (Alias: work-package-1-skills-needs-identification)	231
– Work Package 2 (Alias: work-package-2-future-proof-education-and-training-in-brief)	232
– Work Package 3 (Alias: work-package-3)	233
– Work Package 4 (Alias: work-package-4-awareness-raising-and-stakeholders-mobilization)	234
– Work Package 5 (Alias: work-package-5-implementation)	235
– Work Package 6 (Alias: work-package-6-project-and-quality-management)	236

|	
– Partners (Alias: partners)	206
– Precursor Projects (Alias: precursor-projects)	207
– Contact (Alias: contact)	208
Activities	142
– Structural cooperation among METs (Alias: structural-cooperation-among-mets)	213
– Access to innovative tools	216
– Internationalized strategy tools (Alias: internationalized-strategy-tools)	265
– Strategy Direction Location (STRA.D.L.) (Alias: strategy-direction-location-stra-d-l)	266
– Transcript International Transfer (Trans.I.T.) (Alias: transcript-international-transfer-trans-i-t)	267
– Strategic Evaluation MET Tool (Alias: strategic-evaluation-met-tool)	268
– Stakeholder Cooperation for MET Tool (S.CO.MET.T) (Alias: stakeholder-cooperation-for-met-tool-s-co-met-t)	275
– The Shipping Employability AHP Based Anticipating Tool (S.E.A.B.AN.T) (Alias: the-shipping-employability-ahp-based-anticipating-tool-s-e-a-b-an-t)	274
Dissemination Materials	209
– Factsheets (Alias: factsheets)	217
– Newsletters (Alias: newsletters)	218
– Press releases (Alias: press-releases)	220
– Videos	221
– Presentations (Alias: presentations)	264
News	170
– News (Alias: news)	197
– Events (Alias: events)	198
– Spotlight (Alias: spotlight)	263
– Other skills projects (Alias: other-skills-projects)	276
Results	222
– Public deliverables (Alias: public-deliverables)	223

Maritime Education & Training Portal (Alias: maritime-education-training-portal)	228
– How to (Alias: how-to)	270
– Educational Packages (Alias: educational-packages)	230
– Green Skills 1 (Alias: green-skills-1)	271
– Green Skills 2 (Alias: green-skills-2)	272
– Leadership (Alias: leadership)	279
– STEM (Alias: stem)	282
– Intrapreneurship and Innovation (Alias: intrapreneurship-and-innovation)	281
– Digital Skills 1 (Alias: digital-skills-1)	273
– Digital Skills 2 (Alias: digital-skills-2)	277
– Train the Trainer (Alias: train-the-trainer)	278
– Toolbox design for educational packages (Alias: toolbox-design-for-educational-packages)	256

Homepage:

- Top navigation bar (links to all sections of the web site).

- The front page is dynamic and enriched with the latest news, events, and spotlights.

- The footer acknowledges the EC source of funding and includes the number of the grant agreement and the EU flag, as well as the webmaster and the privacy disclaimer statement.

Image 2.1

Screenshot desktop mode (v14 – 19/06/2023)
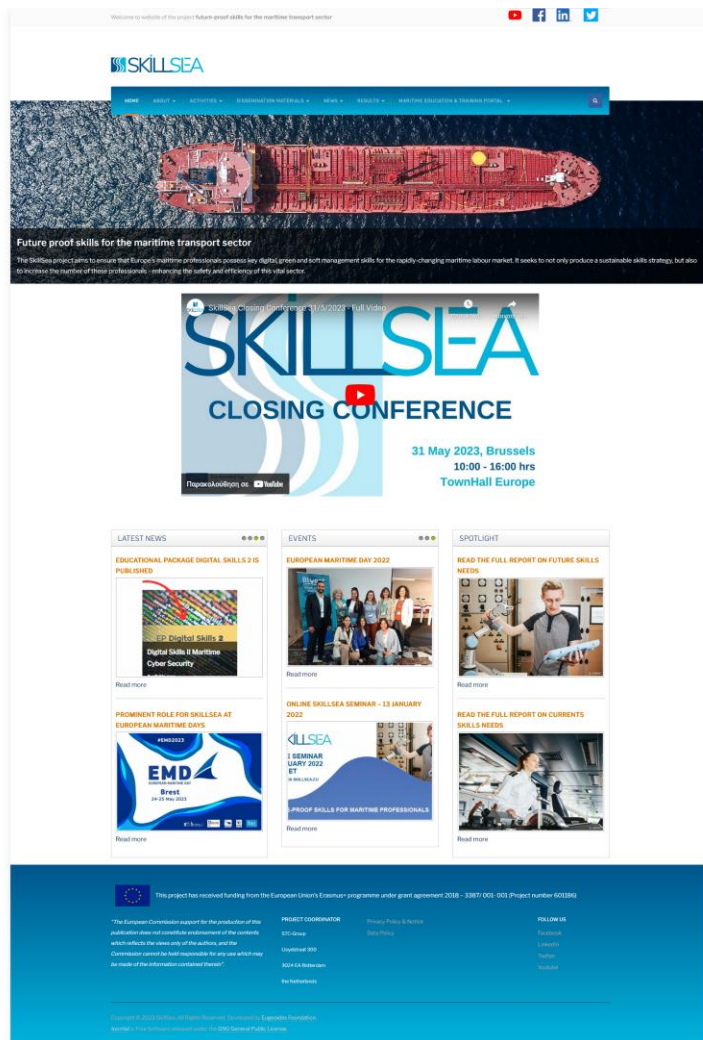
About
Includes a deeper insight into the rationale, why this project was needed, the key aims and objectives, the description of WPs, the project partners, precursor projects and contact details.

Activities
This section provides a short description about main project activities as well as a suite of innovative tools with open access which have been provided by WP3 and are appropriate for use from METs and online target-users.

Dissemination materials
This section includes press releases and any material published within the project and produced for public circulation and downloading, such as factsheets, newsletters, videos, and presentations.

News

Latest news, spotlights, other events and skills projects have been published under this section. It is dynamic and will be regularly updated after the end of the project, especially with news from the SkillSea legacy including the structural cooperation Maritime Education and Training Network (MET-NET) formed in May 2023 and the SkillSea proposed European Maritime Skills Forum (E-MSF).

Results

In this section, the public deliverables of the project are available for downloading.

Social media

Social media accounts (Facebook, LinkedIn, Twitter) have been incorporated and activated for further interaction and for sharing and disseminating the project's insights. The social media accounts have been updated by the WP4 leader at regular intervals and in accordance with the project's progress.

Image 2.3

Website analytics screenshot

(SkillSea Project end 2023)*

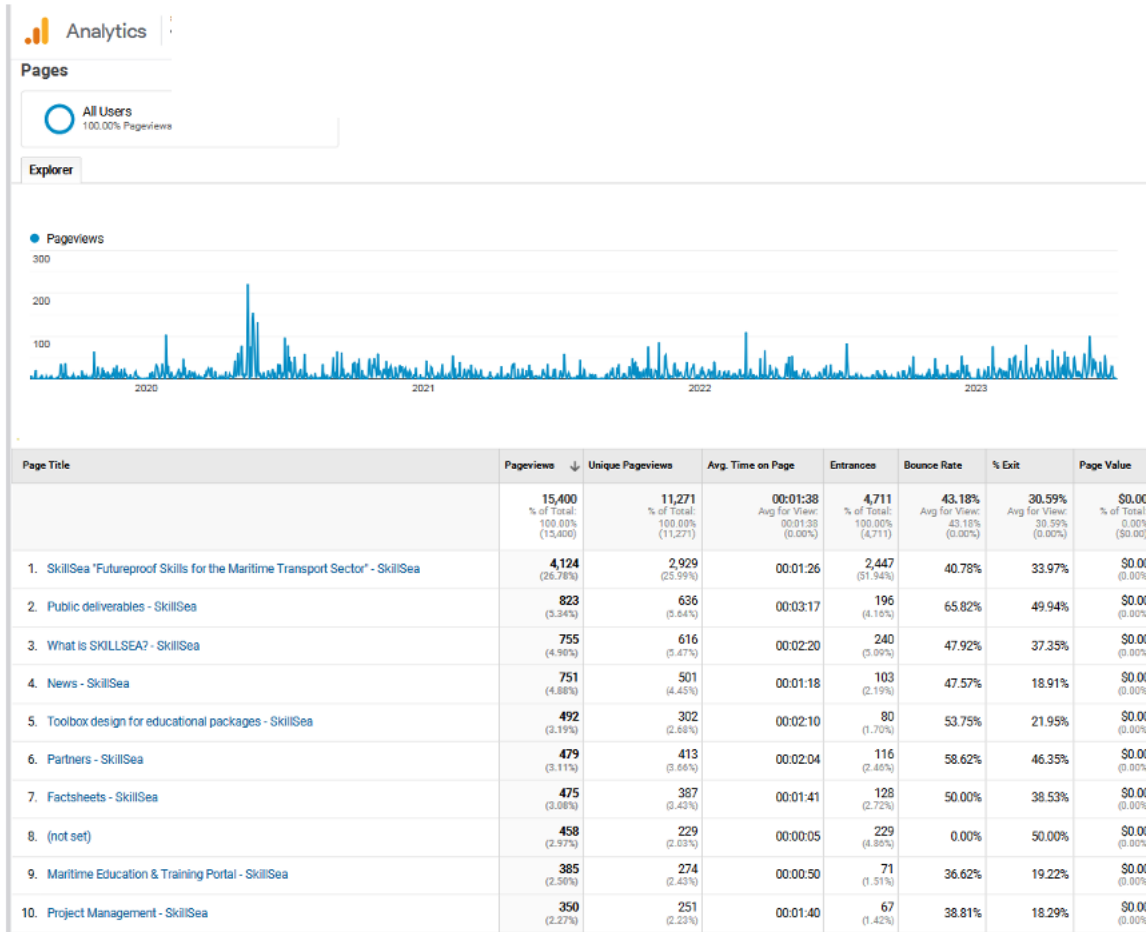| Page Title	Pageviews ↓	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	15,400 % of Total: 100.00% (15,400)	11,271 % of Total: 100.00% (11,271)	00:01:38 Avg for View: 00:01:38 (0.00%)	4,711 % of Total: 100.00% (4,711)	43.18% Avg for View: 43.18% (0.00%)	30.59% Avg for View: 30.59% (0.00%)	$0.00 % of Total: 0.00% ($0.00)
1. SkillSea "Futureproof Skills for the Maritime Transport Sector" - SkillSea	4,124 (26.78%)	2,929 (25.99%)	00:01:26	2,447 (51.94%)	40.78%	33.97%	$0.00 (0.00%)
2. Public deliverables - SkillSea	823 (5.34%)	636 (5.64%)	00:03:17	196 (4.16%)	65.82%	49.94%	$0.00 (0.00%)
3. What is SKILLSEA? - SkillSea	755 (4.90%)	616 (5.47%)	00:02:20	240 (5.09%)	47.92%	37.35%	$0.00 (0.00%)
4. News - SkillSea	751 (4.88%)	501 (4.45%)	00:01:18	103 (2.19%)	47.57%	18.91%	$0.00 (0.00%)
5. Toolbox design for educational packages - SkillSea	492 (3.19%)	302 (2.68%)	00:02:10	80 (1.70%)	53.75%	21.95%	$0.00 (0.00%)
6. Partners - SkillSea	479 (3.11%)	413 (3.66%)	00:02:04	116 (2.46%)	58.62%	46.35%	$0.00 (0.00%)
7. Factsheets - SkillSea	475 (3.08%)	387 (3.43%)	00:01:41	128 (2.72%)	50.00%	38.53%	$0.00 (0.00%)
8. (not set)	458 (2.97%)	229 (2.03%)	00:00:05	229 (4.86%)	0.00%	50.00%	$0.00 (0.00%)
9. Maritime Education & Training Portal - SkillSea	385 (2.50%)	274 (2.43%)	00:00:50	71 (1.51%)	36.62%	19.22%	$0.00 (0.00%)
10. Project Management - SkillSea	350 (2.27%)	251 (2.23%)	00:01:40	67 (1.42%)	38.81%	18.29%	$0.00 (0.00%)

*For technical reasons the analytics table above has been updated at the time of the technical report submission including six days in July 2023.

From the data for the period 01/08/2019 to the end of the project in mid-2023, it emerges that the website achieved around 15,000 page views. Over a quarter of these were related to initial access to the main webpage and ensuing attempts to access some content and information before moving into a specific window. In terms of unique pageviews data, there were over 11,000 visits to the website. The average time spent on the website was 01.38 minutes, while the bounce rate was around 43%, and the exit rate 30.59%.

2.4 SkillSea community and network

The website is the main channel to disseminate project results and establish links with educational authorities and other institutions and stakeholders involved in the maritime education sphere and sector. This task covers a wide range of activities aimed at maximising the project's impact, building an international community around the project idea, managing deliverables and publications as well as educational materials, and coordinating project presentations at external and internal events. A core aim of SkillSea is engaging potential policy-makers through the dissemination and outreach campaign detailed in the deliverable D4.1 - Dissemination plan.

However, while the portal is also useful in this regard, in order to establish contact and mobilise this community, state-of-the-art methods have been applied throughout the various deliverables – scenario analysis on the basis of surveys, questionnaire-based Delphi techniques, focus groups and joint interactive workshops, etc.

Communication tools such as Microsoft Teams, Zoom, Survey Monkey questionnaires or other online tools and direct e-mails have been chosen to facilitate virtual meetings and other events, leaving the portal focused on the target groups identified by the SkillSea deliverable D4.1.

3. BLUEPRINT MARITIME SHIPPING PORTAL

3.1 The Blueprint Maritime Shipping Portal

The Blueprint Maritime Shipping Portal (or the 'Maritime Education and Training portal') acts as the main hub to host the toolbox and educational packages that will upskill graduates from various MET courses and participants/employees in line with the future needs of the shipping industry.

The main aim of the portal has been to host educational packages (mainly in blended learning concept) **in the areas of digital skills, green skills, STEM, leadership, innovation and entrepreneurship**[2] to prepare maritime professionals for the future, and to enhance labour mobility in the maritime shipping sector. Educational packages and their application and adaptation are supported by the educational package Train-the-Trainer. Image 3.1, below, presents the main page of the site providing access to the entire platform while highlighting important aspects of the SkillSea results.

Image 3.1

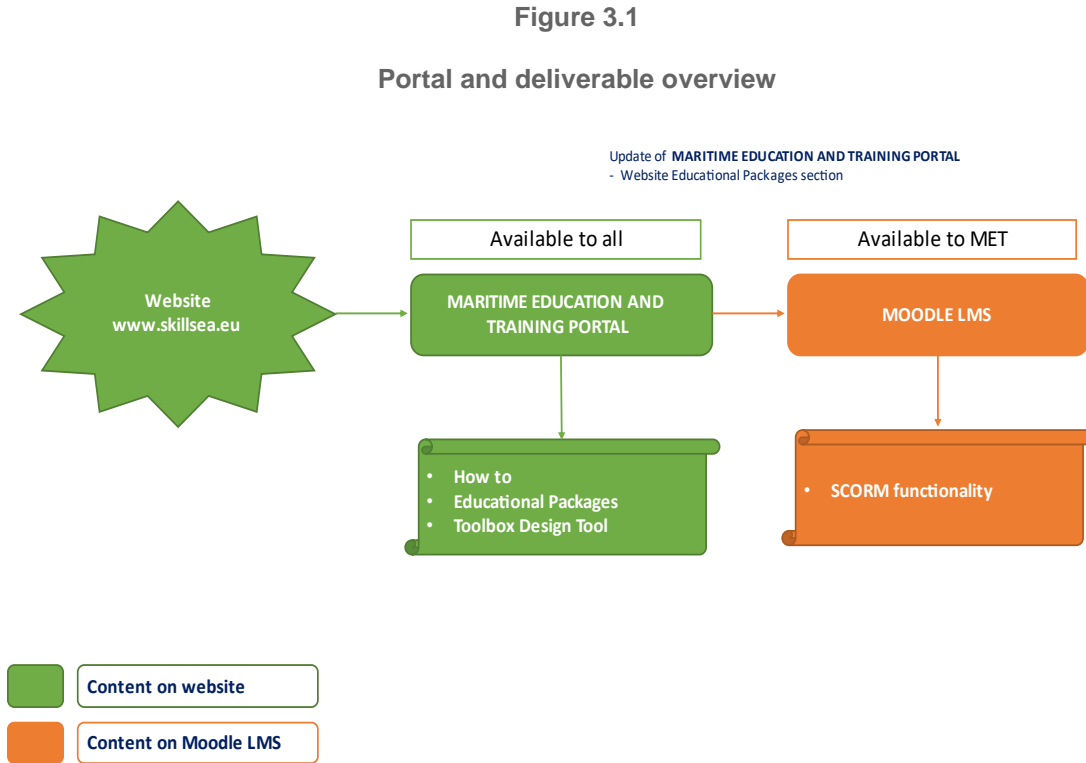**Main platform access page screenshot**

(June 2023)

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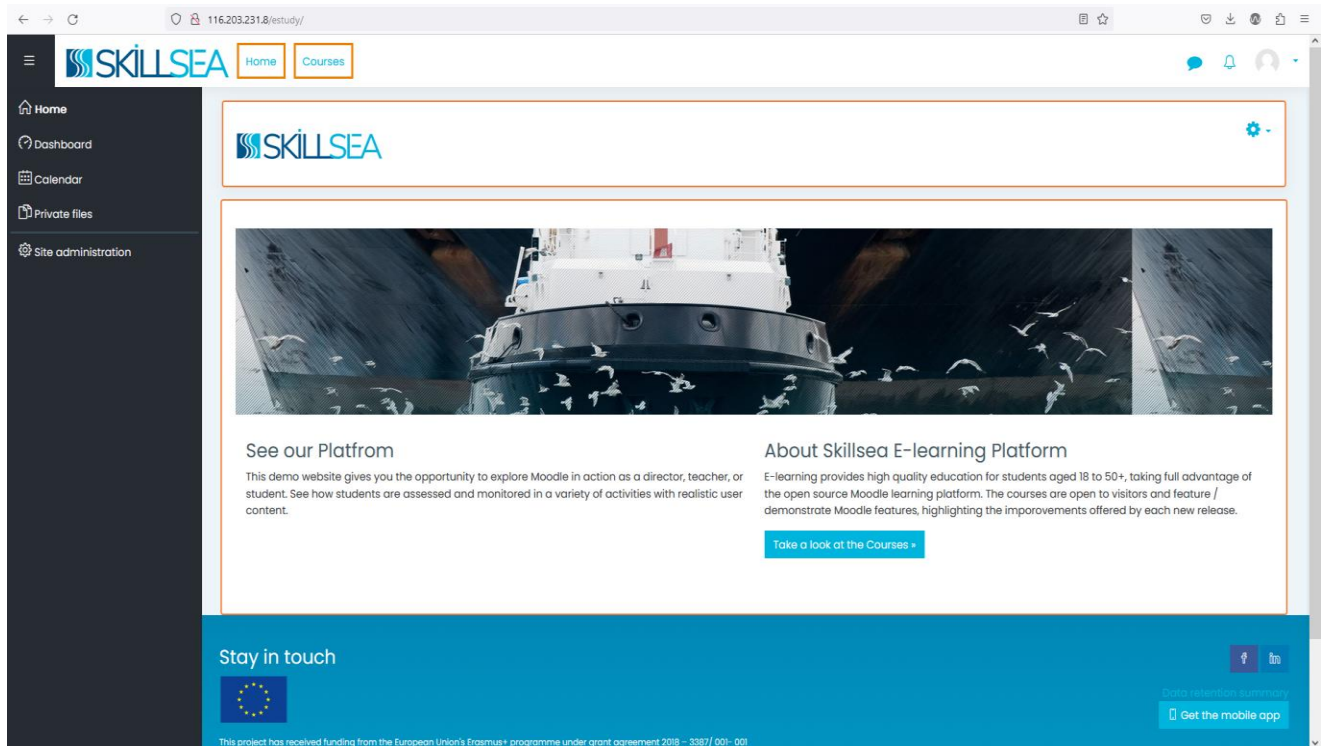
[2] Cf. SkillSea (2020). D3.1 *Strategy Plan Framework*, deliverable report, Chapter 4 for a concise overview of the EPs.

After discussions between WPLs of WP2, WP3 & WP4, it was decided that the portal/Moodle platform should only be accessible to METs where teachers may download the full versions of the educational packages. To this end, teachers must fill in a registration form for requesting access.

In order to achieve widespread dissemination and communication of the WP2 educational materials (educational packages, toolbox), it was agreed that the materials would be open access in the SkillSea website, through the Maritime Educational Training portal section.

An overview of the updated website and portal approach is depicted in Figure 3.1 below.

Figure 3.1

Portal and deliverable overview

Update of **MARITIME EDUCATION AND TRAINING PORTAL**
- Website Educational Packages section

Available to all	Available to MET

Website www.skillsea.eu → MARITIME EDUCATION AND TRAINING PORTAL → MOODLE LMS

- How to
- Educational Packages
- Toolbox Design Tool

- SCORM functionality

- Content on website
- Content on Moodle LMS

All the above information is published in the portal section before entering the Moodle platform. More specifically, the information is organised as follows:

- How to use the Maritime Education & Training Portal

- Educational Packages to future-proof your education

- Toolbox design guide for the creation of a new Educational Package

The educational packages can be accessed through https://www.skillsea.eu/index.php/maritime-education-training-portal.

24

3.2 Development Methodology

The development of the portal prototype, including the online platform (Moodle) requirements and final system specifications (prototype), have been achieved on time (M12) by the WP3 leader, with the development team using agile development methodologies and techniques as already included in the interim version of the present deliverable.

Agile methodologies were created as an alternative to the waterfall methodology; agile methodologies are focused mainly on:

- decreasing the loop between creating a feature in a program, deploying it to end-users and getting their feedback

- developing the software iteratively, closely listening to stakeholder input and accordingly changing plans

- relying on automatic testing tools to keep the quality of code

- relying on continuous deployment to deliver software as fast as possible

The development of the portal prototype included the following steps in terms of overall methodology and platform specifications:

Requirements analysis: A desktop study was performed in terms of literature review and a consultation process was followed with the WP2 leader and certain WP2 partners (content providers) to present their ideas on content and related materials.

A market review on open-source Learning Management Systems (LMS): A thorough market review of open-source LMSs that could be used for the creation, management and the publishing of learning resources was performed at this stage of the project. This task resulted in the selection of an open-source platform – Moodle – which was evaluated as meeting all the requirements of the SkillSea portal based on specific criteria.

Definition of platform specifications: Based on the results of the requirements and on the LMS selection, the overall specifications of the platform were defined at this stage of the project.

3.3 LMS market research

There are many learning management systems in the market today, and selecting one is not an automatic process.

An overall evaluation of options was based on specific criteria defined by the results of the initial requirements analysis performed within WP2.

The indicative criteria selected for the evaluation of alternative LMSs are presented below:

- Free of cost

- Ability to support unlimited users

- Customisation potential

- Plug-in availability and degree of easy additions

- Helpful community

- Possibility of hosting in our server

- SCORM (Shareable Content Object Reference Mode) compliance

- Integration

Based on the above criteria, the following LMSs were reviewed and evaluated:

Moodle

Moodle is one of the leading learning platforms providing educators, administrators and learners with a single system to create personalised learning environments. The Moodle website emphasises its qualities as being a 'robust', 'secure' and 'integrated' LMS solution, highly flexible and fully customisable. Moodle claims almost 90 million users across business and academia, powering globally a very large number of learning environments.

Moodle is open-source, allowing tailoring to the needs of the education provider. According to its developers[3], this LMS's modular set-up and interoperable design integrates well with plug-ins – Moodle providing freely available ones as well as add-ons – and with external applications for any.

Open edX

Open edX provides a range of authoring tools for educational provision based on a modular approach to learning through interaction using sequences, videos and interactive exercises and is also a popular platform. According to its developers[4], Open edX facilitates teaching through asking questions and fosters self-paced learning by, for example, allowing learners to pause or rewind instructors at will.

The platform is split into two distinctive applications (sides):

- LMS, on which learners can access and complete the courses offered

- Open edX Studio, which is the browser-accessed side of the platform for course administrators, instructors, and course authors creating, designing and managing courses

Canvas LMS

According to its developers[5], Canvas LMS is oriented towards course engagement and effectiveness, providing built-in tools allowing differentiated provision and enabling evidence-based teaching activities. Its developers emphasise its simplicity which promotes easy and intuitive navigation, minimising user

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[3]Cf. https://moodle.com, last accessed November 20, 2020, verified as valid resource June 28, 2023.

[4]Cf. https://open.edx.org, last accessed November 21, 2020, verified as valid resource June 28, 2023.

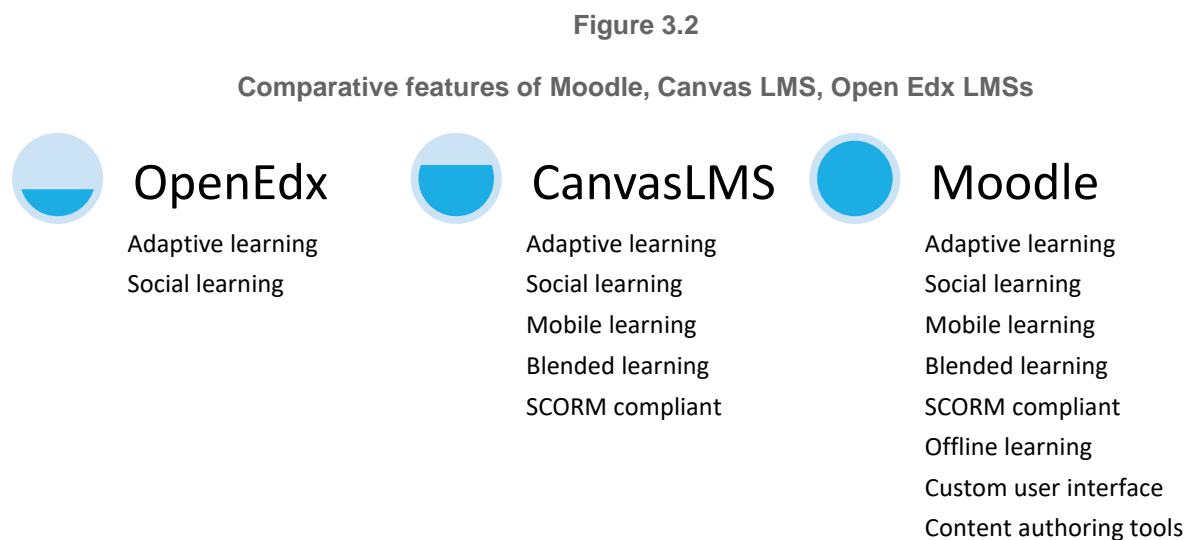[5] Cf. https://www.instructure.com/canvas/, last accessed November 21, 2020, verified as valid resource June 28, 2023.

frustration and reducing support costs.

For the purpose of LMS selection we also reviewed other open-source packages such as eFront, CourseSites by Blackboard, DigitalCHALK, Sakai, Chamilo, Totara, edloomio. However, as there was no familiarisation with these among main partners and most other platforms did not cover the evaluation criteria, these were not considered as viable options for the purposes of SkillSea.

- For the final selection a flexibility comparison for the shortlisted options was made on the basis of:

- Content Management System (CMS) and branding

- Functionality customisation

- Ease of use

- Application programming interface (API) and integration

- Community support

Figure 3.2 below summarises the comparison of key features of the shortlisted systems which emerged from the market research, following loosely recommended steps in literature as summarised in Abdullateef (2016)[6]:

Figure 3.2

Comparative features of Moodle, Canvas LMS, Open Edx LMSs

OpenEdx	CanvasLMS	Moodle
Adaptive learning	Adaptive learning	Adaptive learning
Social learning	Social learning	Social learning
	Mobile learning	Mobile learning
	Blended learning	Blended learning
	SCORM compliant	SCORM compliant
		Offline learning
		Custom user interface
		Content authoring tools

Source: On the basis of information on each LMS pages https://Moodle.com, last accessed November 20, 2020, https://open.edx.org, last accessed November 21, 2020, , verified as valid resource June 28, 2023. https://www.instructure.com/canvas/, last accessed November 21, 2020, , verified as valid resource June 28, 2023 and https://www.softkraft.co/learning-management-systems-comparison/#lms-comparison-what-lms-suits-your-needs-best.

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[6] Cf. Abdullateef, B. N., Elias, N. F., Mohamed, H., Zaidan, A. A., & Zaidan, B. B. (2016). An evaluation and selection problems of OSS-LMS packages. *SpringerPlus*, *5*(1), 248-283, p.252.

3.4 Why select a Moodle platform for SkillSea?

Possible platforms to comply with WP2 requirements were also assessed on their capabilities to potentially save time and on the risks that using each platform presented. All software that we considered was evaluated on the extent it could satisfy the following questions[7]:

- How many of our requirements can the platform support 'out-of-the box'?

- How easily can missing elements be added?

- Is the software maintained by the original authors?

- How familiar are SkillSea partners with the technologies used?

- Is it open-source for modular, plug-in-based design, enabling features to be added?

- Is it cost-free if a member of an organisation wanted to implement the same approach to Educational Packages without any technical or financial barriers?

- Availability of plug-ins directory for extra activities, blocks, themes, etc?

- Compatibility with offline learning – something which is very useful in the maritime industry due to increasing internet availability for maritime professionals while onboard ships.

Based on the above criteria and the classifications (cf. sources in Figure 3.2) of availability of features of shortlisted LMSs, and in order to mitigate any risk factor in terms of potential gaps, including technical ones, it was decided to base the portal on the Moodle platform.

A key factor which affected this decision is the widespread use of Moodle in MET/universities, with the vast majority of SkillSea METs already using LMSs having opted for Moodle.

The evaluation and final selection process were done in close consultation with all EP-involved partners across WP2 of the project.

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[7] There Is a multitude of lists - from six to 10 factors – across the WWW, as suggested shortlists of related criteria for LMS selection; the list of questions answered reflects a mixture of these.

References

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4. CONFIGURATION OF THE MOODLE PLATFORM FOR SKILLSEA

4.1 Overview of Moodle's general capabilities and operation

Moodle – like all other learning management systems – is an online platform for teacher-student collaboration, enabling instructors to create online classes and add resources with access independently from classes.

Moodle also allows the quick return of results of assignments as well as collaboration with plagiarism-checking software – such as Turnitin – and also the setting of deadlines for electronic submission of coursework.

Communication is facilitated in Moodle via announcements with mail prompts to students and chats. Practically all types of class material can be uploaded with on-off display set by instructors, while synchronous teaching is supported by teleconference sessions with the Big Blue Button or via set and announced Zoom or other types of class sessions, along with synchronous uploaded resources.

Moodle alleviates the administrative burden on instructors managing courses and provides students with clear pathways to fulfil their obligations while fostering their digital literacy skills. Moreover, Moodle can import content from various formats also providing open output formats (Moodle XML, GIFT).

Interface layout and structure of a learning environment are the most important features for the end user and it is critical for the success of any LMS that their needs are considered from the initial design stage.

From this perspective, the two main target groups of the SkillSea portal are MET students and teachers. Both these groups have different preferences for online learning experiences, and to address this a two-layer approach is adopted based on the content of courses – My courses: Course name_ teacher access and Course name_ student access.

4.2 Procedure for content generation using the Moodle platform

This section reports on the procedure for content generation using the Moodle-based Learning Management System platform, according to the published Moodle standard material (https://Moodle.com). The definition of the main components/steps required for SkillSea content generation follows, next.

Courses: Managing courses and categories; this section in Moodle provides the course template for the content generation, with the editor having to fill in the following components in order to create a course.

- General

- Description

- Course format

- Appearance

- Files and uploads

- Completion tracking

- Groups

- Role renaming

- Tags

According to the Moodle format, each component of the course includes:

- General

- Course full name

- Course short name

- Course category

- Course visibility

- Course start date – Day – Month – Year – Hour – Minute

- Course end date - Day – Month – Year – Hour – Minute

- Enable

- Course ID number

Image 4.1

Moodle-based SkillSea course page screenshot

(9 November 2020)

Description

- Course summary

- Course image (in GIF, JPEG, PNG)

Image 4.2 below shows the course description page in the Moodle format which includes the following:

- Course format

- Force language

- Number of announcements

- Show gradebook to students

- Show activity reports

Image 4.2

SkillSea course description page screenshot

(9 November 2020)

Image 4.3, next, shows the features of the course appearance page in their Moodle format through two screenshots and covers the following:

Appearance

- Force language

- Number of announcements

- Show gradebook to students

- Show activity reports

- Files and uploads

- Maximum upload size

Completion tracking

- Enable completion tracking

- Groups

- Group mode

- Force group mode

- Default grouping

Role renaming (various definitions) can also be enabled, as well as the implementation of Tags. The full description of each component is provided in the course template in the format of a pop-up window.

Image 4.3

SkillSea course appearance page screenshot

(9 November 2020)

4.3 Front page Moodle settings and features of SkillSea course material

The front page includes all the courses for publication when Educational Packages are complete. The front-page settings are varied in Moodle accordance, with the items and the users' role. More specifically[8]:

- General site's front page

The items selected below will be displayed on the site's front page:

- Full site name (full name)

- Short name for site (a single word, for example)

- Front page description summary

- Front page items when logged-in

The items selected below will be displayed on the site's front page when a user is logged in.

- Announcements

- List of courses

- Enrolled courses

- List of categories

- Combo list

- Course search box

- None

Maximum category depth[9]: deeper level categories will appear as links, and users can expand them with AJAX request.

Maximum number of courses: maximum number of courses to be displayed on the site's front page in course listings.

Include a topic section: if selected, a topic section is displayed on the site's front page.

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[8] All information in lists and Tables here - with minor adjustments – reflects the Moodle fundamental settings as published in https://moodle.com and SkillSea material on http://116.203.231.8/estudy/login/index.php
[9] This specifies the maximum depth of sub-categories expanded when displaying categories or combo lists.

- Number of announcements

  - Comments displayed per page

  - Default front page role

  - Student (student)

  - Guest (guest)

  - Authenticated user on front page (front page)

Image 4.4

SkillSea courses appearance front page screenshot

(9 November 2020)
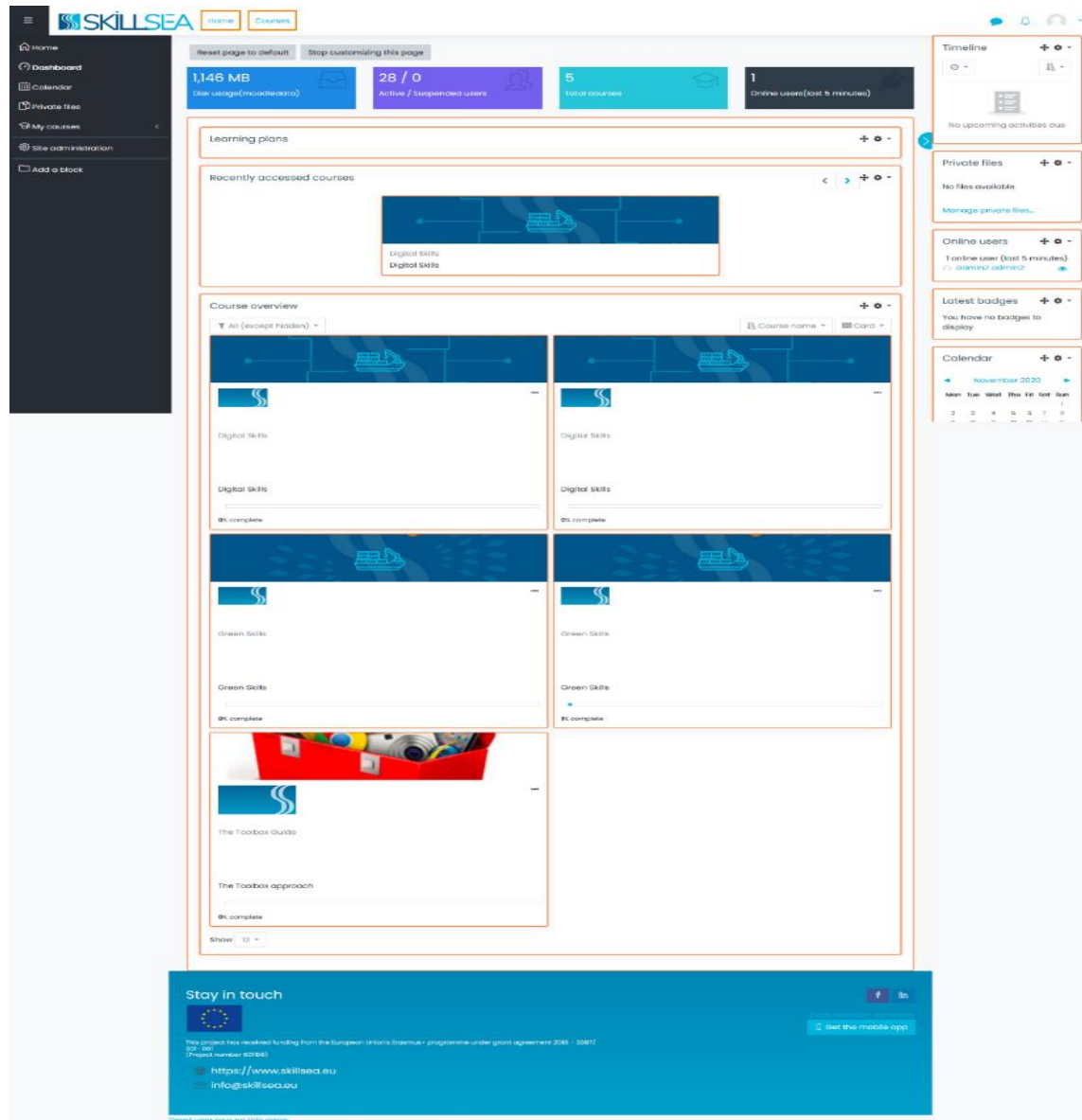
Creators of educational packages in a Moodle LMS can select functional activities on a modular approach, as summarised in Annex 1 on the basis of the detailed description provided on the Moodle platform.

4.4 User roles

Roles are users' accounts identifying participants for the site and courses. More specifically, a role is a collection of permissions defined for the whole system. These permissions are assigned to specific users in specific contexts. In general, a user is a specific participant who is allowed to enter a Moodle site and each user account has a specific role carrying a set of permissions.

This set of permissions allows different levels of interaction with Moodle, as installation automatically creates a set of default roles — Administrator, Teacher, Non-Editing Teacher, Course Creator, Student, and Guest — which are classic alternative capacities a Moodle user can have in a typical academic environment, and which also correspond to the physical reality in educational settings.

✓ **Capability**: capabilities relate to fewer restrictions for the key roles setting the course environment, so they are proportionate to the habitual authority hierarchy in the learning process. For example, a Teacher role can post discussions to the News forum, but a Student role can only read a news forum and not post to it or reply.

✓ **Permission**: there are four options in Moodle: Not Set/Inherit; Allow; Prevent; or Prohibit.

✓ **Activities**: Moodle enables modules to be separated within a course. An instructor can therefore set up to work with individual students, groups, or everyone, while for many of the activities push information to a course grade book is also possible.

Existing user roles within Moodle10 are as follows:

Table 4.1

Moodle course user roles

Manager	Managers can access courses and modify them while usually not participating in these in other capacities
Course creator	These roles can create new courses
Teacher	Teachers can do anything within their assigned course, including changing activities and marking
Non-editing teacher	Non-editing teachers can teach in courses and grade students, but may not alter activities for a course
Student	Generally, they have fewer privileges within a course
Guest	Guests have minimal privileges and cannot usually enter text anywhere
Authenticated user	All logged-in users
Authenticated user on frontpage	All logged-in users in the frontpage course

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[10] Cf. https://docs.moodle.org/310/en/Standard_roles, last accessed 10 June, 2023.

4.5 Access rights and licenses

SkillSea educational packages are accessible online through the portal in a customised online environment available at https://www.skillsea.eu/index.php/maritime-education-training-portal/educational-packages and the learning management system Moodle platform available at http://116.203.231.8/estudy.

For the Moodle platform, the users must register and obtain a password to have access as per their user profile (authenticated user, student, guest). Intellectual property rights (IPR) should be respected as defined for the possible uses of the Moodle^{TM} and any material referring to it as included in https://moodledev.io/general/license#:~:text=The%20brand%20and%20word%20%22Moodle,similar%20names%20by%20third%20parties, while the SkillSea guide on how to use the educational resources should also be consulted by the users of the platform and the portal/website in general. Annex 1 provides a list of activities and resources available in a Moodle environment.

References

- Moodle™ (2020). https://moodle.com

- Moodle™ (2020). https://docs.moodle.org/310/en/Standard_roles, last accessed June 10, 2023.

5. BEYOND THE SKILLSEA PROJECT: PORTAL AND WEBSITE

5.1. Prospects of the SkillSea portal/site

Two major outcomes of SkillSea – the structural cooperation across a large number of European MET establishments and content providers through the creation of the Maritime Education and Training Network (MET-NET) and the proposal for the European Maritime Skills Forum (E-MSF) – are going to be served through appropriate content as this evolves with the new activities of MET-NET, which will also play a role in the creation of the E-MSF, as indicated in the SkillSea key findings.[11]

The portal allows the further, user-adapted, detailed implementation of the Moodle platform as the European MET diversity has been well established through SkillSea research since the start of the project.[12]

WP3 will continue to update and maintain the site following the project, in line with the SkillSea submission. This will be done in close cooperation with MET-NET – a main legacy of the SkillSea project – serving as the forum for structural MET cooperation across Europe and which is expected to be a key initiator of future-proof content and methods for the education and training of maritime professionals in Europe.

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[11] SkillSea (2023). D3.7 *Strategy Key Findings*, deliverable report.

[12] SkillSea (2020). D3.1 *Strategy Plab Framework, op.cit.* and SkillSea (2022). D3.2 *Measuring Evaluation Strategies in MET,* deliverable report.

References

- SkillSea (2020). D3.1 *Strategy Plan Framework*, deliverable report.

- SkillSea (2023). D3.7 *Strategy Key Findings*, deliverable report.

Annex 1: Moodle activities and resources

Assignment

Chat

Choice

Database

External tools

Feedback

Forum

Glossary

Lesson

Quiz

SCORM package

Survey

URL

Wiki

Workshop