



TITLE: BLUEPRINT MARITIME SHIPPING PORTAL



DELIVERABLE: 3.6
DATE: April 29, 2021
VERSION: 3.0

MAIN EDITOR(S)	EUGENIDES FOUNDATION
CONTRIBUTERS	-
REVIEWER(S)	STC GROUP, SIMAC
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

DISCLAIMER SkillSea is co-funded by the Erasmus+ Programme of the European Union. The views expressed in the working papers, deliverables and reports are those of the project consortium partners. These views have not been adopted or approved by the Commission and should not be relied upon as a statement of the Commission's or its services' views. The European Commission does not guarantee the accuracy of the data included in the working papers and reports, nor does it accept responsibility for any use made thereof.

Acknowledgements

The contributors to this deliverable would like to acknowledge the feedback of WP3 partners, WP2 partners (content providers) and especially WP2 leader, for their valuable inputs. Thanks are expressed to the Erasmus+ programme and the EU Commission for financial support.

Summary SkillSea Report

Deliverable: 3.6, version: 1.0, date: 18 December 2020

This interim document (D3.6) reports the history of the creation of the website and the portal, 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 important part of the SkillSea concept. The portal will allow easy information management, availability to the wider public of the toolbox developed by WP2 and will also make available the Educational Packages (EPs) that will be developed based on the toolbox itself.

This interim document summarises the initial 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

Acknowledgements.....	3
Summary SkillSea Report.....	4
1. TIMELINE OF THE WEBSITE CREATION	8
1.1. Timeline of the website creation	9
2. SKILLSEA WEBSITE.....	11
2.1. Web-based communication.....	12
2.2. Project logo and visual communication	12
2.3. Website objectives and goals.....	12
2.3.1 Registration of the domain name	13
2.3.2 Website design and management	13
2.3.3. May 2020 update.....	14
2.3.4 Website description	15
2.3.5 Website analytics.....	19
2.4 SkillSea community and network.....	21
3. BLUEPRINT MARITIME SHIPPING PORTAL	22
3.1 The Blueprint Maritime Shipping Portal.....	23
3.2 Development methodology.....	26
3.3 LMS market research.....	27
3.4 Why select a Moodle platform for SkillSea?	30
References	31
4. CONFIGURATION OF THE Moodle PLATFORM FOR SKILLSEA	32
4.1 Overview of Moodle’s general capabilities and operation	33
4.2 Procedure for content generation using the Moodle platform	34
4.3 Front page Moodle settings and features of SkillSea course material	39
4.4 User roles	41
4.5 Access rights and licenses	43
5. STAKEHOLDER FORUM.....	44
5.1 Stakeholder forum.....	45
Annex 1: Moodle activities and resources	46

ANNEXES

Annex 1: Moodle activities and resources	42
--	----

FIGURES

Figure 3.1 Portal and deliverable review	23
Figure 3.2 Comparative features of Moodle-Canvas LMS – Open Edx LMS	27

TABLES

Table 2.1 Sitemap of Skillsea.eu	15
Table 4.1 Moodle course user roles	39

IMAGES

Image 2.1: Screenshot desktop mode	16
Image 2.2: Website page popularity screenshot	18
Image2.3: Website analytics screenshot	19

Image 3.1: Main page screenshot	22
Image 4.1: Moodle-based SkillSea course page screenshot	33
Image 4.2: SkillSea course description page screenshot	34
Image 4.3: SkillSea course appearance page screenshot	36
Image 4.4: SkillSea courses appearance front page screenshot	38

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.
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.
METs	Maritime Education and Training
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
2018-11-15	Comparison of various CMS platforms by Eugenides Foundation (EF)
2018-11-29	Selection of content management system (CMS): Joomla
2018-12-03	Started the development of design proposals (internally by EF)
2018-12-12	Two proposals for the SkillSea logo submitted to partners by the STC Group
2018-12-15	One design proposal internally selected and internally submitted for improvements
2018-12-18	Main website development and installation
2018-12-28	First development of content; content added to the main website
2019-01-05	SkillSea server configuration
2019-01-05	SkillSea database and emails creation
2019-01-10	Content developed added to the main website
2019-01-18	One design proposal submitted to the SkillSea coordinator and WP leaders
2019-01-25	Feedback by WP leaders and incorporation into the website proposal
2019-02-01	
2019-02-06	Presentation of the website to the partners at the kick-off meeting
2019-02-13	Skillsea.eu domain creation
2019-03-08/15	Content updates/modifications added to the main website
2019-03-18	Started the development of the web folder for collaboration (internal-external)

Date	Action
2019-04-01	Development of the terms of data policy and privacy policy and notice for the website
2019-04-08	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
2019-04-15	Added new photos to the various sections of the website
2019-05-21	Reply by the coordinator on the appointment of data processor and data controller
2019-06-14	Appointment of data processor and data controller by EF
2019-06-21	Publication of the official website to the public
2019-07-01	Continuous updates
2019-12-31	Development of portal prototype
2020-01 to 12	Deployment of Moodle platform according to WP2 requirements
2020-05-02	New interface layout and sub-menus
2020-07-30	Uploaded toolbox

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 those institutions, educational authorities involved in MET.

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 is 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 is administrated by the WP3 leader, responsible also for the management and maintenance of the developed innovative tools.

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 D4.1¹.

2.3.3. May 2020 update

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 with responsibility 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 second year, the content and some structural elements of the website were renewed and enriched as important project materials were produced, such as project deliverables, dissemination materials and innovative tools.

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

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	213
– Access to innovative tools	216
Dissemination Materials	209

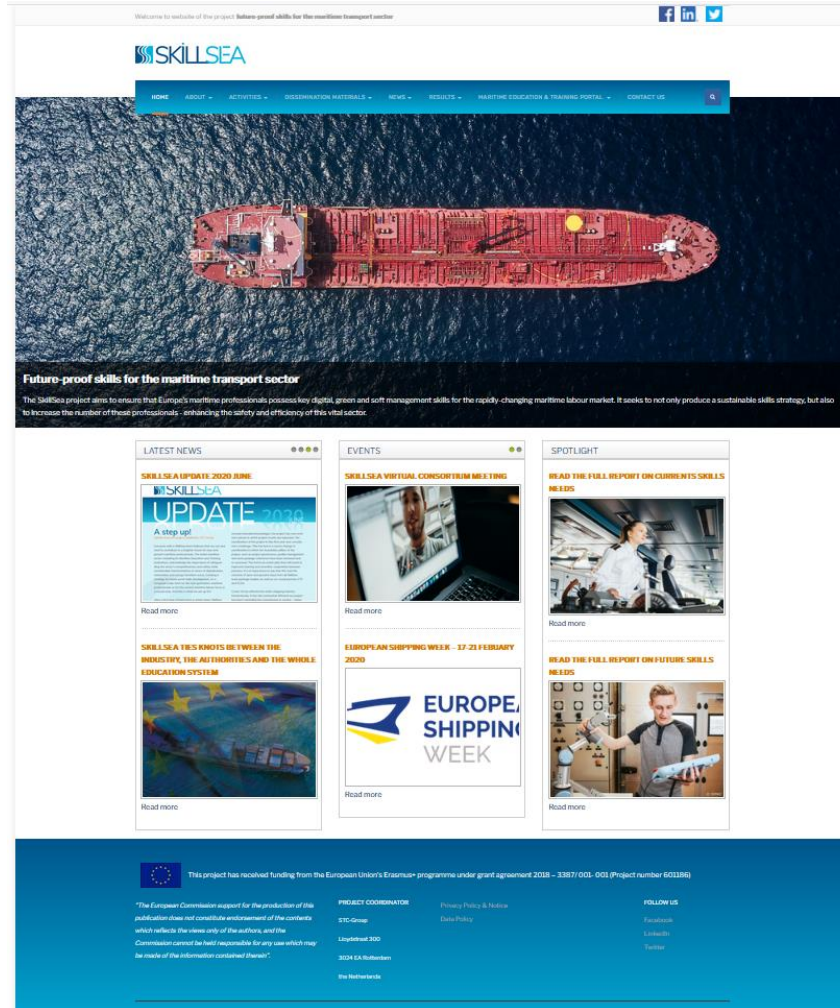
– Factsheets (Alias: factsheets)	217
– Newsletters (Alias: newsletters)	218
– Press releases (Alias: press-releases)	220
– Presentations (Alias: presentations)	264
News	170
– News (Alias: news)	197
– Events (Alias: events)	198
– Spotlight (Alias: spotlight)	263
Results	222
– Public deliverables (Alias: public-deliverables)	223
– Piloting findings (Alias: piloting-findings)	224
– Educational materials (Alias: educational-materials)	225
Maritime Education & Training Portal (Alias: maritime-education-training-portal)	228
– Education Packages for specified skills	230
– Toolbox design for educational packages (Alias: toolbox-design-for-educational-packages)	256
Contact Us (Alias: contact-us)	118

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 – 9/11/2020)



About

Includes a deeper insight into the rationale, why this project is 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 and a suite of innovative tools with open access, provided by WP3 and appropriate for 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 and presentations.

News

Latest news, project highlights and other events are published under this section. It is dynamic and regularly updated.

Results

In this section, the public deliverables will be available for downloading, together with certain piloting outcomes and some educational materials for the public.

Contacts

A contact form is available for communication with the project coordinator.

Social media

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

2.3.5 Website analytics

Based on the Joomla CMS, our most popular pages within the website are as per Image 2.2 below:

Image 2.2
Website page popularity screenshot
(9 November 2020)

The screenshot shows the Joomla! administrator interface for the 'Articles' section. The table lists various articles with their respective hit counts, which are highlighted in a red box. The 'Hits' column is sorted in descending order.

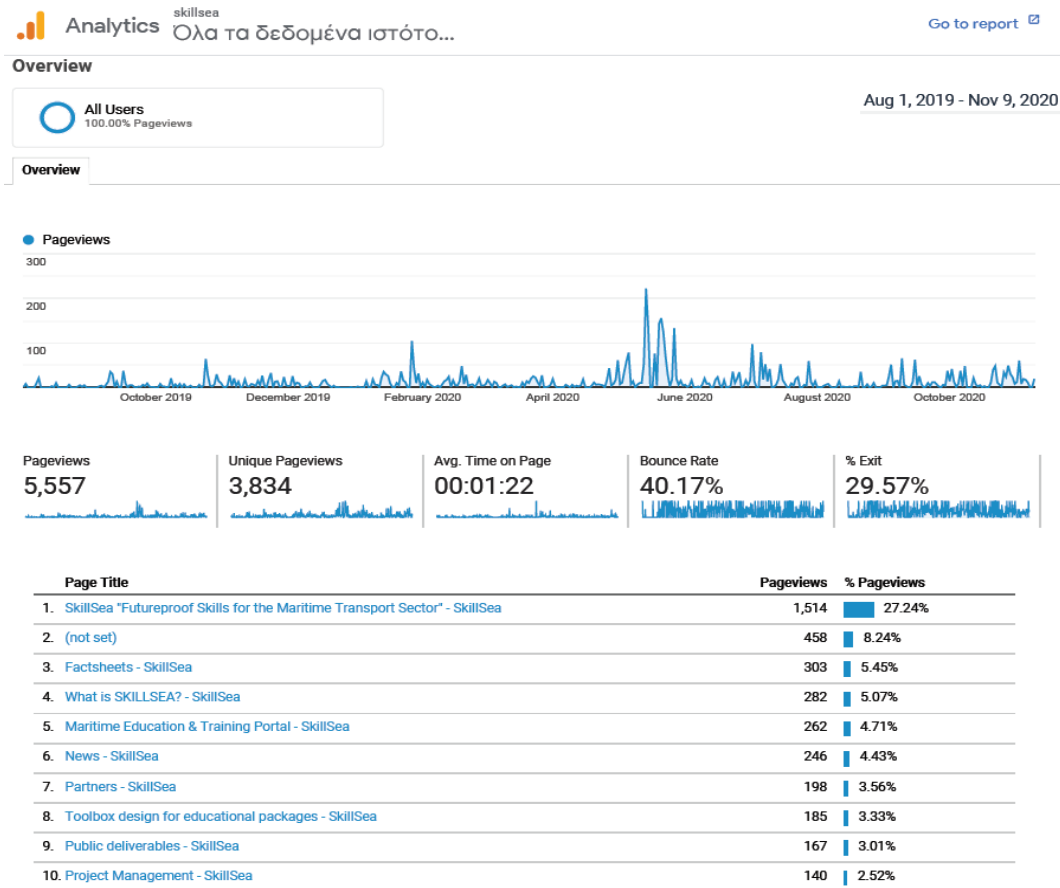
Status	Title	Access	Author	Language	Date Created	Hits	Notes	Rating	ID
✓ ☆	Work packages overall structure (Alias: work-packages-verall-structure)	Public	Super User	All	2019-01-07	6110	0	0	57
✓ ☆	Fact sheets (Alias: fact-sheets)	Public	Super User	All	2019-01-30	3864	0	0	59
✓ ☆	Partners (Alias: partners)	Public	Super User	All	2019-01-07	3761	0	0	45
✓ ☆	What is SKILLSEA? (Alias: what-is-skillsea)	Public	Super User	All	2019-01-07	3395	0	0	46
✓ ☆	Contact (Alias: contact)	Public	Super User	All	2019-01-14	3269	0	0	48
✓ ☆	Access to data and tools (Alias: access-to-data-and-tools)	Public	Super User	All	2019-03-12	2903	0	0	76
✓ ☆	Public deliverables (Alias: public-deliverables)	Public	Super User	All	2019-01-30	2858	0	0	58
✓ ☆	Svendborg Meeting, June 2019 (Alias: svendborg-meeting-june-2019)	Public	Super User	All	2019-07-11	2784	0	0	82
✓ ☆	Precursor Projects (Alias: precursor-projects)	Public	Super User	All	2019-01-07	2658	0	0	43
✓ ☆	Maritime education and training portal (Alias: maritime-education-and-training-portal)	Public	Super User	All	2019-03-28	2467	0	0	78

Since 1 August 2019, Google Analytics has been installed on the SkillSea web page in order to provide a more detailed view of visitor behaviour. A brief overview of data analytics from the website is provided below in Image 2.3.

Image 2.3

Website analytics screenshot

(9 November 2020)



From the data for the period 01/08/2019 to 09/11/2020 it emerges that the website achieved 5,557-page views. In particular, 27.24% (1,514-page views) 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 pageviews² data, there were 3,834 visits to the website. The average time spent on the website was 01.22 minutes, while the bounce rate was 40.17%, and the exit rate 29.57%.

² "A unique pageview represents the number of sessions during which that page was viewed one or more times.", *Web Analytics, definition by Google*.

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

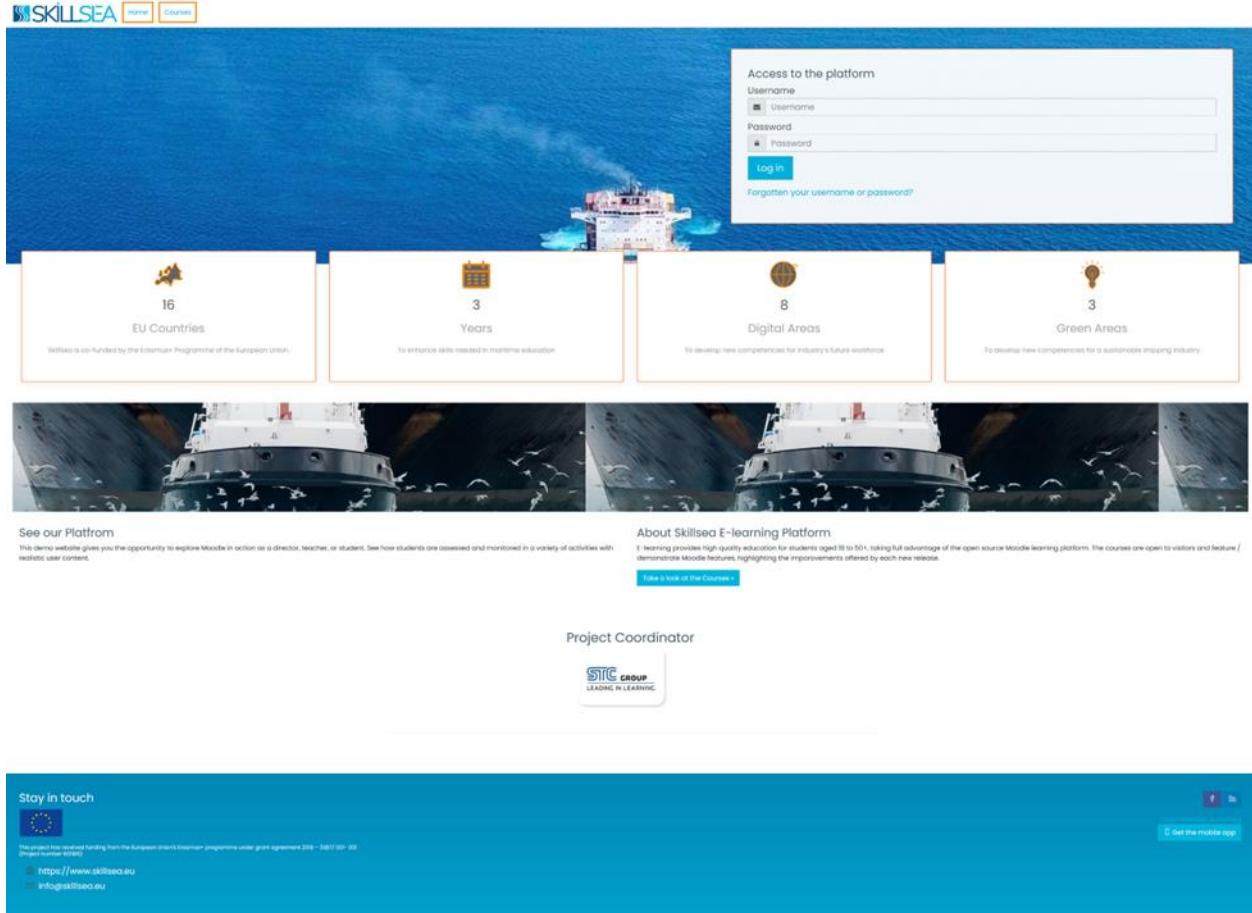
The Blueprint Maritime Shipping Portal (or the 'Maritime Education and Training portal') will act as the main hub to host the toolbox and educational packages that will upskill graduates from various MET courses and participants/employees in line with the future needs of the shipping industry. The main aim of the portal is to host educational packages (mainly in blended learning concept) **on digital skills, green skills, STEM, leadership, innovation and entrepreneurship**³ to prepare maritime professionals for the future, and to enhance labour mobility in the maritime shipping sector, supported by the educational package Train-the-Trainer. Image 3.1 presents the main page of the site, providing access to the entire platform and highlighting important aspects of the SkillSea project.

³ Cf. SkillSea (2020). D3.1 *Strategy Plan Framework*, deliverable report, Chapter 4 for a concise overview of the EPs.

Image 3.1

Main page screenshot

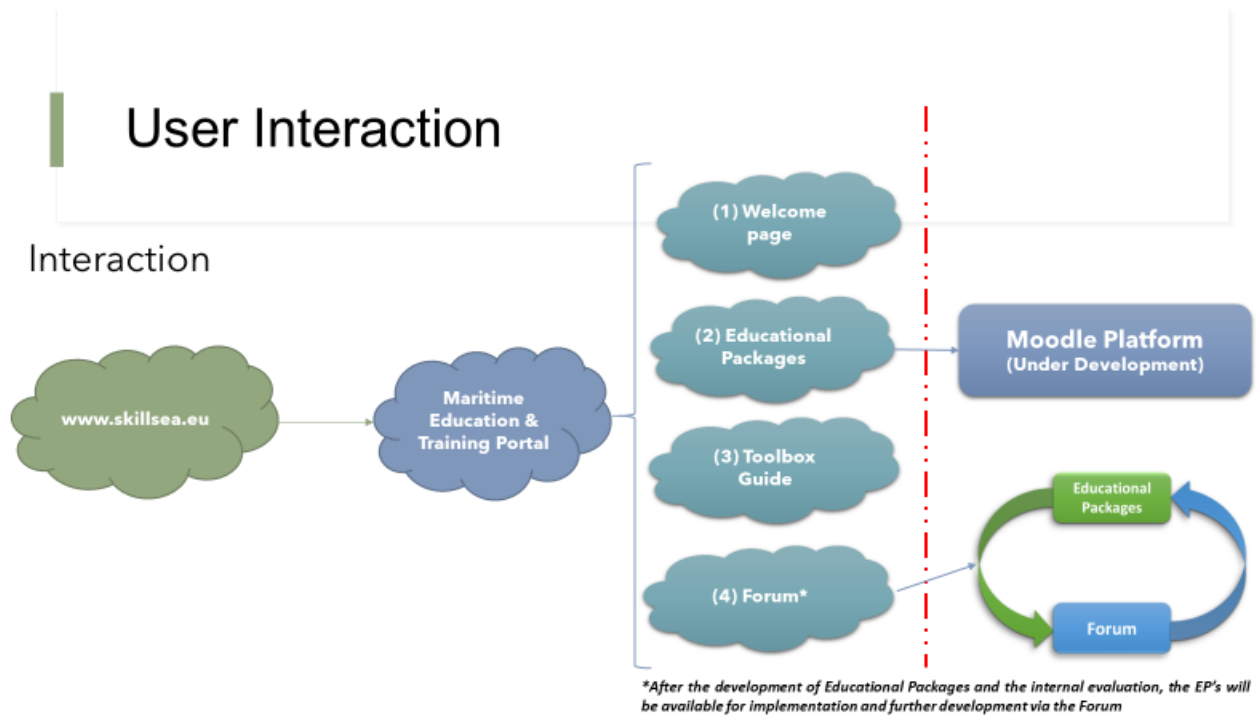
(9 November 2020)



A general overview of the portal development in the context of D3.6 is shown in Figure 3.1 below:

Figure 3.1

Portal and deliverable overview



All the above information will be public in the portal before entering the Moodle platform, the main 'hub' of the educational packages. More specifically, it is envisaged that the fully developed site will include the following:

- **Home page:** A descriptive text about the Education & Training Portal and the content of Educational Packages (EP) is displayed.
- **Educational Packages:** A descriptive text about each EP will be provided.
- **Toolbox design for EPs:** Available to the public as a guide for designing EPs.
- **Stakeholder forum:** A forum for stakeholders will be developed to: a) identify future skills and anticipate future gaps; b) discuss future potentialities and challenges and c) implement and further develop the EPs.

The portal can be accessed at <https://www.skillsea.eu/index.php/maritime-education-training-portal>.

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.

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 contents 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 developers⁴, 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.

OpenEdX

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

⁴Cf. <https://moodle.com>, last accessed November 20, 2020.

platform. According to its developers⁵, 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

Canvas LMS is oriented, according to its developers⁶, 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 frustration and reducing support costs.

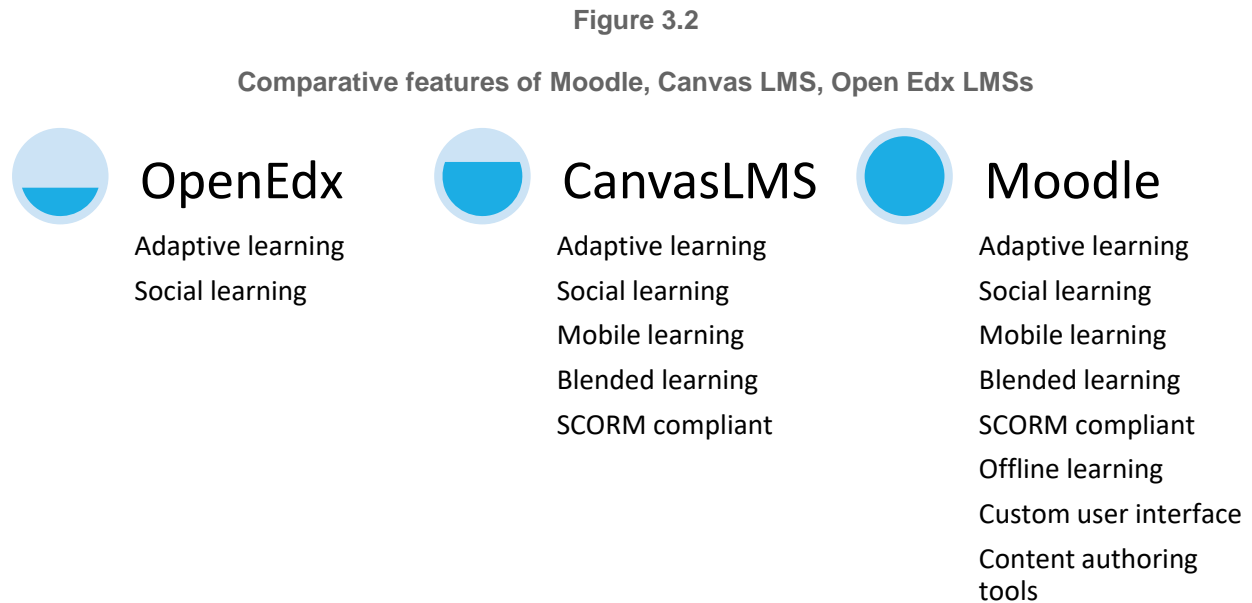
For the purpose of LMS selection we also reviewed other open-source packages such as eFront, CourseSites by Blackboard, DigitalCHALK, Sakai, Chamilo, Totara, edloomio. However, as there was no familiarisation with these among main partners and most other platforms did not cover the evaluation criteria,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

⁵Cf. <https://open.edx.org>, last accessed November 21, 2020.

⁶ Cf. <https://www.instructure.com/canvas/>, , last accessed November 21, 2020.

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)⁷:



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. <https://www.instructure.com/canvas/>, last accessed November 21, 2020. and <https://www.softkraft.co/learning-management-systems-comparison/#lms-comparison-what-lms-suits-your-needs-best>.

⁷ 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 questions⁸:

- 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.

⁸ 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

- 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.
- Butakov, S., Solodky, O., & Swar, B. (2013). LMS implementation in startup institutions: Case study of three projects. In Learning Management Systems and instructional design: Best practices in online education (pp. 40-54). IGI Global.

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.

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)

The screenshot shows the Moodle-based SkillSea course page. The browser address bar displays the URL: 116.203.231.8/estudy/course/edit.php?category=3&returnto=topcat. The page title is "Skillsea E-learning Platform". The breadcrumb navigation shows: Home > Site administration > Courses > Manage courses and categories > Add a new course. The main content area is titled "Add a new course" and includes a sidebar with navigation options: Home, Dashboard, Calendar, Private files, My courses, Site administration, and Add a block. The "General" section is expanded, showing the following fields:

- Course full name:
- Course short name:
- Course category: The Toolbox Guide
- Course visibility: Show
- Course start date: 18 November 2020 00:00
- Course end date: 18 November 2021 00:00 (Enable)
- Course ID number:

Below the "General" section, there are several collapsed sections: Description, Course format, Appearance, Files and uploads, Completion tracking, Groups, Role renaming, and Tags.

Description

- Course summary
- Course image (in GIF, JPEG, PNG)

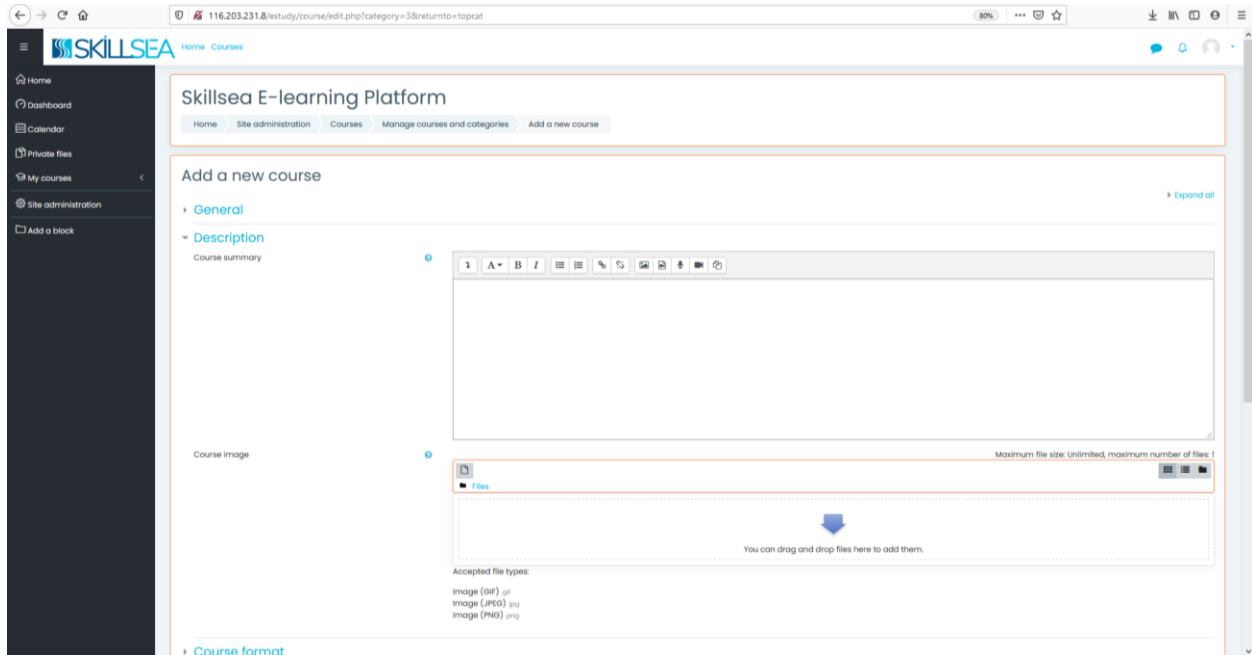
Image 4.2 below shows the course description page in the Moodle format which includes the following:

- 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)



Course format

- Force language
- Number of announcements
- Show gradebook to students
- Show activity reports

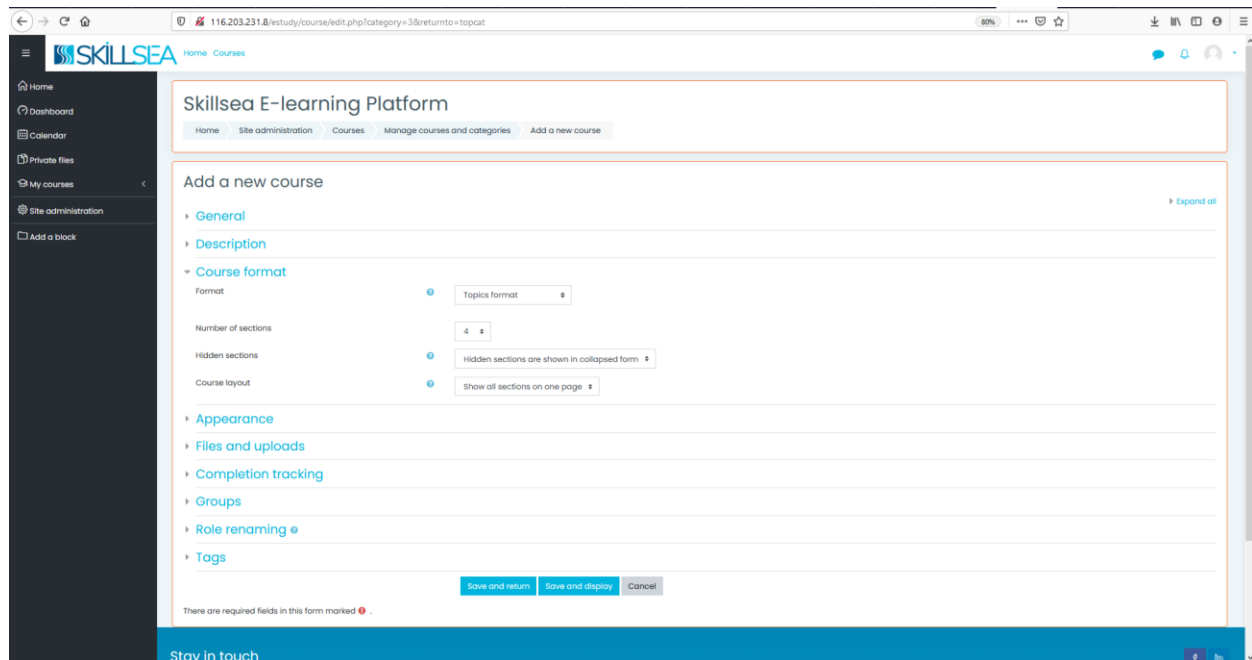


Image 4.3 below shows the features of the course appearance page in their Moodle format through two screenshots and covers the following:

Appearance

- Force language
- Number of announcements
- Show gradebook to students
- Show activity reports
- Files and uploads
- Maximum upload size

Completion tracking

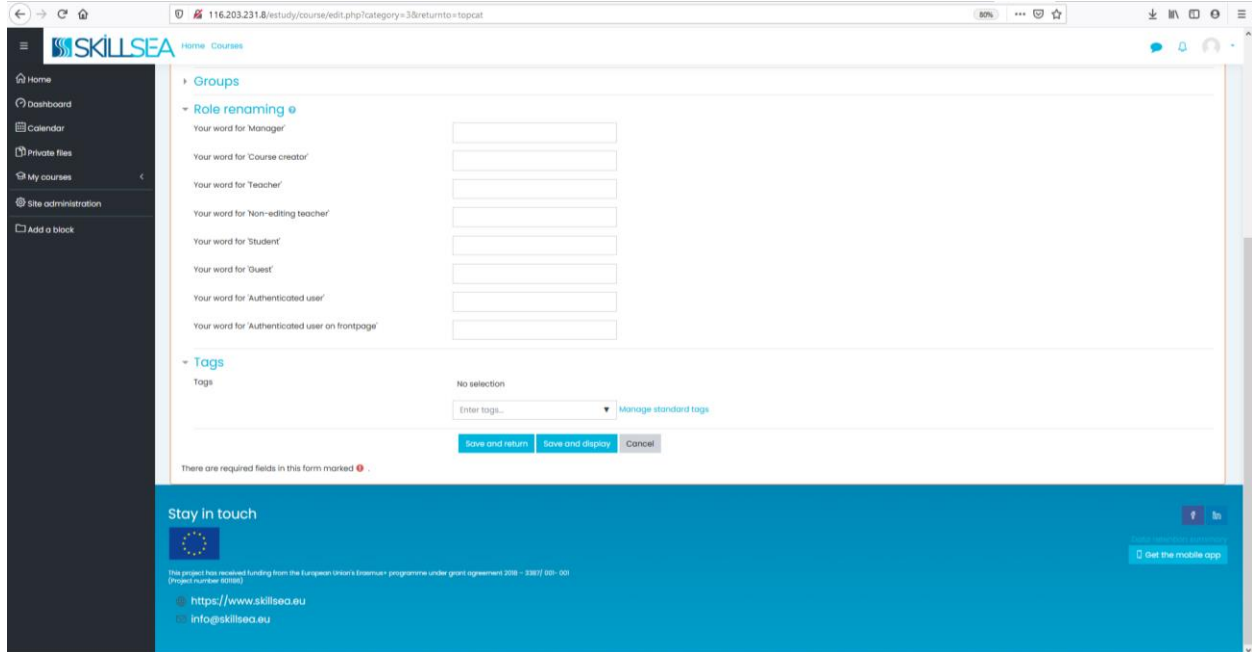
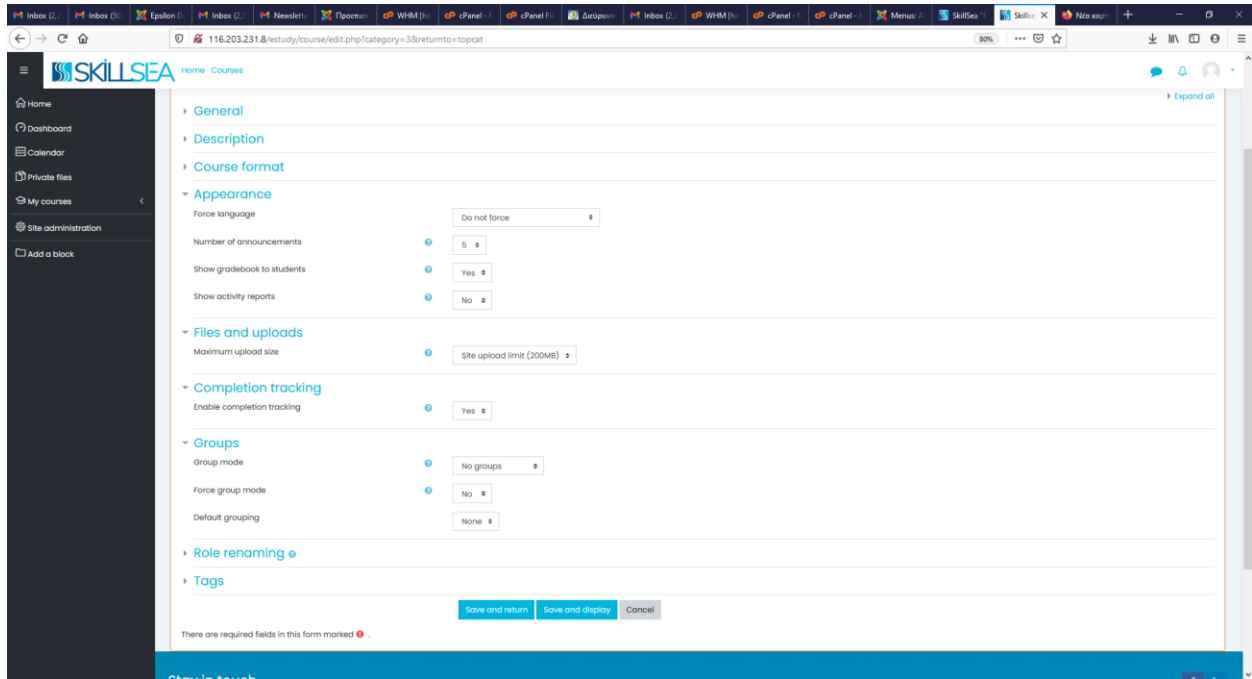
- Enable completion tracking
- Groups
- Group mode
- Force group mode
- Default grouping

Role renaming (various definitions) can also be enabled, as well as the implementation of Tags.

Image 4.3

SkillSea course appearance page screenshot

(9 November 2020)



The full description of each component is provided in the course template in the format of a pop-up window.

4.3 Front page Moodle settings and features of SkillSea course material

The front page will include all the courses for publication when all Educational Packages are complete. The front-page settings are varied in Moodle accordance, with the items and the users' role. More specifically⁹:

- 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 depth¹⁰

Deeper level categories will appear as links and users can expand them with AJAX request.

⁹ 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>

¹⁰ This specifies the maximum depth of sub-categories expanded when displaying categories or combo lists.

- Maximum number of courses

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

- Include a topic section

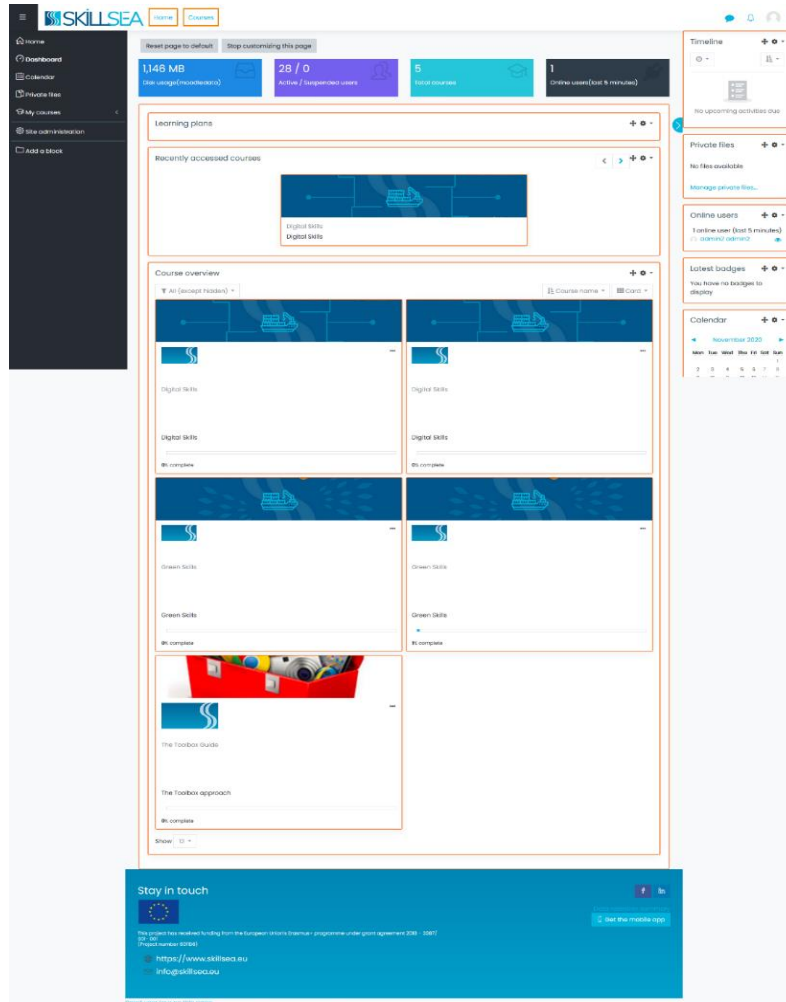
If selected, a topic section will be displayed on the site's front page.

- 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.

The existing user roles within Moodle11 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 enter text anywhere usually
Authenticated user	All logged-in users
Authenticated user on frontpage	All logged-in users in the frontpage course

¹¹ https://docs.moodle.org/310/en/Standard_roles

4.5 Access rights and licenses

SkillSea educational packages will be accessible in the online learning management system (LMS) through the portal and its Moodle platform. Users must register and obtain a password to have access as per their user profile (authenticated user, student, guest). Other intellectual property rights (IPR) issues will be defined and resolved at a later stage and a fuller guide on how to use the educational resources will be provided upon the completion of the material, until which time the portal construction remains in progress.

Annex 1 provides a list of activities and resources available in a Moodle environment and it is anticipated that a summary electronic handbook with links to the full text of the original relevant Moodle pages will be added to the final SkillSea D3.6 deliverable report and to the portal in the Help section.

5. STAKEHOLDER FORUM

5.1 Stakeholder forum

As described in the key strategic report of SkillSea12, a stakeholder forum will be created by the portal with a three-fold function: i) providing a mechanism to monitor future gaps; ii) the implementation and further development of the Educational Packages, iii) to support and facilitate the structured cooperation established in WP2.

In line with earlier interim findings and assessments by SkillSea work packages, it was determined that a web service should be provided by the portal in the form of a Q&A page targeted at skills gaps. Input should safeguard anonymity, be cost-free and consist of organised queries about new elements of technology or new shipping business practices together with relevant answers based on already available educational and training packages. This web service would inform the European Skills, Competences, Qualifications and Occupations (ESCO) platform, while prospective students - along with MET providers throughout Europe - would have an interest in participating and boosting the dynamic of such a Q&A site.

The stakeholder forum design aims to create a convincing case for the validity of SkillSea recommendations. In order for the recommendations of the project to be valid and acceptable, the input provided should be considered significant by the key stakeholders. Given that the content providers and key stakeholders involved are of a high standing among their peers, their contributed input should provide a convincing validation case. In addition, the work of the interested parties will be facilitated through the creation of SkillSea working groups by thematic sector such as: i) Maritime Education and Training; ii) Technological challenges; iii) Workforce challenges; iv) Disruption and sea skills; v) Examples of good practices. Working groups will be small and flexible, with relevant stakeholders and a leader organising forum discussions. The feasibility, security, Intellectual Property Rights and rights to access the portal — compatible with EU practice — are to be finalised with the completion of Maritime Shipping Portal (D3.6) deliverable in M48 and will be included along the Key Strategy Findings (D3.7) of WP3 following appropriate partner and stakeholder consultations.

The stakeholders' forum will be developed and be operational in the third year of the project following the development of the Employability, Anticipating Skills Needs and Gaps Measurement (D3.3) of WP3 and the Skills and Competence Gap between current and future needs (D1.2.1) of WP1.

12 Cf. SkillSea (2020). D3.1 Strategy Plan Framework, deliverable report, Chapter 4.

Annex 1: Moodle activities and resources

Assignment

Chat

Choice

Database

External tools

Feedback

Forum

Glossary

Lesson

Quiz

SCORM package

Survey

URL

Wiki

Workshop



skillsea.eu



Co-funded by the
Erasmus+
Programme of the
European Union