



# **Maintenance and sustainability of the Open Schooling Navigator**

Deliverable 3.4

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## Executive Summary

Make it Open is a project that prioritises expanding participation through applying maker culture, citizen science and open schooling to science education. As part of this effort, Waag developed an online platform to enhance the sharing of Open Schooling learning material created by the project. These learning materials constructed by different consortium partners in co-design with teachers were assembled in an online platform, called the Open Schooling Navigator (OSN), which is available for use by teachers and educators who wish to explore Open Schooling.

This deliverable describes the components of the Open Schooling Navigator and how they will be maintained, re-used and localized. By releasing the OSN and its components under Creative Commons and open-source licenses, Waag aims to contribute to the thriving commons of shared knowledge and culture needed to address the world's most pressing challenges and create a better future for all.

The OSN has been developed using a co-creation process with the consortium partners as well as testing by the end-users of the platform: teachers and educators. The results of this testing have been incorporated in the final phase of the development of the OSN which led to the current version.

For the MOOC (see: <https://www.europeanschoolnetacademy.eu/courses/course-v1:MiO+OpenSchooling+2023/about>) two instruction videos of the OSN have been created by consortium partner European Schoolnet (EUN). These videos also serve as part of the dissemination effort of the consortium, such as in news packages promoting the Make it Open project.

This deliverable on the Open Schooling Navigator is the fourth and final report of work package 3.

## List of abbreviations

In alphabetical order:

CMS	Content Management System
LS	Learning Scenario
LU	Learning Unit
OS	Open Schooling
OSN	Open Schooling Navigator
UI	User Interface

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## Introduction

Make it Open has delivered -, tools and resources that are open for the education community to join, use or attend. Work package 3, led by Waag, developed the Open Schooling Navigator (OSN): an interactive online platform to support teachers and educators in navigating the Open Schooling world. The OSN can be found via de project website <https://makeitopen.eu>, the direct url is <http://openschoolingnavigator.eu>.

Previous deliverables in this work package describe the development process, design choices as well as set-up and outcome of user tests in great detail. They were written before the OSN went live. We highly recommend visiting the OSN online and reading these deliverables: D3.1, D3.2 and D3.3 to gain a complete picture of the work that has been done and the resulting product.

The OSN is a digital service, which on a conceptual level consists of three elements:

1. The editorial contents, Learning Scenarios (LS), Learning Units (LUs), and a toolkit contributed by the practice partners
2. The interactive and visual design of the website
3. Technology, consisting of an open-source stack, with customised and/or custom-made elements

The purpose of deliverable D3.4 is to provide a plan on the operation and usability of the OSN and how to keep it up-to-date for future usage. Additionally, we briefly describe the user experience of the OSN with print-screen images. We summarize the creation process, the use so far and the effort we made to research opportunities for maintenance of the OSN beyond Make it Open.



This report details both the minimum requirements for maintenance of the OSN as well as how the OSN and its separate elements can be re-used, extended and localized. The report is aimed at consortium partners and any interested third parties.

The editorial content (i.e., LS' and LUs) will be licensed under a Creative Commons license: Attribution-ShareAlike 4.0 International (CC BY-SA 4.0), suitable for education purposes. See: <https://creativecommons.org/licenses/by-sa/4.0/>

As previously stated in D3.1, the source code of the application, including design and user interface, will be publicly available on the Waag Gitlab server under a common open-source licence (either MIT or AGPL):

<https://gitlab.waag.org/alain/open-schooling-navigator/>

## **1. Set up of the Open Schooling Navigator**

The OSN is a digital service that enables teachers and educators to access, share, customise and build LS and/or LUs on the platform.

In addition, users can also use the platform to download materials. The OSN stimulates teachers and educators to use, customize and build their own LS' and LUs. The platform provides the functionality to share the amended or self-built LS'. It also provides the possibility to save the original, customized or self-built LS' as a PDF.

To support uptake and avoid barriers, the consortium agreed to opt for an 'open accessible' OSN. For the user, this has the benefit that no account / registration process is required in order to access content on the platform. From a maintenance and privacy-by-design perspective, this avoids both the need for extensive user and application management as well as storing and tracking of user data.

The Content Management System (CMS) currently has no feature for rights management. Feature for rights management would require support by the maintainer of the OSN for the addition or editing of content, such as the LS' and LUs. As a result, the platform does not require moderation.

The OSN is available in ten different languages. The translations have been provided by consortium partners and/or third parties.

In order to guide users in the usage of the OSN two videos were developed:

1. Explanation of the general set up of the OSN: <https://youtu.be/wplDeJ8ylxg>
2. Detailed explanation of amending and building your own LS' and LUs: [https://youtu.be/A5KNUhV\\_Tcl](https://youtu.be/A5KNUhV_Tcl)

Editorial and technical maintenance for the OSN is provided by Waag for the project duration.

As mentioned, the OSN, on a conceptual level, consists of three elements. These are further elaborated below.

## **1.1 Learning Scenarios, Learning Units and a Toolkit**

The LS' on the OSN are a roadmap to guide teachers and educators through Open Schooling. The LS consists of various activities and steps, or LUs that the teacher or educator can choose to follow. The OSN contains 16 LS' and 138 LUs.

The concept and criteria that the LS' and the LU's are built upon were developed by the partners under WP2 led by the Bloomfield Science Museum in Jerusalem (BSMJ). The content of the LS' and LUs were developed by 4 consortium partners in co-design with teachers that are part of the networks involved the Make it Open project.

The LS' and LUs on the OSN are predominantly based on Open Schooling concepts. Unlike traditional pedagogical methods, diverse physical settings, modified teaching roles and unique learning formats are used in order to stimulate an enriched and open learning experience. More importantly, it is specifically designed to create and maintain sustainable relations with the school's community. The content of the OSN focuses on Science, Technology, Engineering, the Arts and Mathematics (STEAM) teaching and is intended for students mainly between six and sixteen years old.

## **1.2 Website design and UI**

The interactive and visual design of the website has been constructed using project branding and extensive user testing.

Design and UI allow for multilingual use, in scripts that are both outlined on the right as well as outlined from the left.

### 1.3 Technology

The four main components in the technology for the OSN are:

- Drupal content management system  
The Open Schooling navigator uses Drupal as its content management system. The Open Schooling navigator uses Drupal 9 core, extended with a set of third-party modules.
- MariaDB SQL database  
MariaDB is the database engine behind the CMS. MariaDB is the open-source variant of MySQL and the most common database for Drupal to connect with.
- Gatsby frontend web application  
Gatsby is a front-end framework for building static React-based web applications with Node.js. Due to its flexibility to easily fetch and render content from a great variety of content and data sources, Waag chose to work with Gatsby. Gatsby also allowed Waag to build a secure platform.
- PDF Print Service  
This component is specifically meant for running as a Docker container on the production server. This allows the platform to print the LS' and the LUs as a PDF.

For further details on technology, dependency, instructions and source code, refer to the online git repository published at: <https://gitlab.waag.org/alain/open-schooling-navigator/>



## **2. What the OSN looks like**

In this chapter we will show and describe what the user experience of the OSN is like. We recommend the reader to visit the website and browse through the OSN. It is also possible to watch the instruction videos. Lastly, we take the reader through the main features of the OSN step by step.

### **2.1 How to get to the OSN**

Navigate to <https://makeitopen.eu/>, scroll down to ‘Open Schooling Navigator’ and click ‘visit the open schooling navigator’. Alternatively navigate to <https://openschoolingnavigator.eu/> directly.

### **2.2 How to video**

Two instruction videos were created to explain the usage of the OSN. Initially the videos were solely accessible in the ‘Make it Open Schooling’ MOOC. However, after the launch of the MOOC, the videos have also been made available for the public. The first video provides a general explanation as to what the OSN is and what it can do. The second video provides in more detail how to adapt an existing LS and how to build your own LS.

The videos are hosted on YouTube.

Video 1, general introduction to the OSN

<https://youtu.be/wplDeJ8ylxg>

Video 2, detailed explanation how to adapt and how to make your own LS.

[https://youtu.be/A5KNUhV\\_TcI](https://youtu.be/A5KNUhV_TcI)

## 2.3 Explanation of the fundamentals of the OSN

When the user arrives on the main page of the OSN, the page is divided into four elements.

1. Dive into the lesson plans straightaway by using the dropdown menu of the parameters.
2. Get inspired where the user can choose to navigate to an overview of the LS', LU or the build your own section.
3. Information regarding OS from the Toolkit4. More information about the OSN itself.

### 2.3.1 Landing page

Once you arrive on the landing page, four basic parameters 'what', 'who', 'where' and 'with' are shown. With these parameters an OS LS is built.

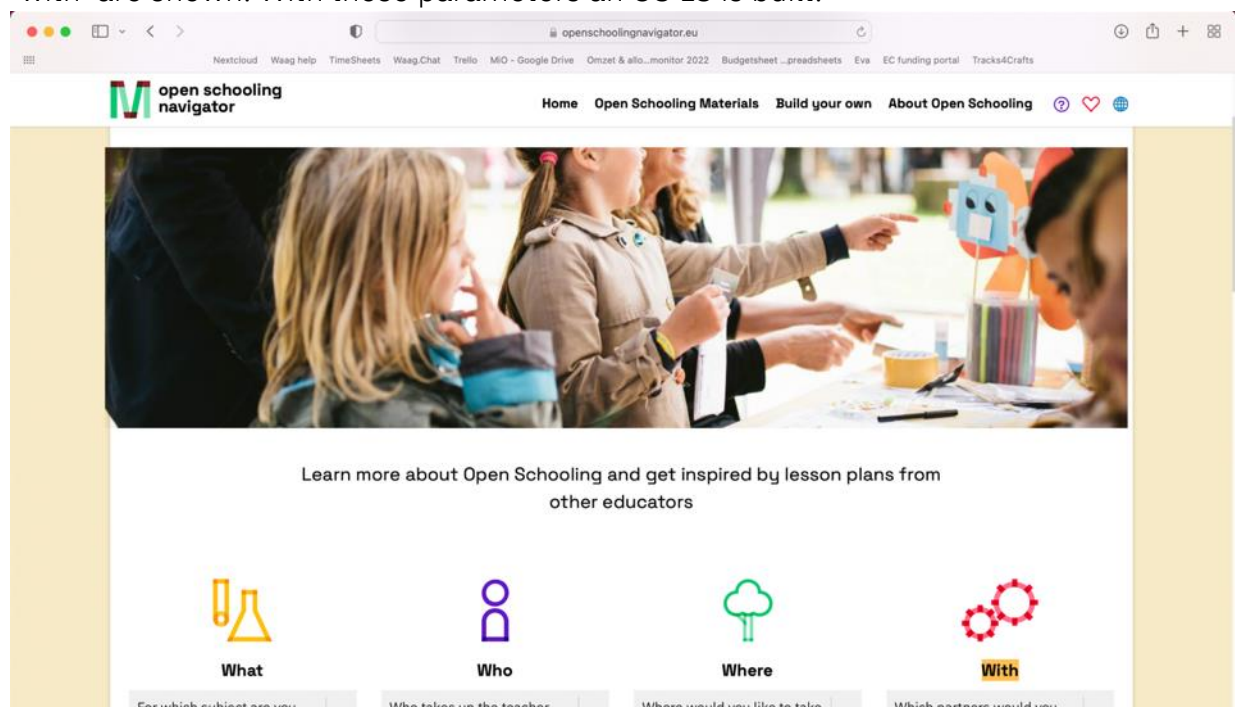


Figure 2.1 Landing page

## 2.3.2 Learning Scenarios, Learning Units, Build your own

When scrolling down on the landing page the user will find inspiring materials to start open schooling: LS, LUs and the option to build your own LS. Clicking on each of the respective buttons will take you directly to the page of those sections.

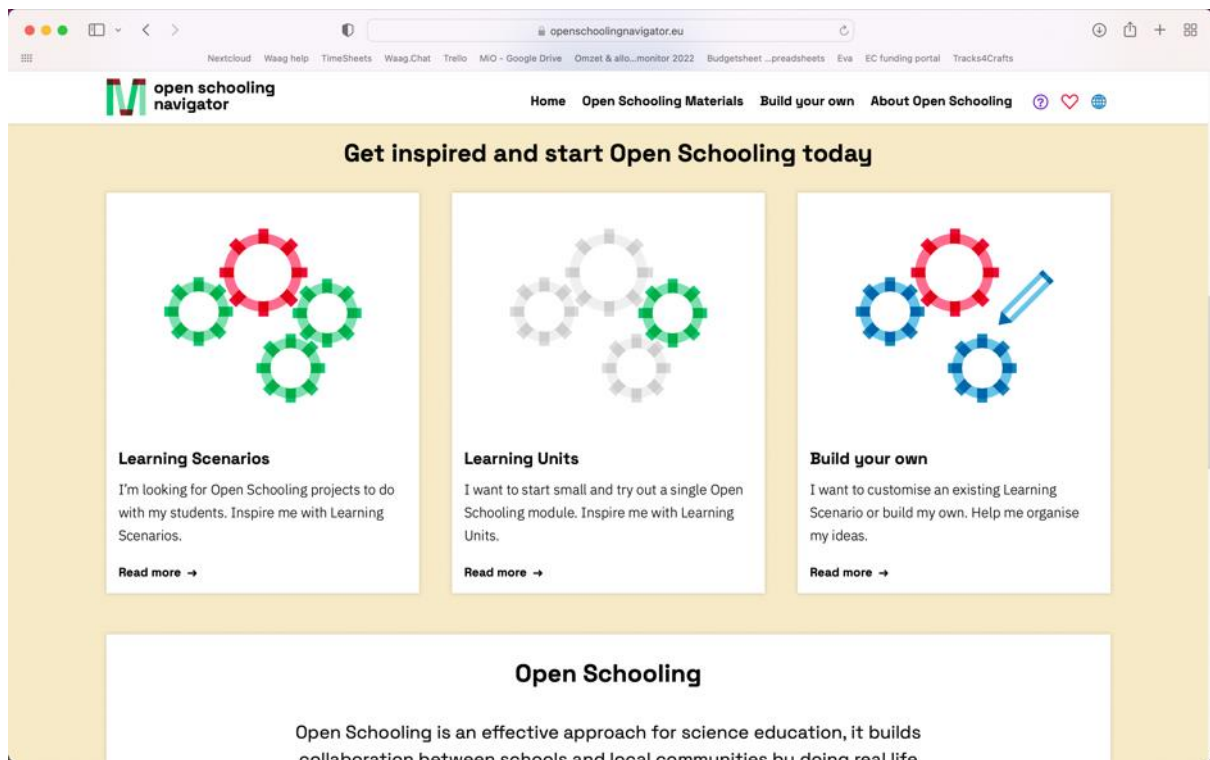


Figure 2.2 Learning scenarios, learning units, build your own



### 2.3.3 Access information about open schooling

When a user wishes to obtain more detailed information regarding OS, clicking on the ‘more about Open Schooling’ button will direct you to the section where it is explained why OS is important and more importantly, how to get started.

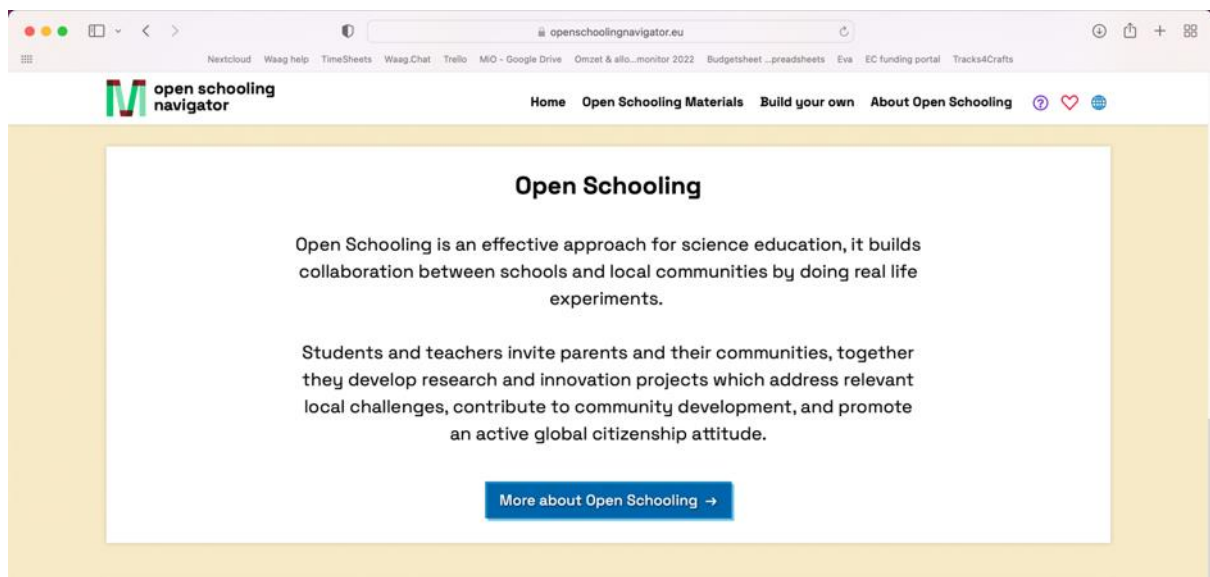


Figure 2.3 More about OS

### 2.3.4 More about the Navigator

Towards the end of the landing page, users will find the section that directs them to what the OSN is and how it can help and inspire teachers and educators navigate through the world of OS.

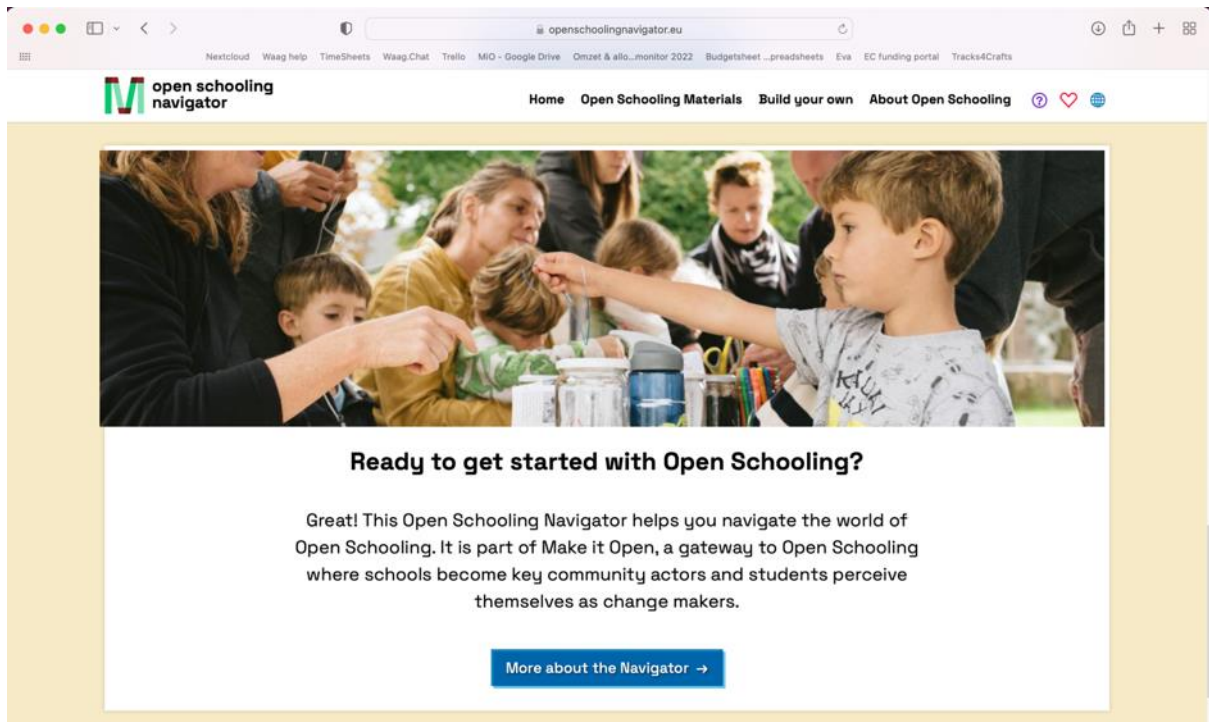


Figure 2.4 More about the Navigator

In the following paragraphs we will navigate and showcase other highlights and important functionalities of the OSN.

## Main menu

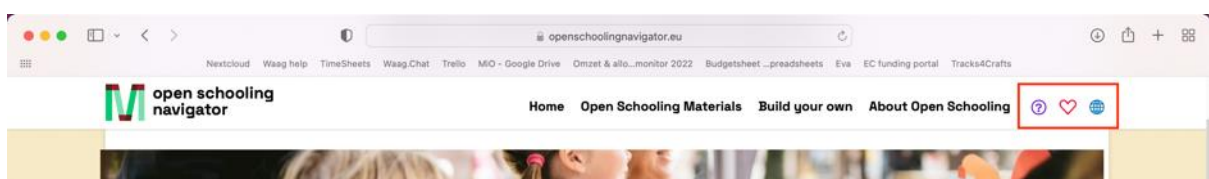


Figure 2.5 Main menu buttons

In the main menu:

- The globe symbol indicates language selection
- The heart symbol indicates the menu with their saved favourite LUs and LS'.

- The question mark symbol indicated the ‘help’ function that leads the user to the description of what the OSN is and does.

## The ‘simple search’

For an easy search the user can choose keywords in the drop-down menus. After making your selection in each of the parameters the OSN will show the LS that are relevant for the user.

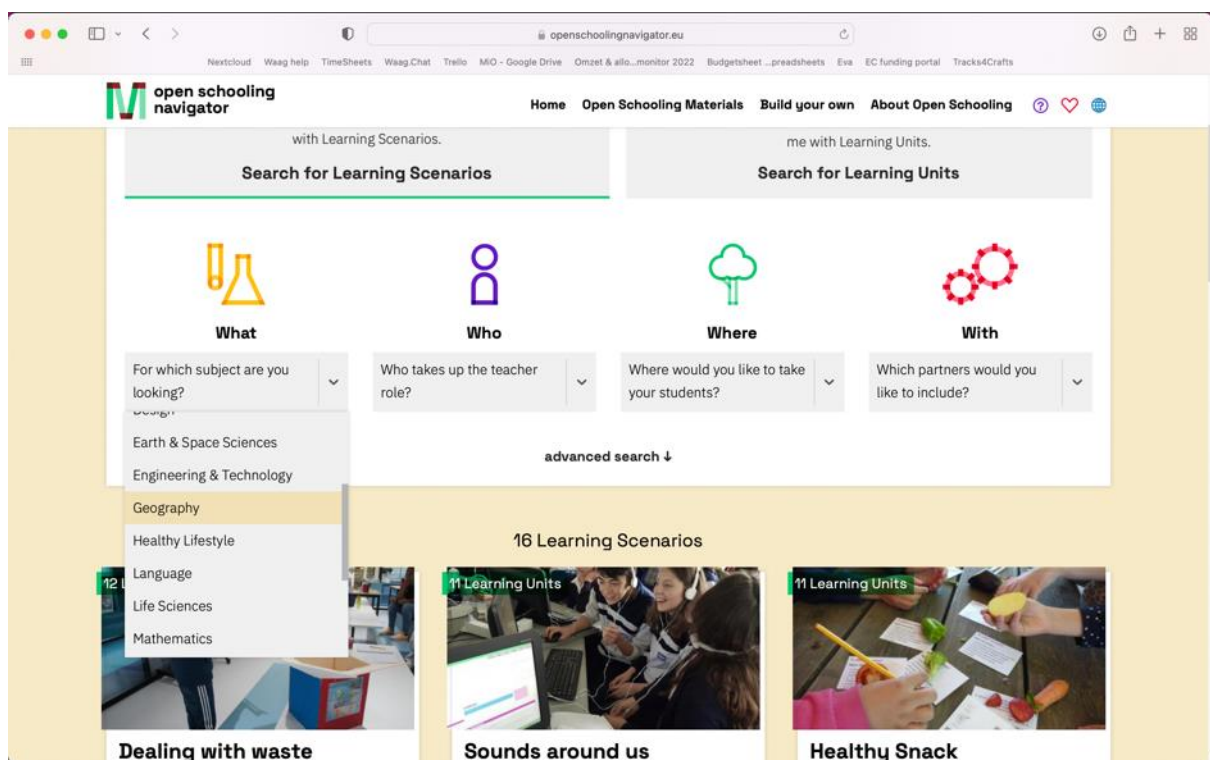


Figure 2.6 Simple search

## The 'advanced search'

With the advanced search the user can type a keyword, select an age range and even the preferred teaching time to search for a suitable LS. Based on the inserted information the OSN will show the relevant LS for the user.

The screenshot shows the Open Schooling Navigator (OSN) website interface. The browser address bar displays 'openschoolingnavigator.eu'. The website header includes the 'open schooling navigator' logo and navigation links: Home, Open Schooling Materials, Build your own, and About Open Schooling. Below the header, there are two main search options: 'Search for Learning Scenarios' (with the text 'I'm looking for Open Schooling projects to do with my students. Inspire me with Learning Scenarios.') and 'Search for Learning Units' (with the text 'I want to start small and try out a single Open Schooling activity. Inspire me with Learning Units.'). The 'Search for Learning Scenarios' section is highlighted with a green border. Below this, there are four filter categories: 'What' (represented by a yellow icon of a beaker and test tube), 'Who' (represented by a purple icon of a person), 'Where' (represented by a green icon of a tree), and 'With' (represented by a red icon of two interlocking gears). Each category has a dropdown menu with a question: 'For which subject are you looking?', 'Who takes up the teacher role?', 'Where would you like to take your students?', and 'Which partners would you like to include?'. Below these filters, there is a 'simple search ↑' button and a 'Keyword filter' input field. At the bottom, there are two range selectors: 'Age' (set to 6 - 18 yrs.) and 'Teaching time' (set to 0 - 26 hrs.). The results section at the bottom indicates '16 Learning Scenarios'.

Figure 2.7 Advanced search

## Learning scenarios

The OSN contains 16 learning scenarios that were developed in the pilot phase. Each LS is equipped with specific learning units. An LS is a framework that holds content, tools and context for an open schooling project. It helps you engage with the community around your school as an asset and as a partner. An LS consists of various LUs that describe a specific activity within that LS. Each LU is framed within one phase. There are five phases in total i.e.: Prepare, Brief, Research, Create and Share.

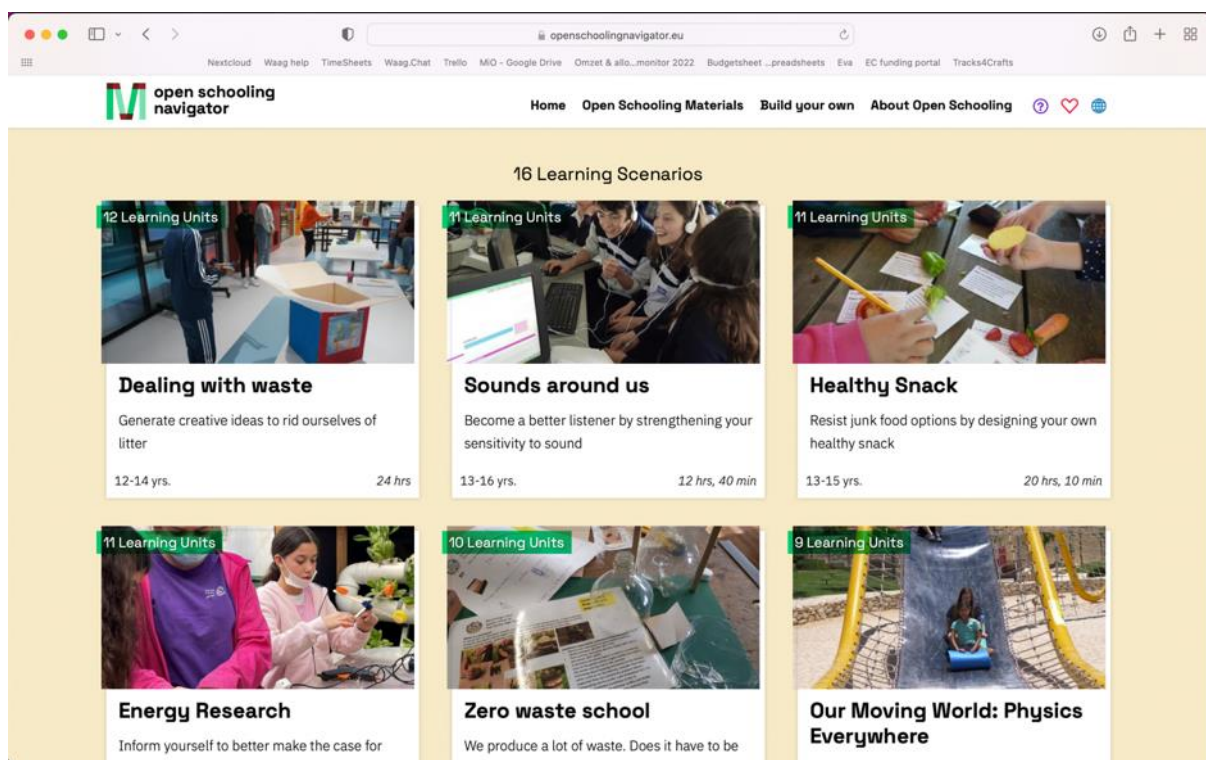


Figure 2.8 Learning Scenarios

## Learning units

The navigator holds 138 LUs. When the user selects a LU, it indicates which LS this LU belongs to. When the LU is clicked on, the numbers on top will show which step the chosen LU is within the LS, as well as the corresponding phase.

Each LU also provides an overview of what you would need if you want to carry out the activity it presents. By clicking on the button ‘getting started’ the user can access information on the resources and preparation that is needed to replicate the LU with your students.

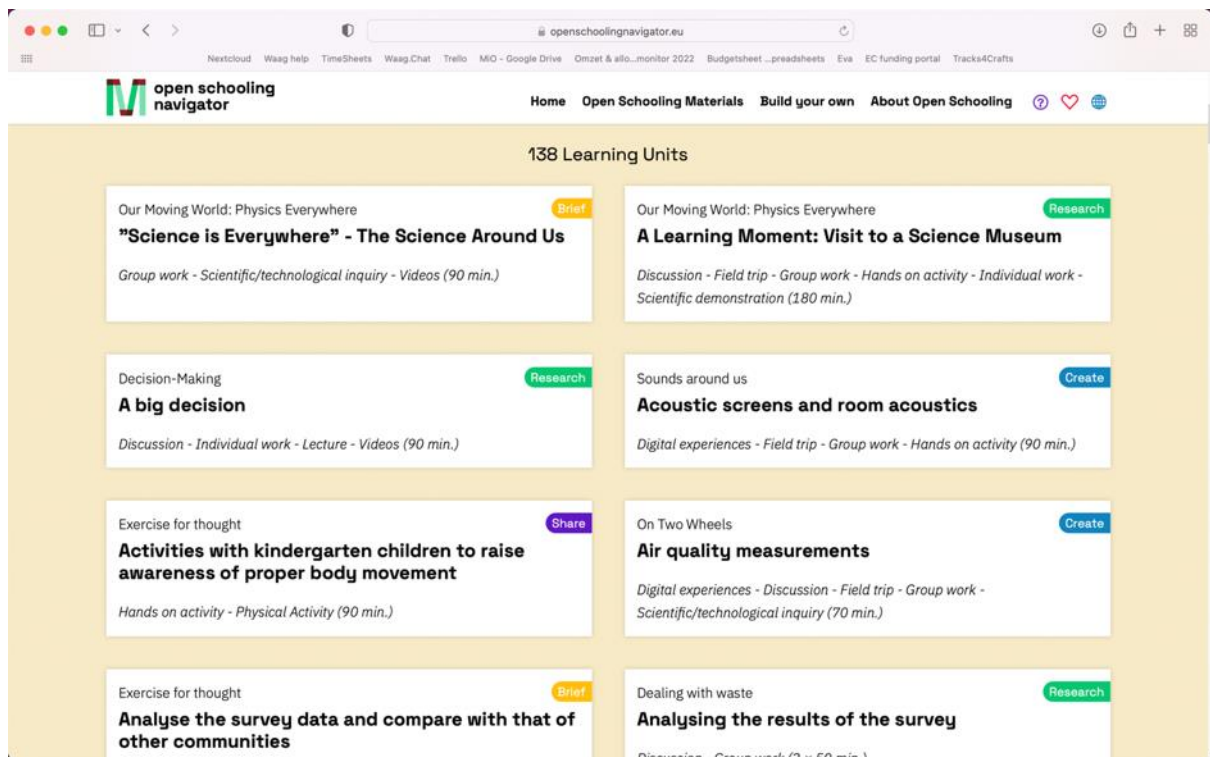


Figure 2.9 Learning Units



## Customizing and build your own

### *Customize existing*

With the drop-down menu the user can choose one of the 16 existing LUs to adapt it to their own needs. The user can amend the existing title, the description, the phases, the format, the parameters and even the amount of LUs to fit the user's teaching plan.

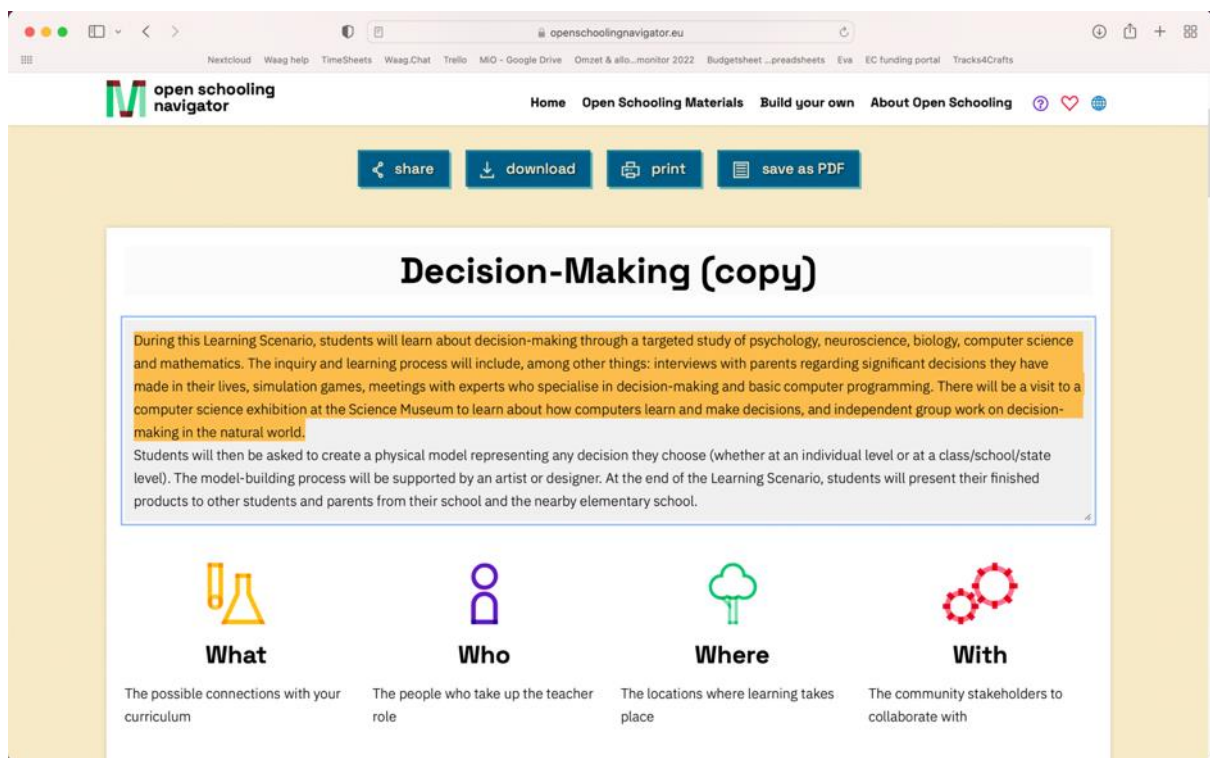


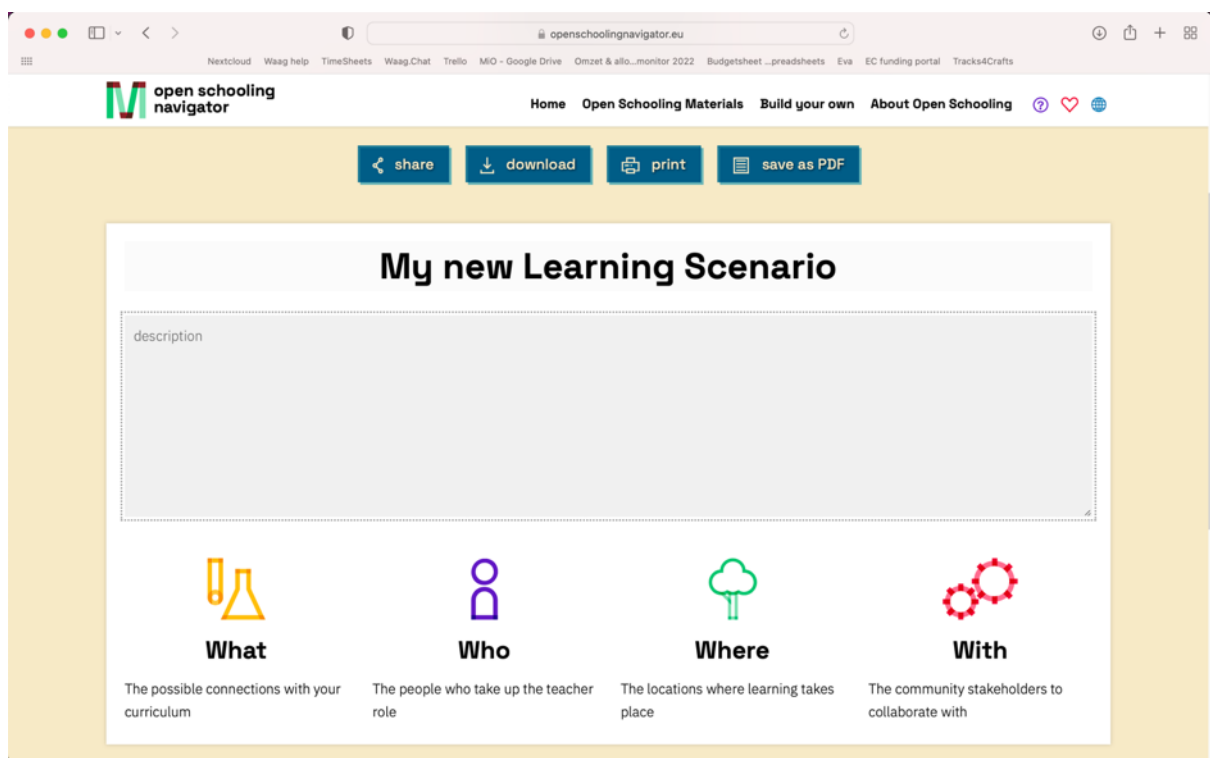
Figure 2.10 Customize existing LS

### *Build your own*

With build your own, the user starts with a blank canvas. It starts with filling in the title of the LS and providing a description of what the students need to learn. The user adds which subjects the LS is likely to cover, who will be teaching, the locations where the students will learn and who the stakeholders will be.

To add an LU, click on ‘add a new learning unit’. Type the name of the LU and add a description. For each LU the phase, format, subject and parameters need to be filled in.

In order to create an Open Schooling LS a minimum of 4 LUs is needed, one per each of the following phases: Brief, Research, Create, Share.



The screenshot shows a web browser window with the URL [openschoolingnavigator.eu](https://openschoolingnavigator.eu). The browser's address bar and tabs are visible at the top. The page header includes the 'open schooling navigator' logo and navigation links: Home, Open Schooling Materials, Build your own, and About Open Schooling. Below the header, there are four action buttons: share, download, print, and save as PDF. The main content area is titled 'My new Learning Scenario' and features a large text input field labeled 'description'. Below this field, there are four columns, each with an icon, a title, and a description:





What	Who	Where	With
			
The possible connections with your curriculum	The people who take up the teacher role	The locations where learning takes place	The community stakeholders to collaborate with

Figure 2.11 Build your own LS



## Sharing

The OSN provides three options to share an adapted or own built LS.

### 1. Share PDF

After amending an LS or building one, the user can click the ‘save as PDF’ button. The PDF file will be opened in a tab of the browser and can then be saved on the user’s computer and/or shared with other users.

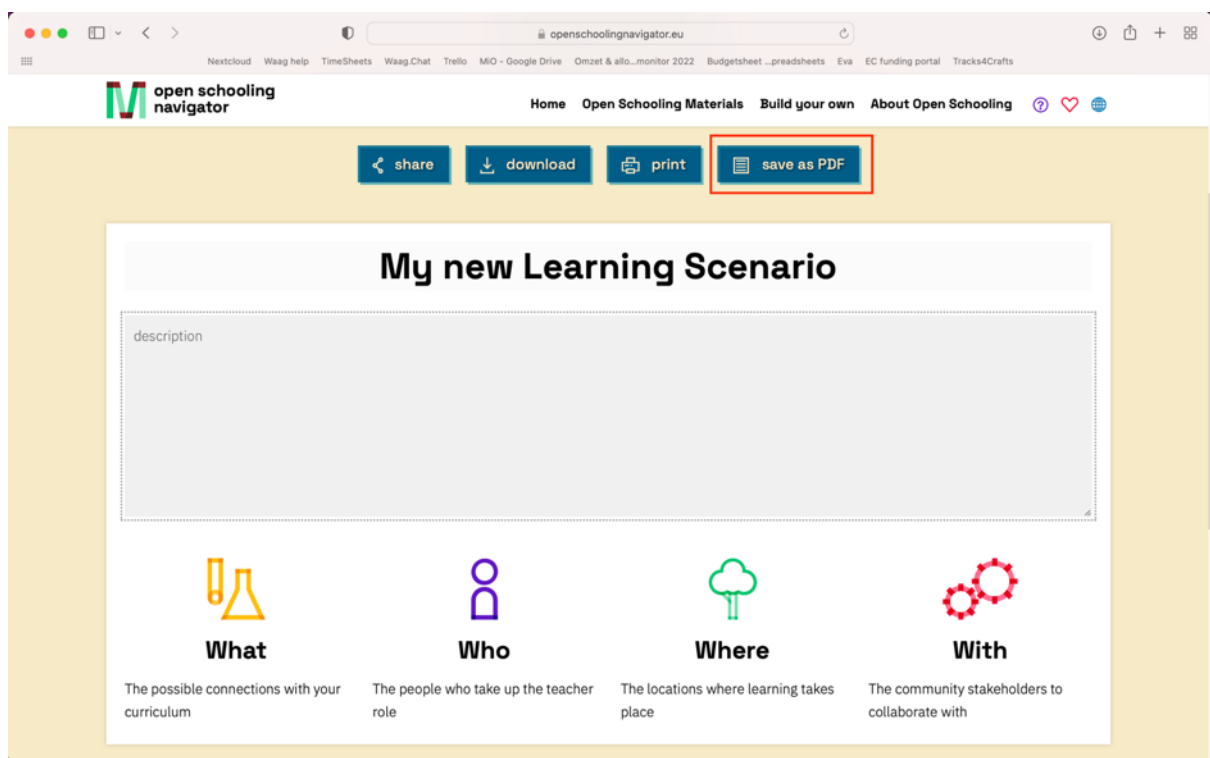


Figure 2.12 Save an LSs as PDF

## 2. Share the .json workfile

A user can end an LS building session and continue working on it at a later moment. Use the 'download' button and save the LS to your computer. This will generate a '.json' work file. We advise users to open this file through the OSN. To open the LS to continue working it, go back to the 'build your own' screen on the OSN, click the 'upload a LS scenario to file' select the .json file you previously saved on your computer and your LS will appear in the navigator in the 'my own LS' section. The user can continue working on the LS simply by clicking on the LS. After the final version has been saved, the .json file can be shared and opened through the OSN. The user can also share the file with your colleagues who can open the shared file through the OSN, the same way you did earlier. Alternatively, the finalized LS can directly be saved as a PDF by clicking the 'save as PDF' button.

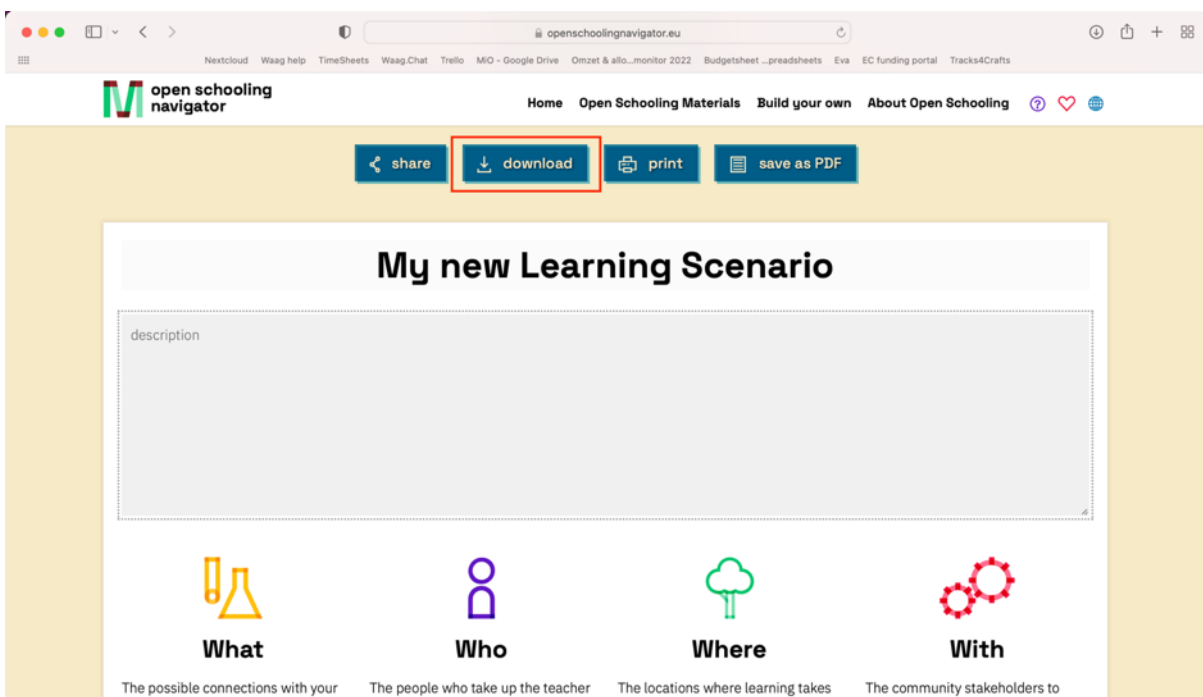


Figure 2.13 Download the .json workfile

### 3. Share a link

LS' can also be shared by clicking on the 'share' button. This link can be copied and pasted in for example an email to be shared.

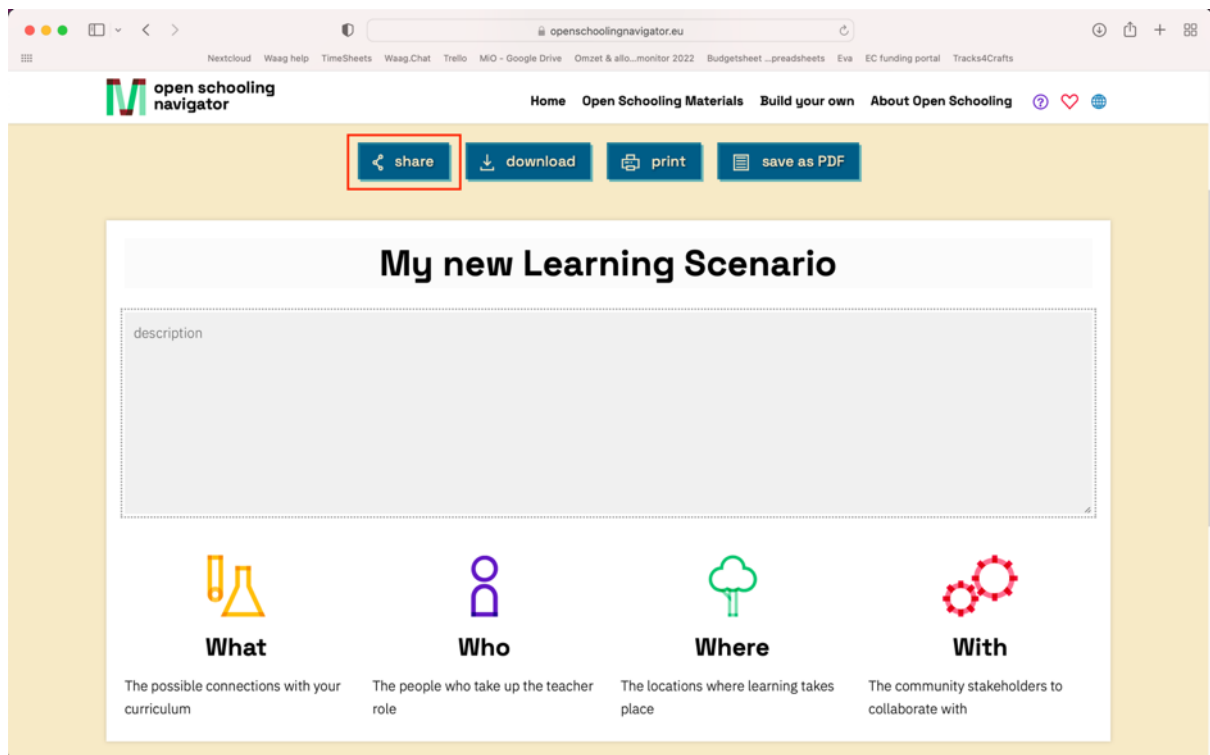


Figure 2.14 Share the link of an LS through a link

## Favourites

Mark a LS or LU as your favorite by clicking on the ‘add to favorites’ button. The favorite LS’ or LUs will then be saved in the favorites section. To see the favorite LS’

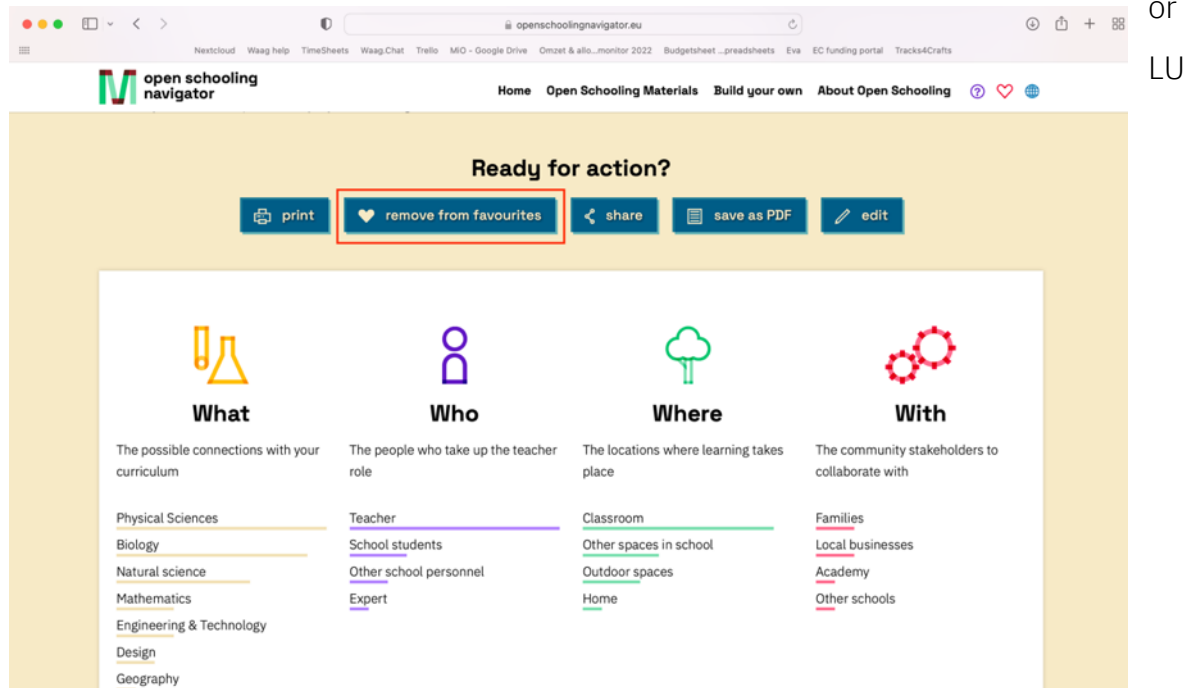


Figure 2.15 Add an LS as a favourite

## Language selection

The OSN and its entire content is available in ten different languages: English, Greek, Spanish, Hebrew, Hungarian, Dutch, Portuguese, Rumanian, Polish and Swedish. To select the language to see the OSN in, click the ‘globe’ or language button.

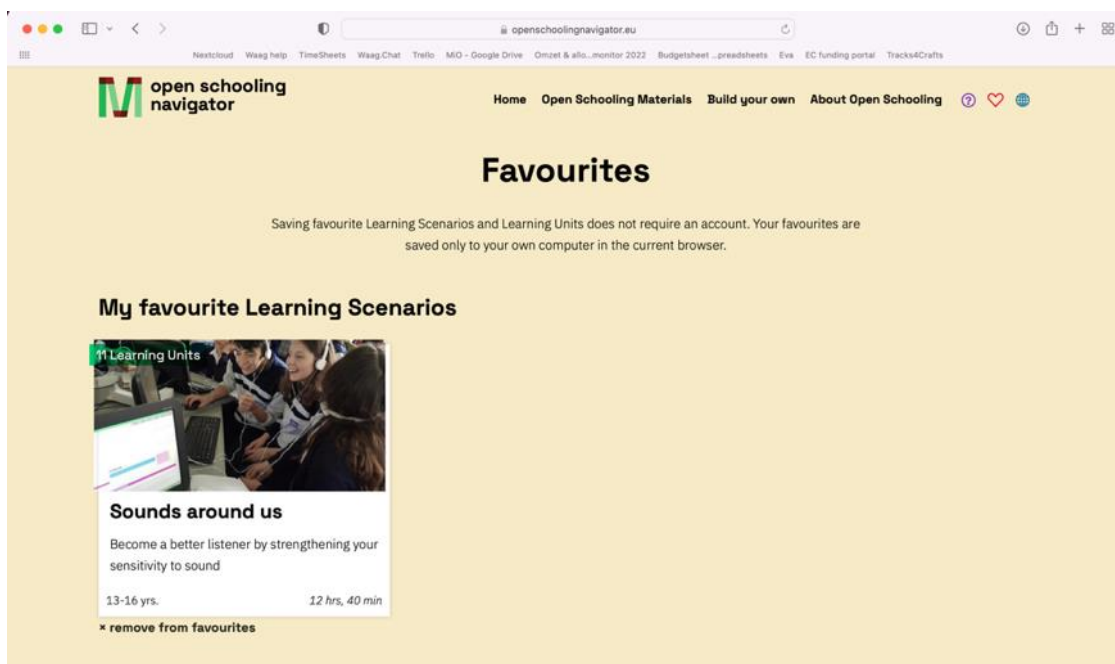


Figure 2.16 Overview of favourite LS' and LUs

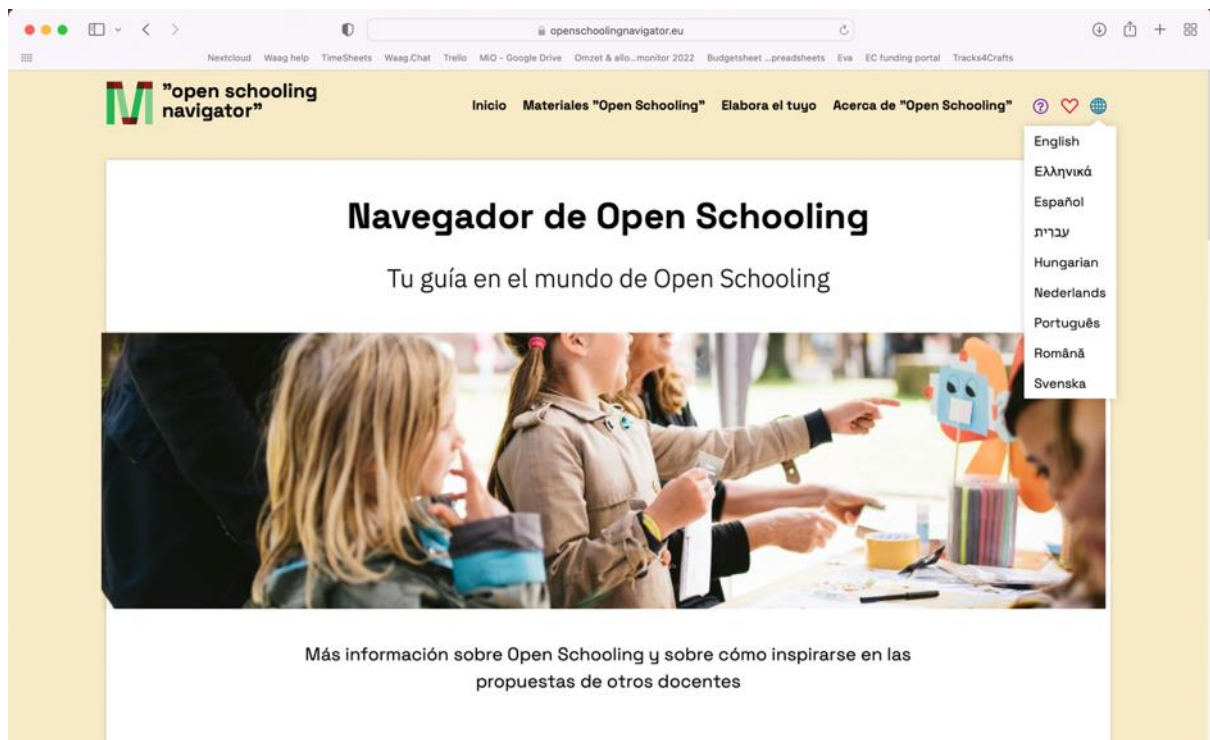


Figure 2.17 Language selection

## Information about Open Schooling

The 'About Open Schooling' button takes the user to a page that provides more detailed information about Open Schooling. In several testimonials students, teachers as well as institutions provide their point of view and importance of open schooling. In addition, information is available on ancillary Make it Open activities such as the open schooling hubs and the MOOC, which ran for 4 weeks in January and February 2023.

Through the button 'more about the navigator' the user will be guided to a page dedicated to explain what the OSN is and what it can do.

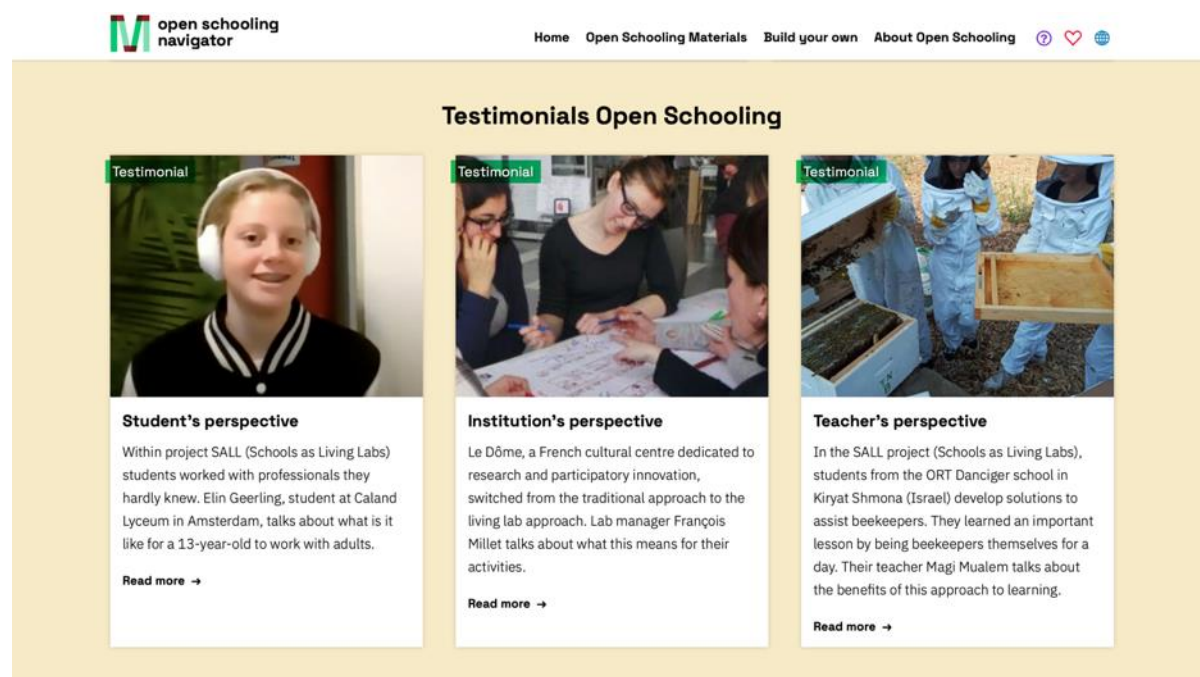


Figure 2.18 Testimonials on OS

## Toolkit

The content for downloadable materials, the result of task 1.3 was delivered as a comprehensive toolkit. It describes in detail what open schooling is and how to implement this in a school or teacher's curriculum. The toolkit is a PDF document in three parts, translated into the language the user selected. It can be downloaded in the OSN.

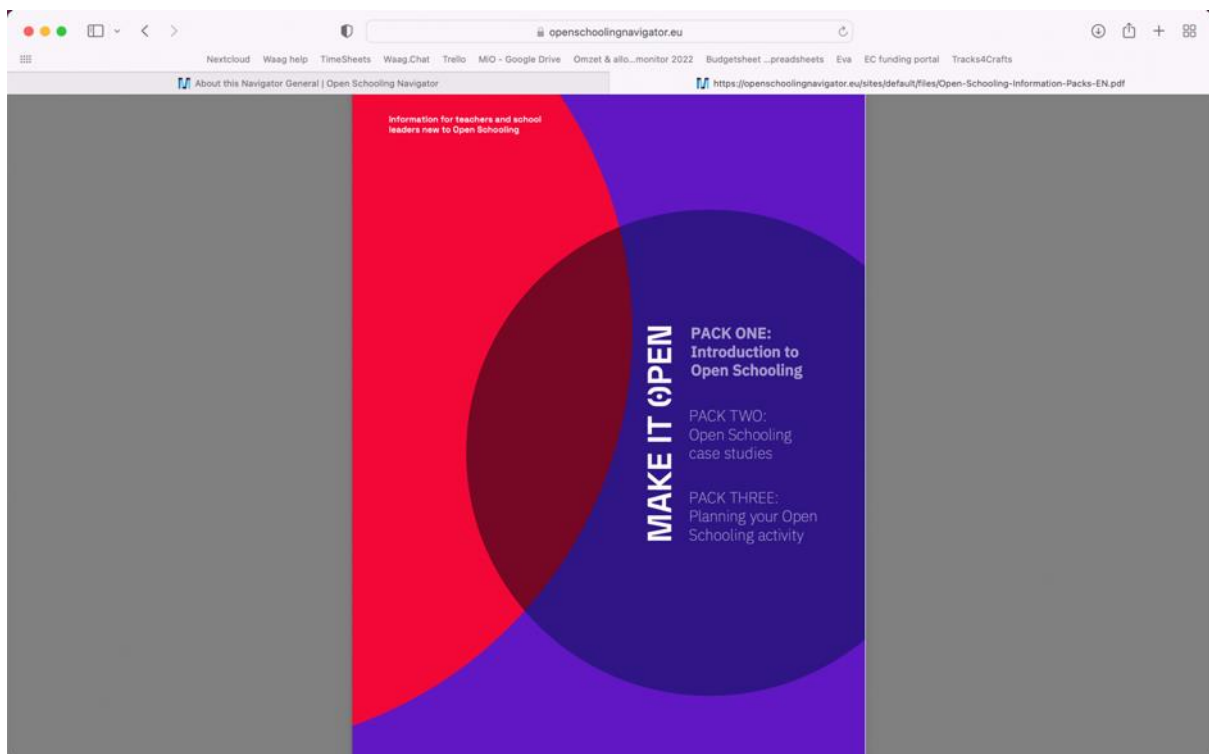


Figure 2.19 OS Toolkit downloadable in PDF





Figure 2.20 Hungarian version of the toolkit, downloadable in PDF

### **3 Creation and maintenance**

In this chapter we will provide more detailed insight on the creation process of the OSN as well as the maintenance required for the OSN to operate successfully.

#### **3.1 Creation process of the navigator**

Instead of designing the OSN in a linear process, concept creation, design, production, test and launch, it was decided in the proposal phase to develop the platform in an iterative process with the goal to continuously add value to the product as it develops. In addition, an iterative process is standard procedure in the field of research and innovation where interdependent activities are carried out simultaneously. This proved to be a challenge given interdependencies with WP2 - the pilots - in particular, as the main content of the navigator was created in the pilots and they functioned as a testbed at the same time. The full description of all LS' was not due before M18, with the milestone launch of the OSN due just 1 month after (M19). Working with the interdependencies we delivered 3 versions of the OSN, in as many sprints.

##### **Version 1** non-public prototype (delivered in M12)

Version 1 aimed at offering inspiration and information. In order to offer information, we needed to develop a content framework. This framework determined what the OSN should facilitate, who the target audience will be and how the OSN should be use. To obtain the necessary information an online survey was conducted with teachers and educators from the consortium network across Europe. Version 1 aimed at offering inspiration and information. It was not public; it was used as a prototype to test with potential users. It was delivered in M12, to align with the start of pilot phase 2, to engage pilot teachers as test users.

##### **Version 2** public English version (delivered in M19)

This version added functionalities that focused on helping users to design their own open schooling project.

Two user tests were done in this sprint. A test with pilot teachers, and with teachers who were new to the Make it Open project or new to OS entirely. The results of this test were then taken to be analyzed during a co-creation session with the consortium partners in the online consortium meeting in M17, then the final filtering and menu options were designed. In M18 the LS were final and all this content could go into the OSN. The English version OSN was publicly launched in M19. This was before WP4 commenced, so that Hub partners could easily access the results of WP1 and WP2 to build on that.

**Version 3** public version in 9 language (delivered in M27)

Version 3 of the OSN was translated to 9 languages by local partners and third parties, moreover functionalities focussing on facilitating sharing ideas and building a community were added.

The last user test was conducted with the consortium partners and third parties. The amendment in the functionalities and additional features were presented during the consortium meeting in Jerusalem in M25. After the implementation of the functionalities and additional features, these were tested once more by the same parties. Version 3 was the final version which we delivered in the scope of the Make it Open project. As mentioned previously the OSN was developed to enable the development of new functionality and features as easily as possible in the future.

### **3.1.1 Additional features**

We would like to highlight some of the amendments and additional functionalities of version 3, as they were decided on in the consortium meeting in M25, much after the

previous deliverable was submitted (D3.3 Set of digital downloadable templates) in M16.

Previously when building your own LS there were two buttons available. Both buttons would carry out the actions of sharing a link of the LS, print the LS, save the LS as PDF. After the last test we found out that this caused too much confusion. Hence, we added several buttons to clarify the actions.



*Figure 3.1 Two buttons available prior to version 3*

Several buttons that were added to the OSN



*Figure 3.2 Additional feature buttons*

- Download

With this button a workable .json file can be downloaded to your computer to work on an LS at a later stage.

- Upload a LS file

The previous mentioned downloaded .json file can be uploaded to the OSN in order to continue to working on an LS.

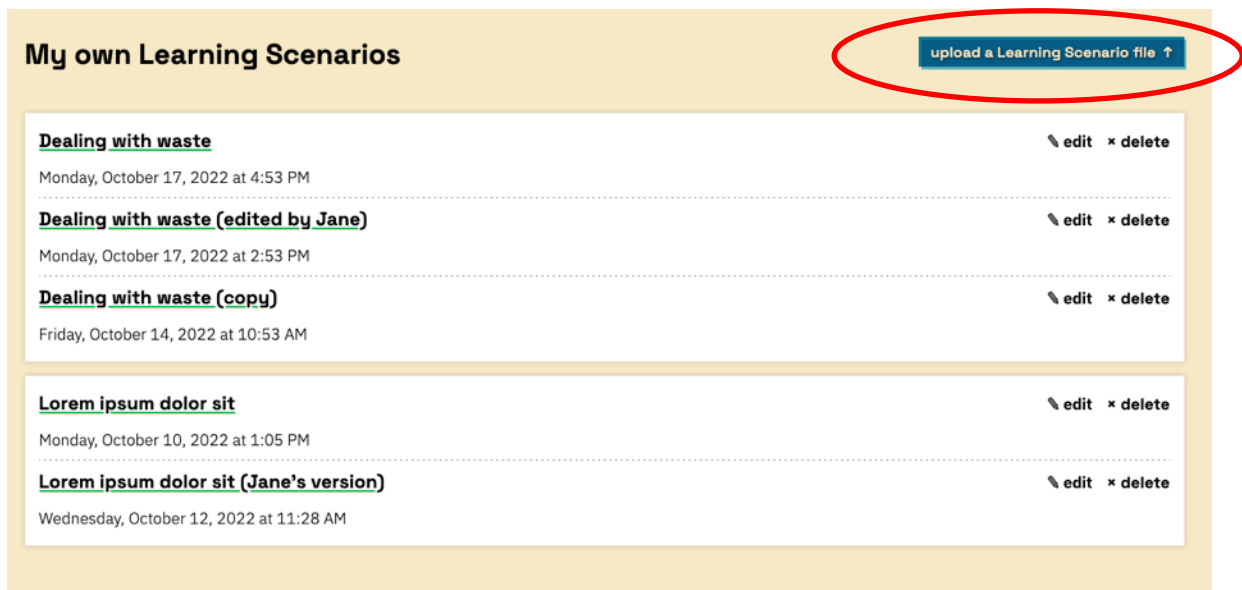


Figure 3.3 Upload a Learning Scenario file button

- Save as PDF

Previously an LS could be saved when clicking the 'print' button. By selecting saving the LS as PDF instead of printing, the user could save the LS as PDF. As this created some confusion, an addition button was added.

Lastly, an additional text is added in the pop-up box when the user chooses to share an LS through an URL.

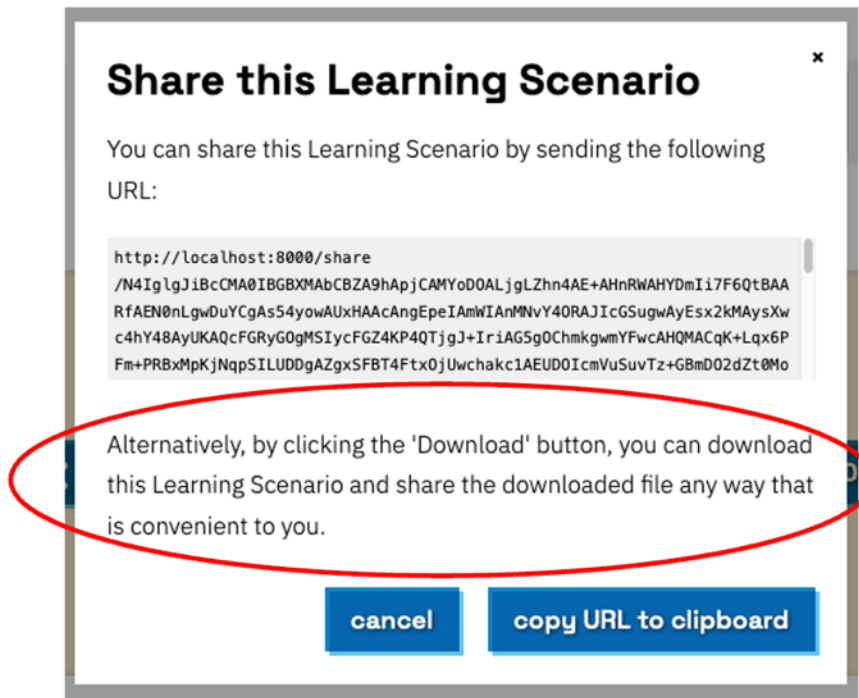


Figure 3.4 Additional text pop up window for share button

### 3.2 Maintenance performed since OSN was delivered

Since the delivery of the OSN in its current version in M27, Waag has done the following maintenance work:

- Bug fixes
- Monitoring the functionality of the feature additions
- Software updates

## 4 Formulating sustainability strategy

The consortium has explored different options for the sustainability of the OSN after the Make it Open project comes to an end.

### a. Workshop in Jerusalem

We conducted a workshop during the Consortium meeting in Jerusalem, exploring three future scenarios of what can potentially be done with the OSN. Each of the consortium partners would indicate their preference and their rationale behind it.

Scenario 1: transform the navigator into a localized version which can be used and managed by your organisation.

Scenario 2: Upscale and develop the Navigator into a platform that can be used globally for the coming years (new project)

Scenario 3: Put the Navigator on hold at the end of the project. It can still exist but without management or administration.

The majority of the partners chose scenario 2.

Organisation	Preferred scenario	Benefits	Possible issues
BMSJ	Scenario 2	Bring all open schooling projects together so that the navigator becomes the true Open schooling navigator and not just the MiO OS Navigator.  A useful tool for teachers that promotes open schooling and creating an open schooling teacher's community	Budget - human resources (hours)
Forth	Scenario 3	Keep the LSs available for teachers and 3rd parties	Hosting costs; up keep

			Choosing Option 3 above Option 2 because pursuing Option 2 feels a bit unrealistic - we would need funding to be a close fit to the MiO objectives and to commit to developing an existing asset.
EUN	Scenario 2	Keep the Navigator alive and available for the community of teachers	Lack of resources
TLTL	Scenario 2	Keep the Navigator alive and available for the community of teachers	Needs a new budget/ resources
Ecsite	Scenario 2	It's a nice tool, outstanding in the field and that would be a shame to put it on hold after only one year of experimentation. A useful tool for teachers, where the resources are well displayed.	Time/Budget for maintenance  Scenario 1 seems unrealistic. Bringing all the Open Schooling projects together will require time and money to adapt the existing visual identity and structure, we would need budget even for that.
SciCo	Scenario 2	Keep the Navigator alive and available for the community of teachers and their students	Costs and Maintenance
TTE	Scenario 2	As new resources and information is made available, the Navigator continues to update to meet various challenges and inspire teachers on a global scale. This	Costs and maintenance  Should scenario 2 be deemed unrealistic, we



		would be a stable and long-term tool for teachers to utilize as opposed to being a "flash in the pan" that, despite all the time, research and resources invested in it, fades away after the project.	would hope for option 3.

*Table 1 Survey results of partners' preference for future use of the OSN*

b. Bloomfield's interest in adapting the local version of the OSN

Bloomfield had expressed interest in adopting a local version of the OSN. In order to do so the BSMJ will examine the option to host the OSN in Hebrew, Arabic and English and adapt it as they see fit. Together with their IT department we explored the technical requirements and the process should they wish to adopt a local version. This process is described in more detail in chapter 6.

c. Scientix

Another option is that Scientix would host the content of the OSN. This means that they will solely host the LS' and the LUs. The LS' and LUs will be hosted as static PDF versions and made available for users. In this case the website itself will not be hosted by Scientix. The result is that the layout of the page where the LS' and LUs are hosted will need to be adapted.

d. Keep the OSN online with minimal maintenance

Due to the technical set up of the OSN, it is possible to keep the platform online for an unspecified amount of time. However, this option does require additional funding for the server where the OSN is hosted on. Over time the software needs updates which requires additional hours for the administrator. Last but not least, bug that

could occur due to unforeseen reasons will have to be fixed, which also requires additional hours for the administrator.

## **5 User data**

The OSN fully respects the EU General Data Protection Regulation and protects the privacy of the user to a maximum extent. The OSN does not store any cookies and refrains from misleading users into accepting cookies at all times.

Social media buttons that store cookies are not embedded in the website.

Media from external websites that store cookies will be linked to or embedded behind a 'content blocker', which only loads the specific piece of external content after consent.

### **5.1 Statistics**

To improve the quality of the navigator and protect users' privacy, visitor data is anonymized. In collecting statistics, the 'Matomo analytics' tool is used on a self-hosted server. Matomo can be configured to function without cookies:

<https://matomo.org/faq/new-to-piwik/how-do-i-use-matomo-analytics-without-consent-or-cookie-banner/>.

The analytics server will be configured to use anonymised IP addresses thereby impeding linking statistics to individual users.

### 5.1.1 Visitors

Below an overview of visits, a visit to a website where at least one page is loaded, to the OSN from the launch date, April 2022 until March 2023 per country.

Country	Visits	Actions
United States	3270	25372
Spain	1232	9516
United Kingdom	1082	7197
Portugal	711	5585
Sweden	638	3876
Croatia	624	5319
Greece	595	4247
Israel	569	4019
The Netherlands	521	4380
Hungary	517	4680

Table 2 Highest visits per country

Visits, a visit to the OSN where at least one page is loaded: 14,887

Pageviews, the total number of times the OSN page was viewed: 82,821

Unique pageviews, the total number of views by separate users: 50,552

### 5.1.2 Top 10 visited LS












PAGE URL	PAGEVIEWS	UNIQUE PAGEVIEWS
 learning-scenario	16,083	9,718
 /dealing-with-waste	3,446	2,004
 /exercise-for-thought	4,135	1,957
 /zero-waste-school	2,193	1,393
 /healthy-snack	906	623
 /our-moving-world-physics-everywhere	790	594
 /decision-making	746	544
 /forces-of-nature	726	510
 /how-clean-is-our-air	526	357
 /biodiversity-around-us	569	355
 /the-art-in-steam-transitions-from-2d-to-3d	459	315

Figure 5.1 Top 10 visited LS

## 5.2 Statistics reporting process

The above shown statistics will be delivered to WP 6 lead EUN each month in order to compile a report and determine the success rate of the communication strategy for the OSN to potential users.

## 6 Maintenance and sustainability options

The OSN has been developed in a manner that requires minimum maintenance. As users do not have to register and the OSN operates in a ‘closed’ system, a minimum amount of data is gathered. The closed system allows for a safe environment where moderation is not needed.

### a. Learning Scenarios and Learning Units

In the current state, the LS’ and LUs do not require maintenance and will remain as is. The ability for users to amend and build LS as well as print these LS’ and LUs remains available, as this service is managed on the user side.

Updating and adding new content such as LS’ and LUs requires editorial and administrative effort.

### b. Website design and UI

In the case of ‘adopting’ the OSN for local usage after completion of the Make it Open project, a localized version of the OSN will need to be constructed in a specific manner to fit the local users and local languages.

To create a localized or specialized version of the OSN, several steps need to be taken. The current version of the OSN and its source code are hosted on servers facilitated by Waag. To adopt a (localized) version of the OSN, interested partner (and their ICT partner) can fork the source code from Waag’s repository and host their own version on a server hosted by an ICT partner. Familiarity with the Drupal framework is recommended.

#### *Language - backend*

Currently the language that is used in the CMS of the OSN is English. For the existing content, the language cannot be changed; however, this can be changed when new

content is added. The system offers the option to choose a different 'original' language. At this stage the user is given the opportunity to change this to the desired language. The languages not required by the local party can be deleted in the CMS.

### *Language - frontend*

In the localized version of the OSN, all other available languages can be switched off. If this is completed, the user can only read the OSN in the language the local party has selected.

In this case, the original language of the OSN will be the local language and English. By running the OSN on their own server, the domain name of the OSN can be changed.

For example: At the moment the current URL is of the navigator is  
[openschoolingnavigator.eu/](https://openschoolingnavigator.eu/) <<http://openschoolingnavigator.eu/>> -> English  
[openschoolingnavigator.eu/he/](https://openschoolingnavigator.eu/he/) <<http://openschoolingnavigator.eu/he/>> -> Hebrew

As an example, the URL for the localized navigator could be:

[openschoolingnavigator.il/](https://openschoolingnavigator.il/) <<http://openschoolingnavigator.il/>> -> Hebrew  
[openschoolingnavigator.il/en/](https://openschoolingnavigator.il/en/) <<http://openschoolingnavigator.il/en/>> -> English

### c. Technology

The approach for deploying the Open Schooling Navigator web application as a static website using Gatsby was chosen to leave the option open for maintenance with very little support. The OSN build can be served on any web server without dependencies on a CMS and a database. As such, keeping it online in its current form requires minimal management of the source code and hence minimal work for a system administrator.

However, whenever content needs to be updated, having a running CMS is desirable. Running a CMS on a publicly accessible manner (i.e., on the internet) requires resources, system administration and security updates. In the current phase of the project, the CMS is publicly accessible on Gitlab. Depending on future needs it can also be an option to run the CMS on a local secured network of the party responsible for maintaining the OSN content, thereby taking away the necessity for security updates.

As for Gatsby, there is no need to update to a newer version. As long as the output of the build (HTML, CSS, Javascript) suffices, everything should operate correctly.

The technical built of the OSN allows the flexibility of keeping the status quo while simultaneously allowing for each technical element to be reused and further built on for future purposes.

## **7 Looking ahead**

As previously mentioned, during the exploration of future scenarios for the OSN, scenario 2: Upscale and develop the Navigator into a platform that can be used globally for the coming years (new project), was the preferred scenario by the consortium partners. However, due to the fact that it is unknown if funding will be granted for such new project, the more likely and preferred option would be scenario 1 whereby the OSN will continue to operate on a local level whereby maintenance will be done the party who wish to use it.

Until the end of the project, Waag will continue to maintain the website and fix bugs, should they occur, and update software where applicable and keep the website running to our best efforts.

In addition, we will provide support to any partner who wishes to adopt the OSN in the meantime, e.g. in data transfer to their server and familiarise them with the code.