



Mutual Learning for
Energy Efficient
Retrofitting

O3-A3: Guidelines for VET Organizations

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04		
05		

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1. INTRODUCTION

The LEARN-EER guidelines are designed to develop targeted guides, manuals, recommendations and supporting material to support the wider take-up and roll-out of the project. The following guidelines have been developed within the framework of the project:

- Guidelines for Peer-Learning are directly addressed to target agents (trainers and learners) have been developed based on all the results of the project. Within the guide we distinguish between 2 roles: professionals and future professionals have a learner role within the platform and secondly the . the trainers' role. . This way, 2 parts will be developed: Guidelines for sharing material and Guidelines for looking for material.
- Guidelines for Expert Moderation:: specially focused on those target agents considered as “experts” within the platform. They are allowed to intervene providing expert valuable training content to the platform. The guidelines define how this key users or intermediary bodies, such as sectorial, professional, associations, public bodies, training bodies, etc. can take on the role of moderators and ensure quality
- interaction. The guides also provides advice not only on the benefits of becoming an expert, but also on how do individual experts can become expert moderators.
- Guidelines for VET Organizations: aimed at all type of entities capable of providing training. The guide contains information on how VET organisations can use the peer-to-peer approach and specifically the EER platform and contents to enhance their curriculum and quality of their training and/or education.
- Policy Brief: oriented to the public administration and policy makers in the field of energy efficient retrofitting training and education. It explains explain the underlying issues related to EER and the way the educational and training policies need to be adapted to respond to the demands of the labour market. Attention will also be paid to inform them about the benefits of mutual learning approaches as adopted in LEARN-EER.

The present documents is thus part of a wider set of guidelines within LEARN-EER.

2. FOR WHOM?

Vocational education and training (VET) is aimed to prepare people to work in different jobs by addressing the training of specific skills. VET entities are specialized in providing this type of learning. According to the European Commission Erasmus+ glossary of terms¹, VET is:

Education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market.

The learning can be considered formal or informal, can take place at the post-secondary, further education, and higher education level; and can interact with the apprenticeship system. At post-secondary level, vocational education is often provided by highly specialized trade, Technical schools, community colleges, colleges of further education UK, universities, Institutes of technology / Polytechnic Institutes.

Vocational Education and Training organizations are the main target of this document, including any type of center offering formal or informal education and training on building, construction and energy related topics. This guidelines will show VET organizations how to implement the LearnEER platform as a free learning tool of their training modules.

The project results and the guidelines presented in this report could be used to effectively by VET entities to design new curricula models that include the use of ICT tools or platforms for mutual learning and enhance at the same time students' IT skills. The guidelines are presented in a friendly style to engage different types of educational organizations despite the level of IT involvement of their activity.

¹ Annex III - Glossary of terms, Erasmus+ Programme Guide. European Commission 2018.
https://ec.europa.eu/programmes/erasmus-plus/programme-guide/annexes/annex-iii_en

3. INTRODUCTION TO LEARN-EER

3.1. What is Learn-EER?

LearnEER is a European project which enables a flexible and open platform to share knowledge between the Energy Efficient Building Retrofitting (EER) professionals. Thanks to its mutual learning approach, users will look for training content to improve their skills but they may also contribute with interesting material.

LearnEER has developed an innovative mutual learning platform to increase professional skills and capabilities towards the Energy Efficient Retrofitting (EER) of buildings. EER competences and skills required in new employment opportunities are relatively new and not included in curricula from the last 30 years.

To train EER workforce, the Mutual Learning approach is identified as a good solution to develop a more flexible and open environment for accessing to this training needs.

3.2. What is offered?

The LearnEER platform is applied as a training practice in which learners interact with other learners to share and validate knowledge, thus facilitating new opportunities on the labour market.

The User's Framework is defined by different functionalities that facilitate the operation of the platform. The idea is to provide a clear structure for users to easily access the areas where they can find the information they seek. Some of the functionalities included in the platform are:

- Calendar for sharing events on EER.
- Login via their social media accounts.
- User identification for validation of materials.
- Filtering and searching tools.
- Materials may be shared in different
- languages.

On the LearnEER platform, materials will be provided by the users: the professionals themselves. The Database will set the specifications of the materials and provide an initial catalogue with best examples shared by the project partners in the following EER categories:

EER PASSIVE SOLUTIONS	EER ACTIVE SYSTEMS	EER SUPPORT
Insulation materials	Thermal systems	Funding opportunities
Envelope Walls	Renewable systems	Management & energy audits
Roofs & floors	Lighting systems	Policies & regulations
Windows/doors	Control systems	
Natural lighting/Shading	Ventilation systems	

3.3. On what is this approach based?

In order to support the development of the LearnEER Platform, a research exercise was carried out studying the EER sector barriers and training needs for professionals and future professionals to gain and share knowledge and have competence in EER. Also an exercise identifying existing best practices of online mutual learning platforms was carried in order to extract the main successful features of these sites and build upon them when designing the LearnEER Platform.

The main knowledge transfer needs categories identified are: (A) Skills & Awareness and (B) Knowledge Management. The conclusions extracted from the study show that improvement in the (A) Skills & Awareness category is ultimately based on the improvement of currently available and new educational qualifications and opportunities at all levels of the EER value chain, end users awareness included, through e-learning tools. Within the Knowledge Management Needs category, research showed that when implementing any of the knowledge management solutions, it is necessary to define strict working areas and modes of operation in order to safeguard the knowledge management rights of each of the individual agents themselves.

4. GUIDELINES FOR VET ORGANIZATIONS

4.1. Getting acquainted with the platform

Homepage

The following image shows the appearance to the home page of the LearnEER project.

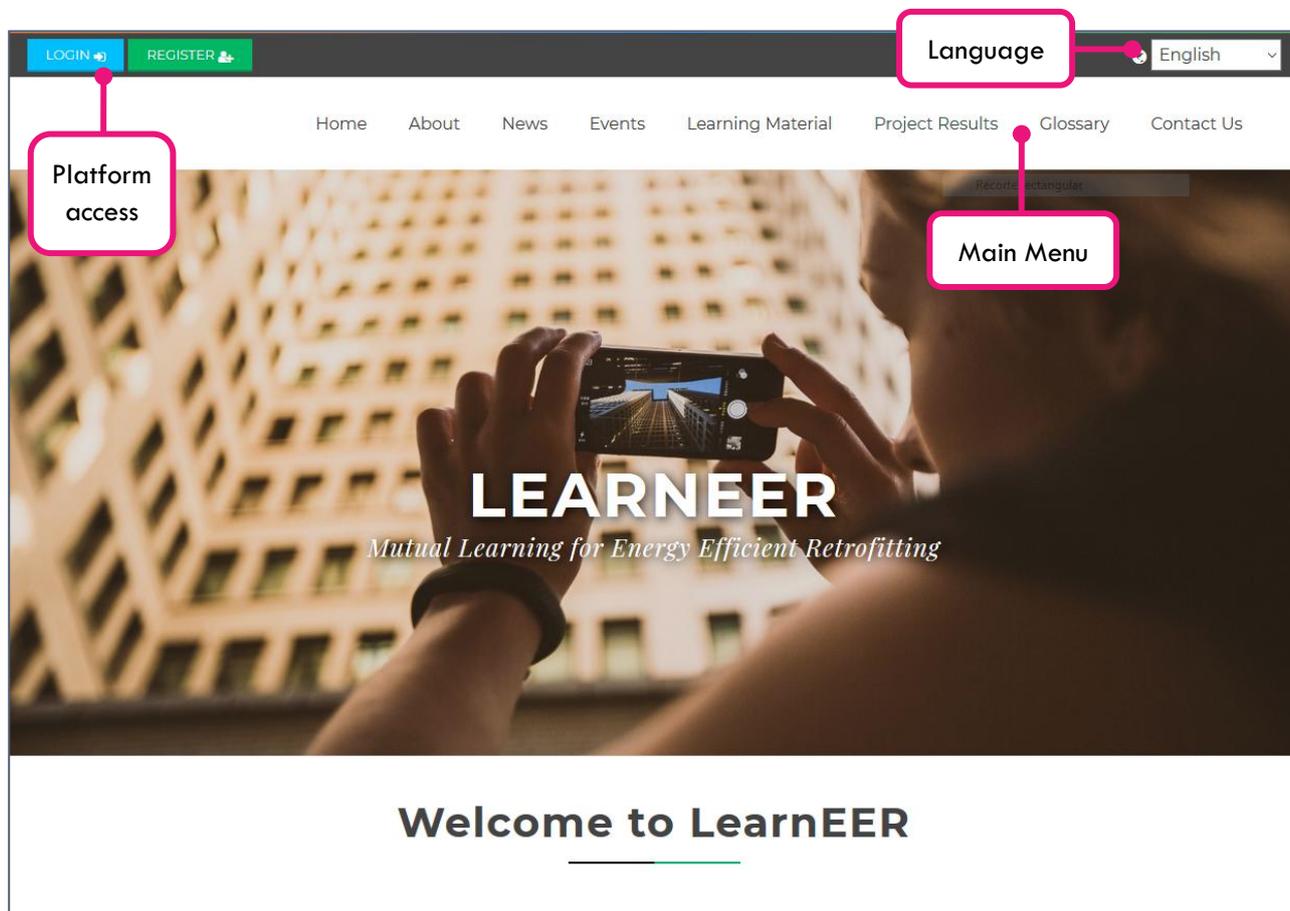


Figure 1: LearnEER platform homepage.

The three main areas of the homepage are:

- **Main menu:** Contains the different information categories where general information related to the project can be found.
 - Home: General presentation including the project description and the newsletter sign up.
 - About: Information about the project partners.
 - News: Dissemination material published like newsletters, press releases, leaflets, etc.
 - Events: This section is designed to gather interesting events related to Energy Efficiency Building Retrofitting across Europe. Events can only be introduced by registered users.
 - Project results: provides information regarding objectives, expected outputs and public deliverables.
 - Glossary: Is a section designed to gather definitions of terms and words commonly used in Energy Efficient Retrofitting projects. Only English version is available.
 - Contact us: provides the project contact point.

- **Language selection:** A list of different languages is available for the platform: English, Greek, Spanish, Hungarian, Dutch and Maltese.
- **Platform access:** This is the access point for the platform. Registered users may access via *Login* and non-registered users must *Register* first.

Register/ Login

All users (registered and non-registered) can access and check the shared content in the platform, however only registered users are able to rate, comment and share content. Registering in the LearnEER platform offers very simple alternatives:

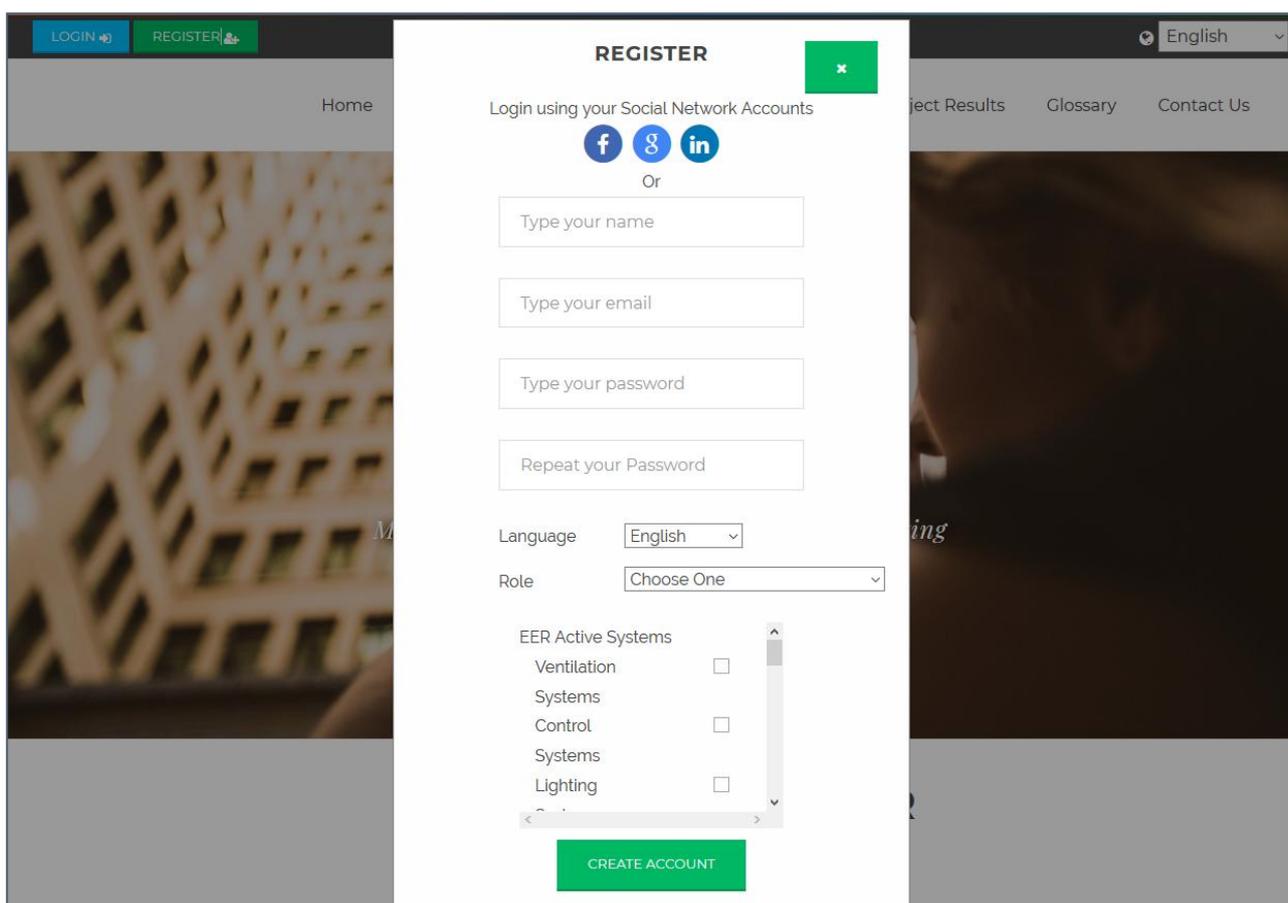


Figure 2: Register/ Login window

- **Via social network accounts:** where you will only need to select one of the social media profile you have and your account will be created with that information.
- **Via email:** In this case you will need to introduce your email, set a password and activate your account.

Once logged in you may adapt your preferences in your profile area.

4.2. How to share a VET learning content

Once registered, VET organizations can use the platform to share their learning content through the section *Learning Material/Contribute to the Learning Material*.

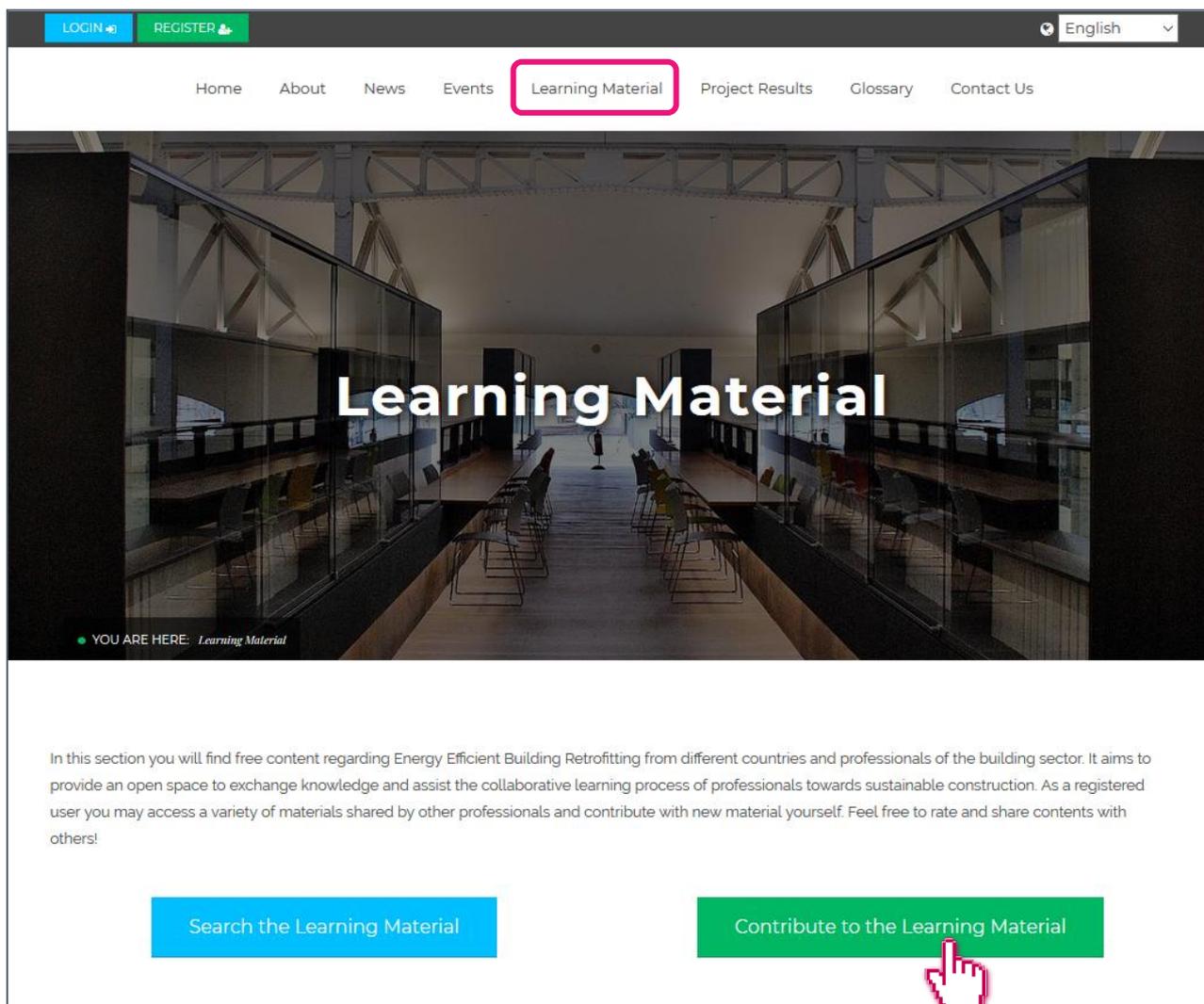


Figure 3: Learning Material section

Sharing a material is easy. For a VET course sample with different chapters there are 2 options: uploading the whole course in a single entry of “Learning Material” or uploading each chapter in different entries. We recommend uploading the whole course in one single entry to keep all the pieces together. This way would also facilitate the training staff to monitor the course comments and ratings within the platform.

The following steps will allow you to create your own course or content to share.

STEP 1: Organize your material

First of all you should have a learning content properly developed, so be sure it is clearly organized. For instance, if it is classified in chapters make sure to title them *Chapter 1, Chapter 2*, etc. The following figure shows how a VET learning course sample can be organized and presented.

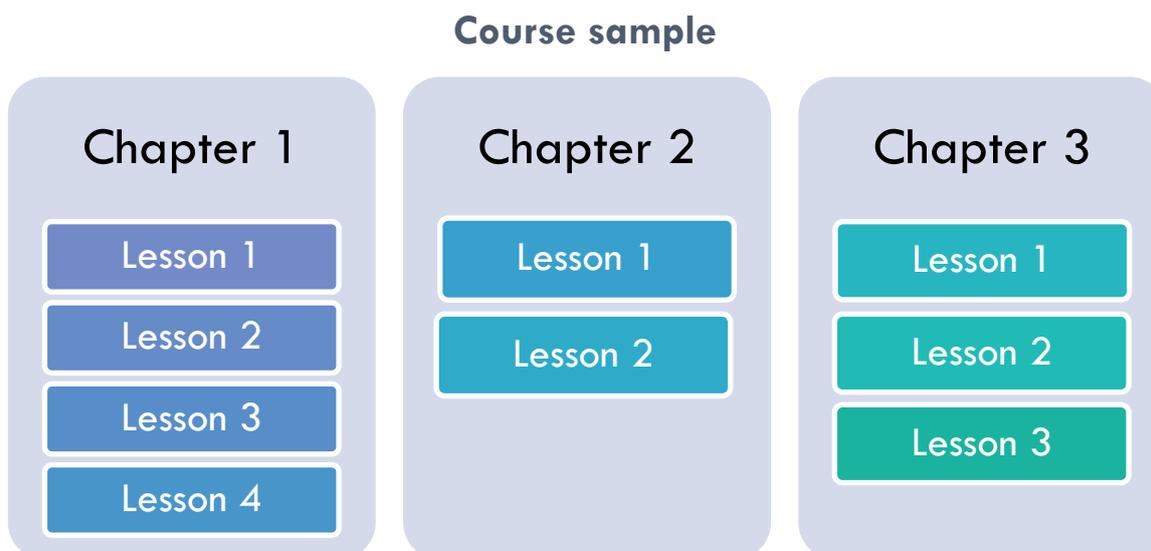


Figure 4: Organization of a VET learning course sample

Step 2: Upload material

Once it is clear how the material will be presented, it is ready to be entered in the platform (See Figure 5: *Editing title and content tools*)

- a) **Insert the title:** A small text box will provide this option. Think about key words when entering the title and include the type of material being shared: course, seminar, lesson, catalogue, etc.
- b) **Insert content:** Here you will be able to provide the description and the content itself:
 - Content box 1: Use this box in case the material is located in a website so when clicking *Fetch* the content will appear automatically in BOX 2. Depending on the formatting of the source website the content may not appear with the correct aspect: In these cases it may be easier to copy-paste it without format in BOX 2 directly.
 - Content box 2: It will contain the information of the learning material and the content. Here you should enter at least the description of the learning material. As an alternative, you also enter here the content of the material in text version or in online version with external links.
 - Introducing content in text version (option 1 -Figure 5): For the text version you would only need to copy-paste the text content and use the formatting menu bar on top. With this option the content will be directly displayed in the platform. You can also add pictures and links to videos See option 1 example in Figure 5.
 - Introducing content in online version (option 2 - Figure 6). For this option, the learning material should be previously hosted in another website (eg. the website of your VET organization, or the site of the department). Thus, you will need to write the title of the chapter or lesson and use the link button to include the URL of the website. See option 2 example in Figure 6.
 - Content box 3: If you don't chose any of the previous options to enter the material content, this box provides the *Upload file* alternative (option 3 - Figure 5). You may either browse your computer to search for the file or drag it into the box. This is the easy way to share material; you just need to remember including a description in box 2.

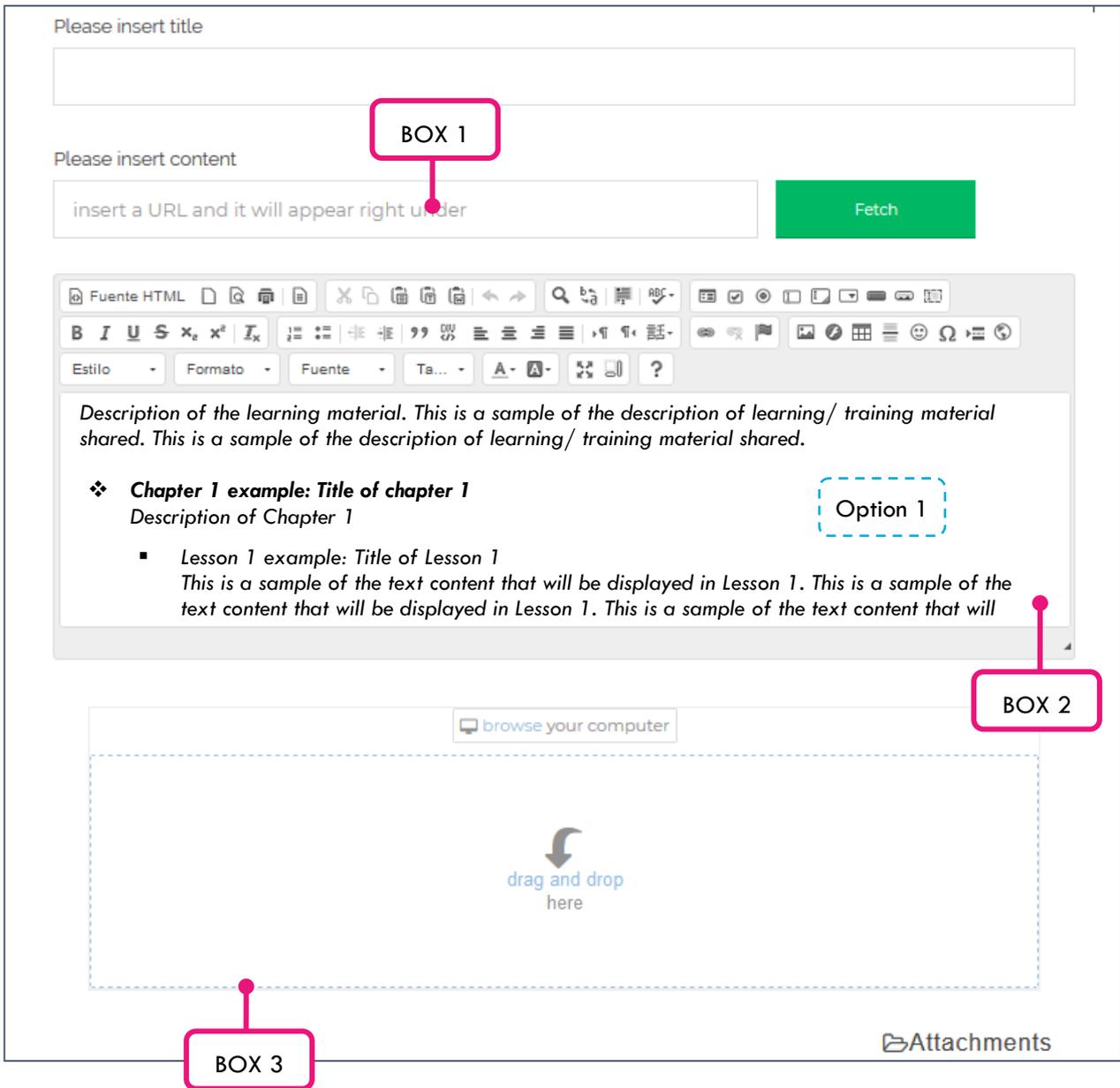


Figure 5: Editing title and content tools

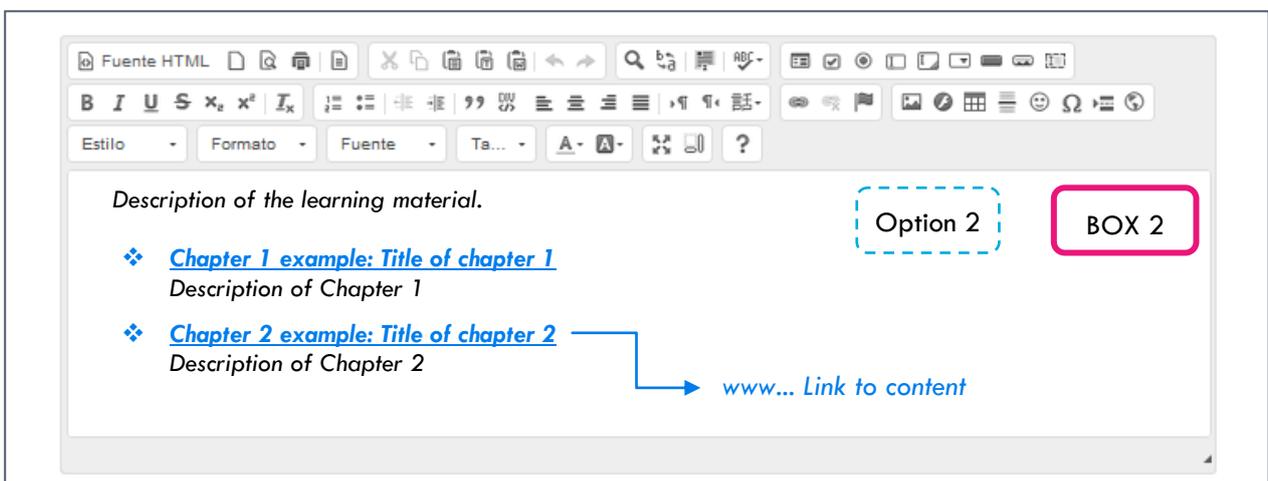


Figure 6: Introducing content in online version

Step 3: Enter material information

The last section is focused on including information of the learning material shared (Figure 7):

- a) **Source:** Insert here the ULR of your VET organization.
- b) **Language:** Select language of the material shared.
- c) **Filters:** Check all the categories within EER Active Systems, EER Passive Solutions, and EER Management that apply to the type of learning material shared.
- d) **Tags:** Include the keywords that apply.
- e) **Reference:** Include authors and organizations involved in the content creation. Check the FAQ for copyright materials by third parties.

Figure 7: Editing information tools

4.3. How to motivate students with the learning platform

Having a mutual learning platform ready for students to search, share and interact provides an easy and attractive educational environment. One reason for the growing popularity of peer learning is the formation of an approach that emphasizes discovery learning and viewing knowledge acquisition as a social activity rather than one that is limited to structured courses and classrooms.

To facilitate this process, the platform has a friendly design which allows the least technological users to smoothly explore content. A student can access the learning material by selecting *Search the Learning Material* in the *Learning Material* section (Figure 3). Here all the results will be displayed and a search bar and a filter menu will be available (Figure 8). This organized appearance engages the user to easily navigate through the materials available. VET entities with learning material shared within the platform can edit them by accessing the menu *Settings/ My Content*.

Q

EER ACTIVE SYSTEMS

- Control Systems 7
- Lighting Systems 10
- Renewable Systems 19
- Thermal Systems 13
- Ventilation Systems 9

EER MANAGMENT

- Funding Opportunities 4
- Management & Energy 8
- Policies And Regulations 9

EER PASSIVE SOLUTIONS

- Enevelope Walls 14
- Insulation Materials 16
- Natural Lighting Shading 13
- Roofs & Floors 14
- Windows Doors Inc 13

LANGUAGE

- English 10
- Greek 0
- Spanish 13
- Hungarian 11
- Dutch 15
- Maltese 0

EER Regulations in Malta
By Katia Mifsud

👍 1 📅 29/03/2018

Minimum requirements for the energy performance of buildings in Malta are described in this document: EER Regulations in Malta Extract from:

<https://drive.google.com/file/d/1xEeOyDK1PwLQFv-KSQRazkZ5nqBIMg4/view>

📌 Policies And Regulations

🏷️ regulations, malta

Lighting Systems
By Katia Mifsud

👍 0 📅 29/03/2018

Simple and inexpensive ways to reduce the energy consumption and costs associated with lighting in office buildings without compromising health and safety or comfort levels at the work place.

<https://drive.google.com/file/d/1VAftozjWmNjsUOKbR2hH-JclV5RMh3/view>

📌 Lighting Systems, Natural Lighting Shading

🏷️ lighting, efficient

Renewable Energy Systems
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Short tips on the use of Photovoltaic (PV) Systems and Solar Thermal Hot Water Systems. Renewable Energy Systems Extract from: Guidelines for Energy Savin...

https://drive.google.com/file/d/1awf-bmclSjrOxzejd_pmVvk_h30gNhM/view

📌 Renewable Systems

🏷️ renewable, energy, photovoltaic, solar, system

Roof, Wall & Floor Insulation
By Katia Mifsud

👍 0 📅 29/03/2018

Figure 8: “Search the Learning Material” results

4.4. How to use the platform as source for your courses

On a different scenario you may prefer using the learning material already included in the platform to create your courses. This way you won't be uploading your own materials to the platform, but will be using the materials which are there and embed them in your already developed course. This way you should especially consider the way you organize your course:

- a) **Prepare your material:** This is organising your lessons and content in chapters, blocks, etc.
- b) **Look for additional material in the platform:** Once your material is ready, use the search engine in the platform to locate additional material you would like to incorporate to your course (Figure 8).
- c) **Obtain the material for your course:** Use the website URL, or directly the information displayed for each search result (Figure 9). This way you can use the *Source* link or download the *Attachments* to embed it to your course.



Figure 9: Information displayed for each LearnEER content after the search results

- d) **Organize your course with the LearnEER material:** by including the link or material downloaded within your course material.

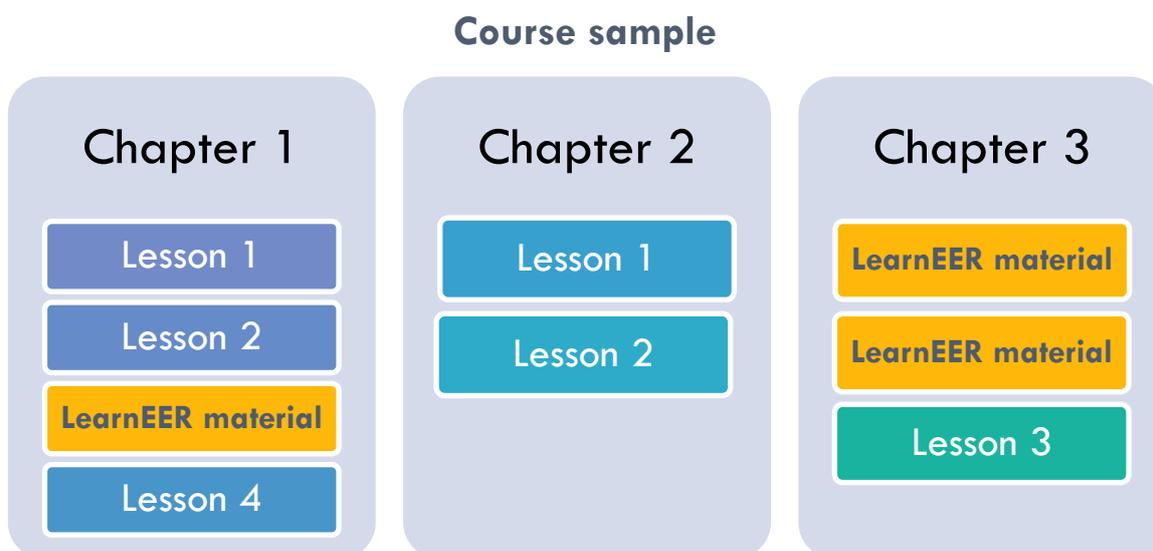


Figure 10: Including LearnEER material in your course

4.5. How is mutual learning positive for VET training?

Mutual Learning or Peer-to-peer learning is where one person leads another through a concept, in which the former is a 'trainer' and the latter is a 'learner'. Thus, with this technique, the two persons are learning from each other in a bi-fold way since peer-to-peer learning is helpful for both: by explaining and presenting a concept, the 'trainer' takes their own understanding on a level, and also develops their exposition skills.

The scope of the LEARN-EER platform offers other advantages such as opening doors for educational formation to persons who do not have the possibility to attend for classroom sessions or fixed course structures. Research indicates that peer learning activities typically result in:²

- (a) team-building spirit and more supportive relationships
- (b) greater psychological well-being, social competence, communication skills and self-esteem
- (c) higher achievement and greater productivity in terms of enhanced learning outcomes.

Although mutual learning is a valuable tool to utilise, the teacher must consciously orchestrate the learning exercise and choose the appropriate vehicle for it. Only then will students in fact engage in peer learning and reap its benefits.

² Peer Learning – article by Associate Professor Alice Christudason, Department of Real Estate, School of Design & Environment / Associate Director, CDTL <http://www.cdtl.nus.edu.sg/success/sl37.htm>

5. CONCLUDING REMARKS

VET has always taken place either in the classroom or on the job site, where students learned new skills from accredited professors or established professionals. However, times have changed and face to face learning is not as popular as online learning as each time more and more students find it easier to learn various skills and capacities from established professionals in the industry.

The LearnEER platform has prepared a mutual learning platform especially addressed to the EER professionals and future professionals. Hence, learning contents are energy-efficiency focused and a teacher/learner role is available for any user.

5.1. 5 steps to promote VET via mutual learning

VET organizations play a key role in the engagement of users to mutual learning activities by including part of their curricula offer in online mode, which has been proved to have great acceptance. Also the mutual learning feature provides an attractive environment where users can also comment and rate materials shared besides the direct communication with the teacher. In order to assure an effective involvement of students and promote VET via mutual learning, the following steps have been designed for VET organizations.

- 1. Include a variety of contents in the platform.** When sharing a learning material, make sure to use different type of contents such as videos, pictures, info graphics, etc., in order to make it as attractive as possible. Remember that anything can be included as part of your content with external links.
- 2. Include short and precise material.** Users like to learn without complications of time, however many educational entities tend to design courses with a lot of content or with parts that aren't easily understandable or relevant to the topic. Try to be specific with the content delivered and keep in mind your audience current capacities.
- 3. Select most relevant topics to the sector.** As a key actor of the sector, VET organizations should remain vigilant and study the EER trends in terms of relevance and technology. No matter how pioneering a system is if it is not relevant to the climatology of the or building sector of your audience.
- 4. Be innovative.** Seek for the coming market innovations and provide early training material. Professionals look for standing out in the sector continuously and learning about EER innovations is an excellent way to achieve it.
- 5. Use dissemination channels.** Despite how popular a VET organization can be, dissemination channels cannot be dismissed. Highlight how technological you are by sharing the mutual learning approach used in your open courses.