



Dedicated to stimulate demand for sustainable energy skills in the construction sector

Overview of applied eLearning interactions

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Report:	Overview of applied eLearning interactions
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Date:	05/07/2023
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Related Deliverable:	4.6



This project has received funding from the European Union's h2020 framework programme for research and innovation under grant agreement no 892894.

SUMMARY

In BUSLeague, we have put together a report that explores short and challenging e-learning interactions, also known as micro-learnings, and their connection to the BUSLeague EE-skills qualification. Our aim is to provide micro-recognition and learning of micro-credentials. In this deliverable, we offer an overview of the e-learning interactions we have implemented, along with their practical applications. We have also evaluated their effectiveness in helping learners achieve their goals.

But first, let us talk about some important concepts we have covered. **Micro learning** provides learners with just the right amount of information they need to achieve specific objectives. A gamified micro-learning can introduce concepts and guide users towards an end goal. Game-based learning uses games to enhance critical thinking and problem-solving skills. For example, simulations offer immersive experiences that connect theory with real-world situations, allowing learners to develop analytical skills and evaluate different perspectives.

On the other hand, **micro-credentials** are certifications that validate learning outcomes from short learning experiences. They are assessed against specific standards and can be owned, shared, and combined to create larger qualifications.,

Now let us explore the diverse e-learning interactions and platforms we have uncovered across different countries.

In **Austria**, for example we have found several initiatives that offer valuable resources like videos, webinars, apps, and databases to enhance knowledge about energy-efficient construction and promote sustainability:

- **ConClip:** A free online platform with educational videos that explain crucial steps in building energy-efficient structures. These videos can be used in classrooms or on portable devices, benefiting teachers and construction professionals alike.
- **Building Academy Upper Austria:** This institution provides education for apprentices and professionals in the construction industry. They offer a digital platform for further education, enabling building professionals to enhance their skills.
- **Klimaaktiv Webinar on Building Standards:** klimaaktiv, the national climate protection network, offers free webinars on the klimaaktiv building standard, a widely used evaluation standard for sustainable construction in Austria. These webinars provide valuable resources and knowledge to help participants meet the standard.
- **Klimaaktiv App for Sustainable Living:** klimaaktiv offers a free app with interactive courses on sustainable construction, renovation, heating, energy-saving techniques, and mobility. The app caters to different target groups and covers topics such as comfort ventilation, common construction mistakes, the klimaaktiv building standard, and on-site climate protection. It is available for smartphones and desktops.
- **NEWCOM Competence Database:** The NEWCOM project has developed training schemes to support the construction and renovation of nearly zero-emission buildings.



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These modular trainings can be used independently or in conjunction with existing courses. The project has also created a competence database for comparing skills acquired across Europe, which can be expanded to various fields of work.

- Ongoing e-learning in BUSLeague: The BUSLeague project focuses on identifying essential energy skills in Austria and providing relevant training. Working closely with klimaaktiv, the project collaborates with supplier networks and manufacturers to determine effective training programs. The primary target audience for these trainings is national energy advisors, who have shown a strong interest in further education related to energy efficiency.

Bulgaria also offers a range of e-learning interactions and platforms to support sustainable construction learning. Here are some noteworthy examples:

- Build in Green Platform: Created by EnEffect in partnership with GEF, UNDP, and Gradat Media Group, this platform serves as an e-library, providing comprehensive resources on sustainable building practices. It covers topics such as design, construction, and renovation, offering valuable information and best practices.
- Train-to-nZEB Mobile App: Developed in collaboration with MosArt (IE), this app focuses on training for nearly zero-energy buildings (nZEBs). While the app is accessible and downloadable, it requires further testing to ensure all modules function properly. It offers modular trainings to enhance skills related to energy-efficient construction.
- CraftEdu Database: EnEffect and international project partners created this e-learning platform, available in multiple languages. Utilizing the October CMS, it offers a modular content structure that can be customized into upskilling courses and broader certification programs.
- Ministry of Education and Science: The Ministry implemented EU projects that led to updates in the State Educational Standards. EnEffect developed electronic training materials for the "Ecologic and energy-efficient construction" discipline in professional high schools. These materials, including PPTs and textbooks, can be accessed through the Ministry's online database. While the first training package has been well-received and widely downloaded, access is currently limited to specific high schools.

In **Spain**, several initiatives cater to diverse audiences, ranging from seasoned professionals to aspiring apprentices, all working towards the same shared objective of promoting energy efficiency. Here are some notable examples:

- Bauhaus is a Leading brand in DIY, renovations, decoration, gardening, and construction has an e-learning platform called Moodle, offering practical courses for its employees. The courses include entertaining videos analysing common situations in their stores, equipping employees with the necessary knowledge and skills to handle such situations successfully.



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- The Valencia Institute of Building (IVE) is another example that provides a range of training programs adapted to the construction sector's challenges. These programs are categorised based on their duration: e-pills (micro-learning videos of 2-5 minutes length), courses (5-25 hours), intensifications (20-60 hours), and master's degree (200-800 hours). The programs are available online through IVE's Moodle platform, and successful completion leads to certificates or inclusion in professional lists managed by IVE.
- On the other hand, IVE has been evolving its training offerings to be more flexible and accommodating to professionals. Online training has increased, and there is a focus on shorter courses. Recognition of training has also improved, with certificates, professional lists, and inclusion in the "Register CHC" system.

Overall, both Bauhaus and IVE offer e-learning interactions and platforms to enhance skills and knowledge in their respective industries.

In **Ireland**, there are several micro e-learning resources available to enhance knowledge and skills in energy-efficient construction and sustainability. Here are some examples:

- The BUILD UP Skills Advisor App helps building professionals and construction workers upskill in energy renovation. Users can select their profession and area of interest to see relevant courses available in Ireland. The app has gained new users during the BUSLeague project.
- The IGBC offers course mails on sustainability, circular economy, nature, and biodiversity, and advancing net zero. Building professionals receive these mails weekly and can complete knowledge tests to earn Continuous Professional Development (CPD) hours and certificates.
- E-badges are used in Ireland to recognize upskilling achievements. For example, Home Performance Index (HPI) Certification training course completers can use HPI assessor badges. Construction workers who complete NZEB training receive digital badges issued by City & Guilds.
- The Construction Blueprint project, part of the Erasmus+ Programme, provides an online portal with training content. TUS in Ireland is involved and will make 45 new VET modules publicly available after the project concludes. The project aims to link with the BUS Advisor App for synergistic benefits.

In **France**, a range of applied e-learning interactions has been utilised to support the overarching objective of promoting energy efficiency, for example:

- The MOOC Bâtiment Durable is a collaborative training platform created by professionals in the building sector, the Sustainable Building Plan, and ADEME. Launched with the support of GIP FUN MOOC, the platform accepts training projects from various organizations, including training institutions, associations, universities, and design offices. These courses provide professionals with a platform to share their



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knowledge and skills in sustainable building, fostering a community focused on transmission and collaboration.

- Leroy Merlin, a DIY/hardware store, has introduced the Leroy Merlin Campus to assist customers with DIY projects, lodging renovations, and energy efficiency. The Campus offers traditional training and coaching services, along with a digital platform featuring tutorials and videos for individuals embarking on renovation projects.
- The LMS Practee Formations platform, built on Moodle architecture, comprises seven learning blocks designed for building professionals. These blocks incorporate videos, written content, and interactive activities, emphasizing the belief that gamification is a powerful tool for acquiring knowledge.
- Similar to other DIY stores, Castorama has integrated a series of tutorials and guides on its website, providing the public with valuable information. The guides are organised into 24 categories, offering essential insights for successful renovation projects, construction endeavours, and home improvement.

In the **Netherlands**, the BUILD UP Skills advisor-app offers micro-learning interactions for training institutes and product suppliers. These interactions involve question sets based on real-life images to assess component situations or identify incorrect work. The app also allows for self-instruction and self-check interactions. Additionally, there are other e-learning applications explored in the BUSLeague project, including the Attrivity app, Wisbits, and the 2B-collective. These platforms provide opportunities for quick training preparation, challenges during training, and gamified learning experiences. However, some platforms, such as Wisbits, were not used due to pricing concerns. The 2B Collective focuses on gamification and provides templates for various interactions, but customization options are limited.

E-LEARNING INTERACTION EXPERIENCES ON EU-LEVEL

The BUILD UP Skills Advisor app and the online courses of the Construction Blueprint project are connected to European funding and have the potential for use and value in the EU.

For example, interactions like ConClip, NEWCOM competence database, and Certified Passive House Trainer are available in multiple languages and can be utilised throughout Europe. In addition, The Train-to-nZEB mobile app and CraftEdu database are also accessible in various languages.

These EU-level e-learning interactions are contributing to the European approach to micro-credentials and supporting lifelong learning for market needs. They aim to make learning accessible to all and expand beyond vocational and higher education.

TIMELINESS AND EFFECTIVENESS OF INTERACTIONS

A rubric based on the Kirkpatrick training evaluation model was developed to assess the effectiveness of learning interventions in the energy transition. This rubric allows us to evaluate the interventions in a consistent and uniform way, focusing on the learning goals and



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outcomes. It's like a guide that helps us understand how well the interventions are working in terms of knowledge, skills, and abilities.

The great thing about the rubric is that it not only helps us compare different instructional design approaches and interventions, but it also encourages professionals to assess their own learning progress. By setting clear learning goals and evaluating themselves against those goals, professionals can get a good sense of how well they're learning and improving in the context of the energy transition.

Furthermore, the learning goals provide structure to the experiential learning process, both during and after the training. Professionals can share their experiences, insights, and knowledge gaps with their peers and the wider community. This knowledge sharing is facilitated by platforms like Moodle or the BUS app, where professionals can connect and learn from each other's practical experiences.

By evaluating the effectiveness, relevance, and timeliness of the interventions, we can continuously improve and ensure that the learning experiences are meaningful and impactful. We want to create a supportive and engaging learning environment where professionals can thrive and contribute to the energy transition in a meaningful way.

MORE INFORMATION

If you want to know more about this deliverable, the full version can be found on the BUSLeague project website at the following link: <https://busleague.eu/outcomes/>



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