International Conference
The Future of Education

GAMIFICATION IN EDUCATION

Introducing Gamification Elements in Professional Education

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Introducing Gamification Elements in Professional Education

Topics covered:

- ✓ Professional education in Energy skills and Sustainable construction
- ✓ Gamification in education – A brief state-of-the-art
- ✓ The differences between gamification and game-based learning
- ✓ Peculiarities of professional education
- ✓ Case study of SEEtheSkills' approach related to professional education in energy skills
- ✓ Examples of gamification elements developed/used in SEEtheSkills
- ✓ Evaluation of the implemented approach
- ✓ Conclusions

Rationale

- Energy efficiency
- Sustainable use of resources
- Waste reduction
- Environment preservation
- Designing efficiency

Advantages

Benefits

Challenges

Methods

Practices

Approaches

Energy skills

- Competent workforce
- Skilled and trained workers
- Qualified professionals
- Embraced innovations

Sustainable future

Rationale

- Methods
- Practices
- Approaches

- For training
- For education
- For upskilling
- For reskilling

Technology-enhanced learning methods

Gamification - a promising approach to fostering

- Engagement
- Motivation
- Effective learning

The future of education

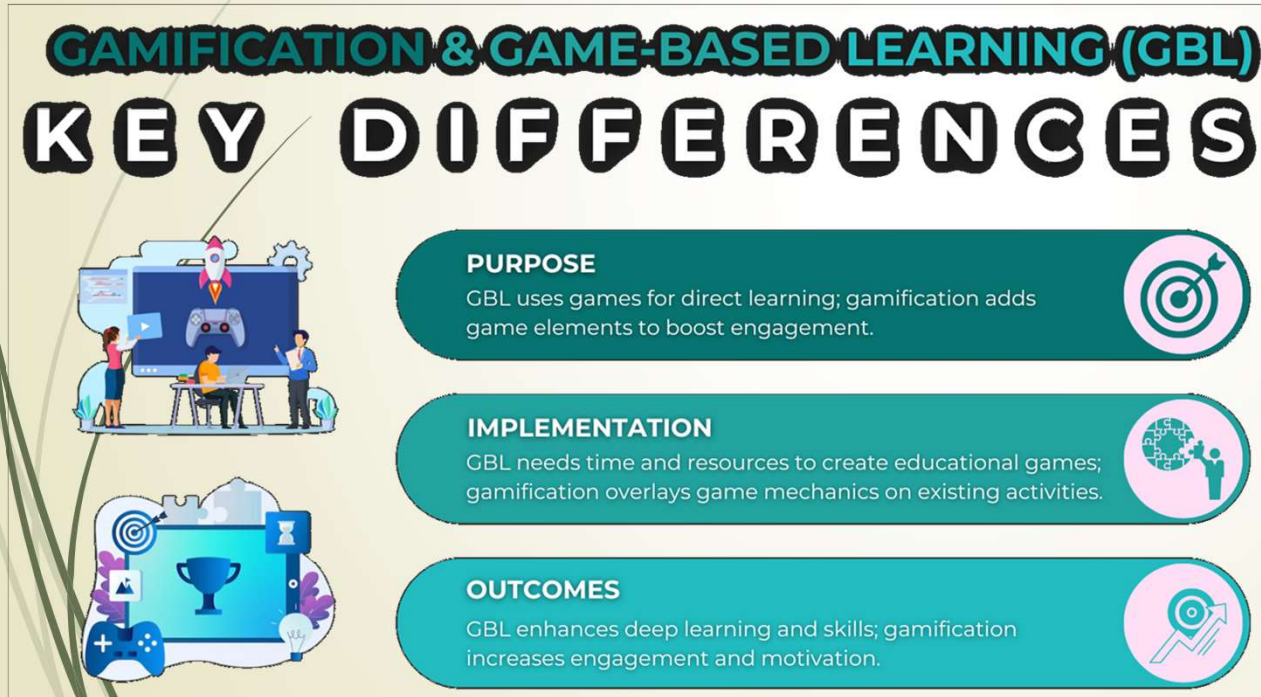
Gamification in education – A brief state-of-the-art

- **Integration of game elements and game-based thinking into non-game contexts to enhance engagement and motivation**

Gamification in education – A brief state-of-the-art

- **Key features of gamification**

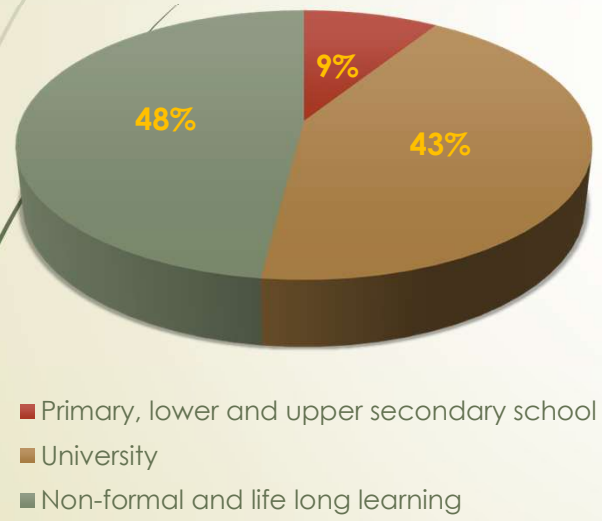
The differences between gamification and game-based learning



- **Gamification** usually refers to a series of requirements that must be complied with in order to be applied to education.
- On the opposite, **Game-based learning** allow the student to be able to immerse themselves in scenes and settings that are difficult to express in reality and to be able to act as the protagonist of the first person perspective.

Examples of gamified tools in the learning process

Occurrence of gamified elements in education process



Examples of tools that facilitate gamification

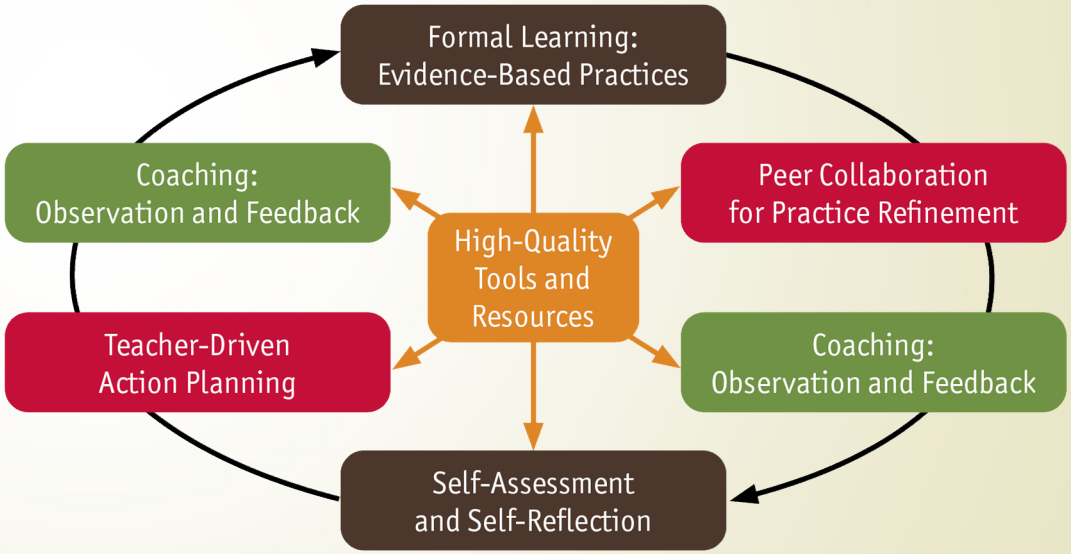
- **Socrative**: An assessment tool that offers real-time feedback through interactive quizzes and polls.
- **Kahoot!**: A game-based learning platform that allows educators to create quizzes and games to engage students.
- **Duolingo**: A language learning app that uses gamification to make learning languages fun and interactive.
- **Open Badges** are digital credentials that recognize and validate achievements.
- **Learning Management Systems (LMS)** like Moodle also support gamification by offering tools to create badges, leaderboards, and track student progress.

Peculiarities of professional education

Professional education is very important in the specific sectors that **rely equally on skills** as they do on the **amount and quality of knowledge** of the employees.

The education of professionals in these sectors faces **challenges** such as:

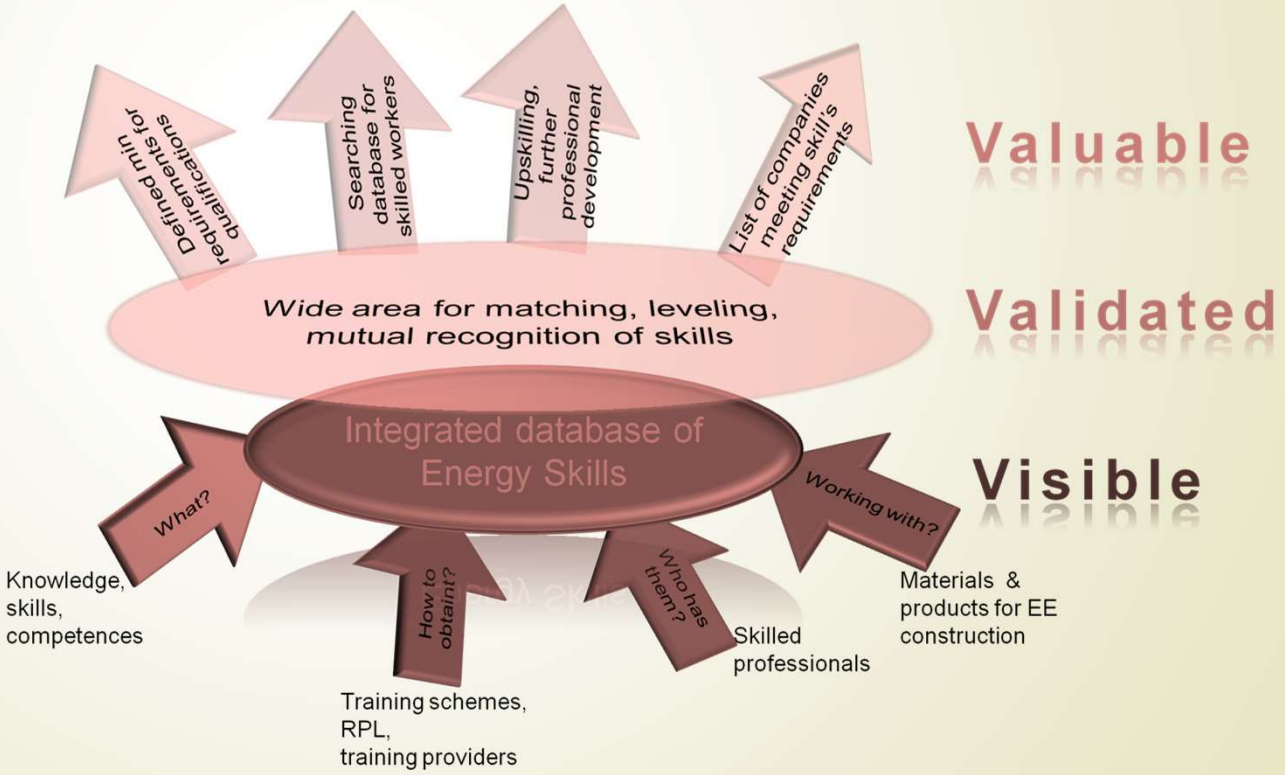
- time constraints,
- financial burdens, and
- a lack of support.



Case study of SEEtheSkills' approach related to professional education in energy skills – 3V approach

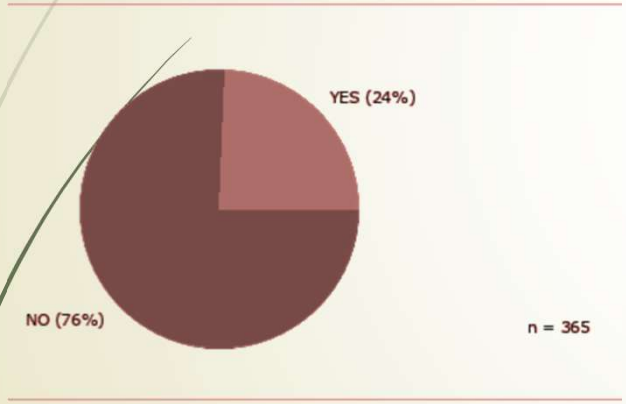
Concept and approach

Creation of **Integrated database of Energy skills** to serve as a wide area for matching, leveling and mutual recognition of skills

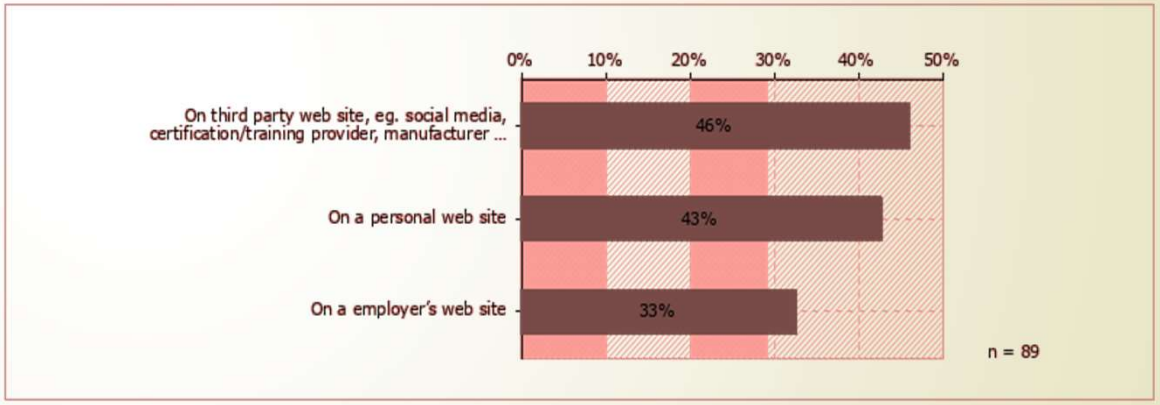


Lessons learned from surveying EE skills

- Lack of registers of skilled person – the need for **VISIBILITY**



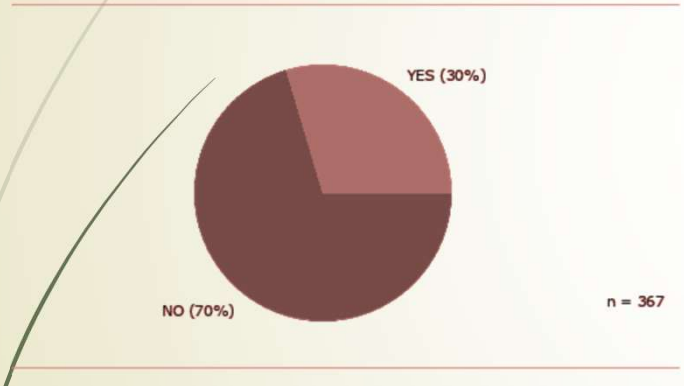
Are your skills publically visible?



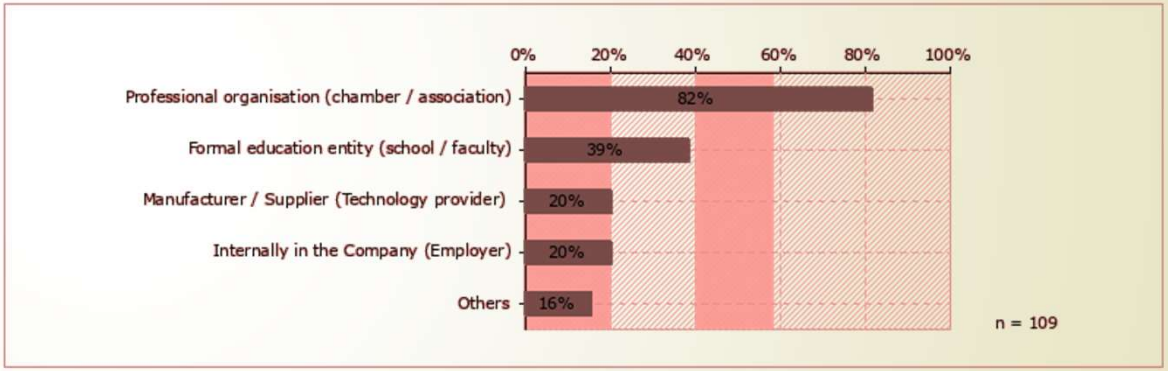
Where are the skills listed/announced?

Lessons learned from surveying EE skills

- Lack of formal certification of skills– the need for **VALIDATION**



Do you have certificate for your skills?



Where did you achieved your skills?

Lessons learned from surveying EE skills

- Crucial actions are needed to increase the AWARENESS of the **VALUE** of skills

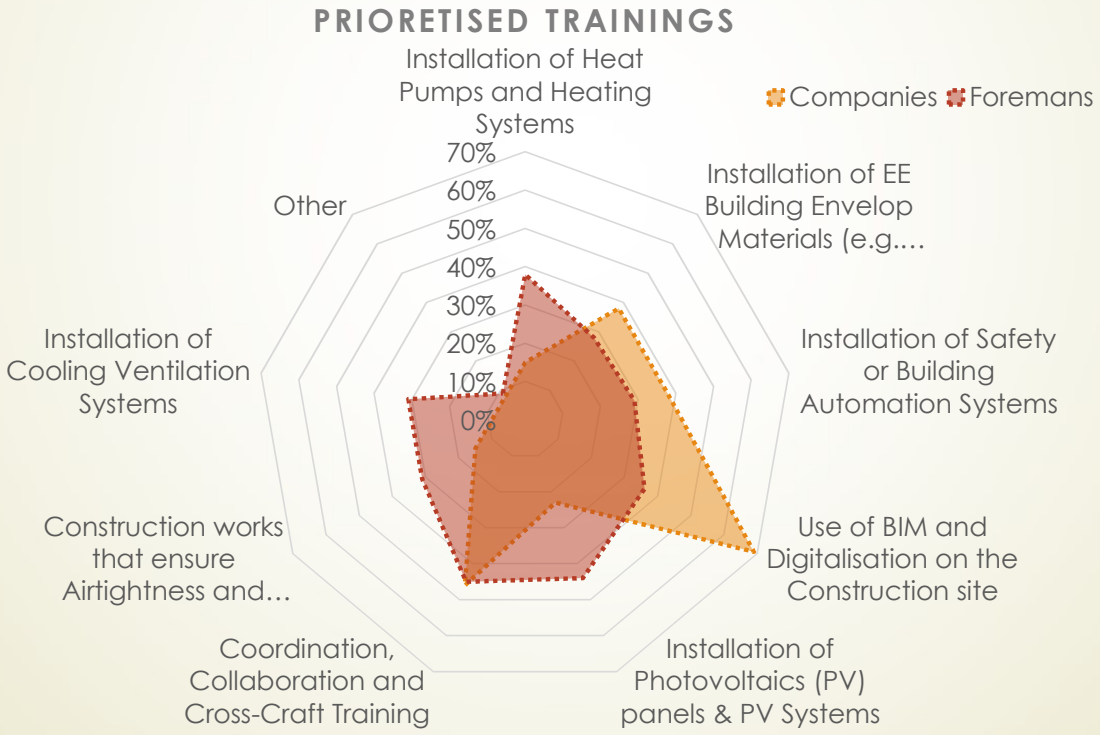
When lacking EE and digital skills

-Only 33% will reskills existing employed workers
-Only 11% will redeploy existing workforce
-More than 50 % will hire external experts (skilled professionals)

Supporting the long term vision for supplying skills and skilled professionals

Lessons learned from surveying EE skills

- Identified scope of skills' need

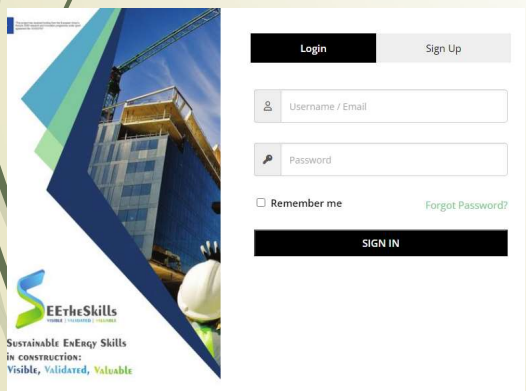


SEEtheSkills' approach to professional education in energy skills

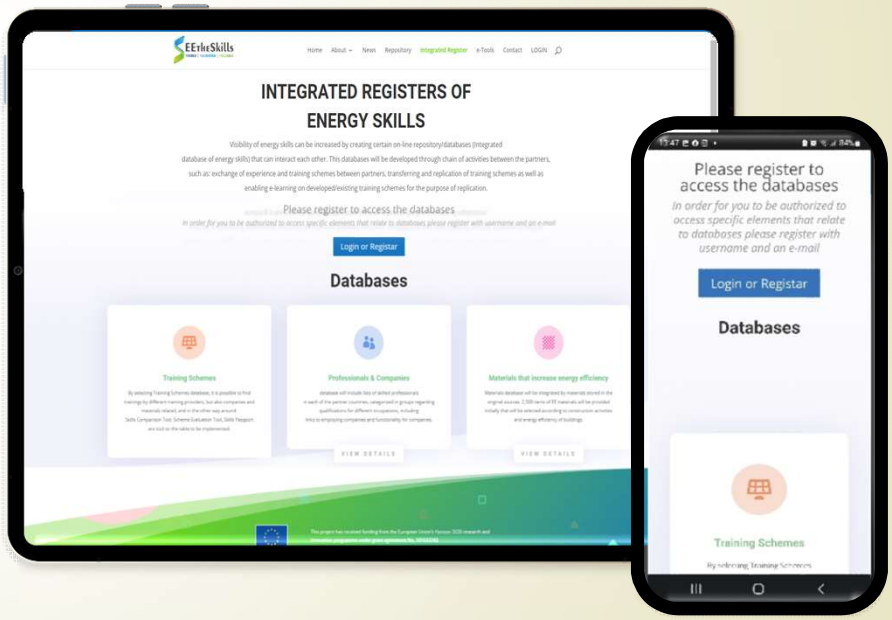
Launching the Integrated Register of Energy skills

The Integrated Register of Energy skills is available for access to all interested professionals and companies, through the website www.seetheskills.eu.

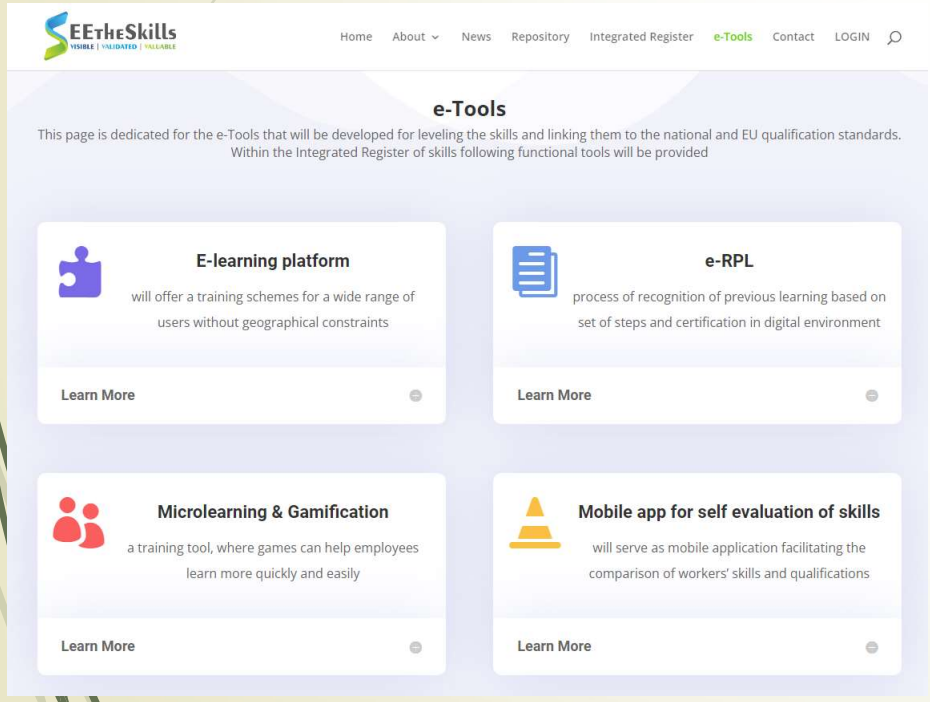
It can be easily accessed through desktop or mobile device.



Registration form



Different functionalities and e-Tools within the Integrated Register of Energy skills



Gamification elements

-**e-learning platform** for organising webinars/trainings

-**e-RPL tool** for digitalization of the process of recognition of prior learning

-microlearning and **gamification** tools for upskilling

-**mobile app for self-assessment** of skills by workers

-**Digital badge** for professionals from the Professionals register

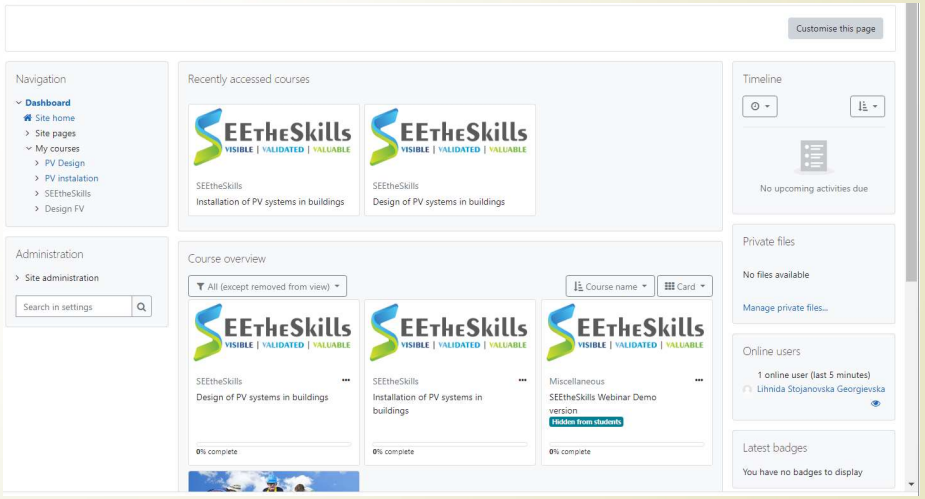
E-learning platform

The platform is fully accessible across all modern Internet browsers.

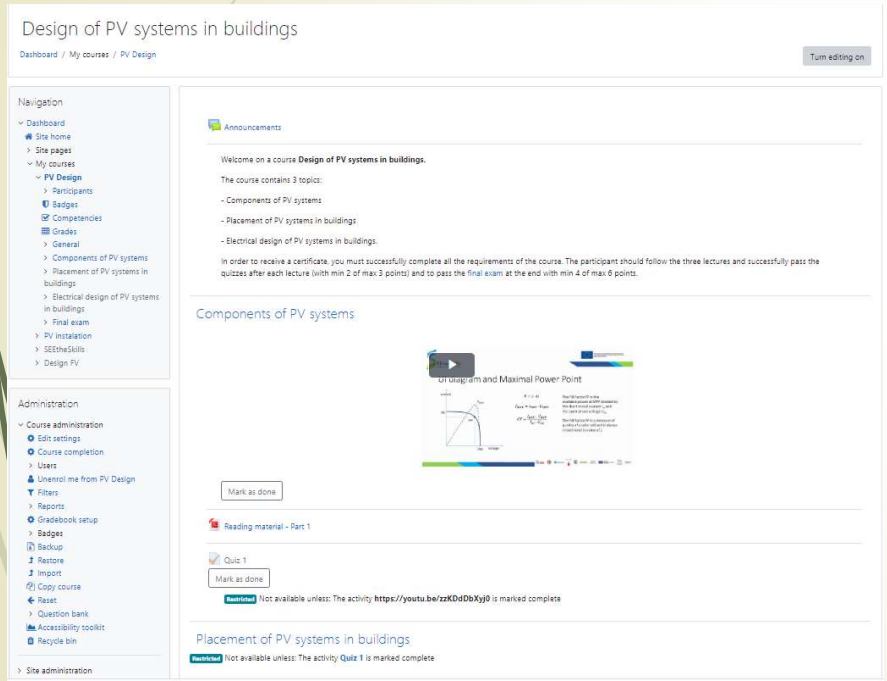
The SEEtheSkills Learning Management System (LMS) is a central on-line platform.

The structure is modular; you can either take the full series of courses or just selected course.

- Self guided learning - no dates and deadlines
- **Easy-to-use intuitive Moodle based platform**
- Modular trainings – selected module or a series of courses
- Full access to the training material, video presentations, assignments and direct contact to the trainer or other classmates



E-learning platform

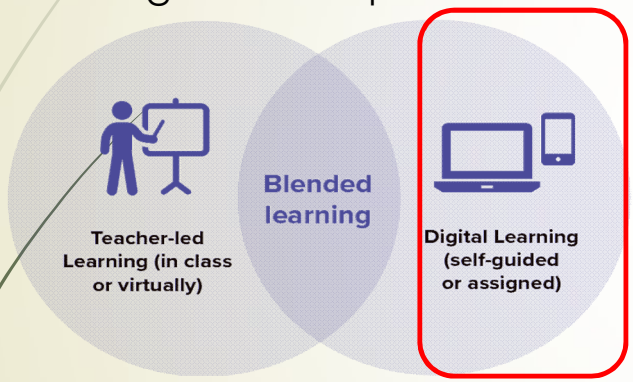


Available micro learning pieces on SEEtheSkills e-learning platform:

Installation of PV systems in buildings
Design of PV systems in buildings
BIM Certification vs Certification in BIM
BIM skills – Necessary skills in Construction 4.0
Effective data collection for digitization of existing assets
Effective coordination and clash-detection processes in pre-construction phase
Cross-craft skills influence to optimization of radiant heating and cooling
The influence of cross-craft collaboration in the design phase to potential defects during construction and operation of the building

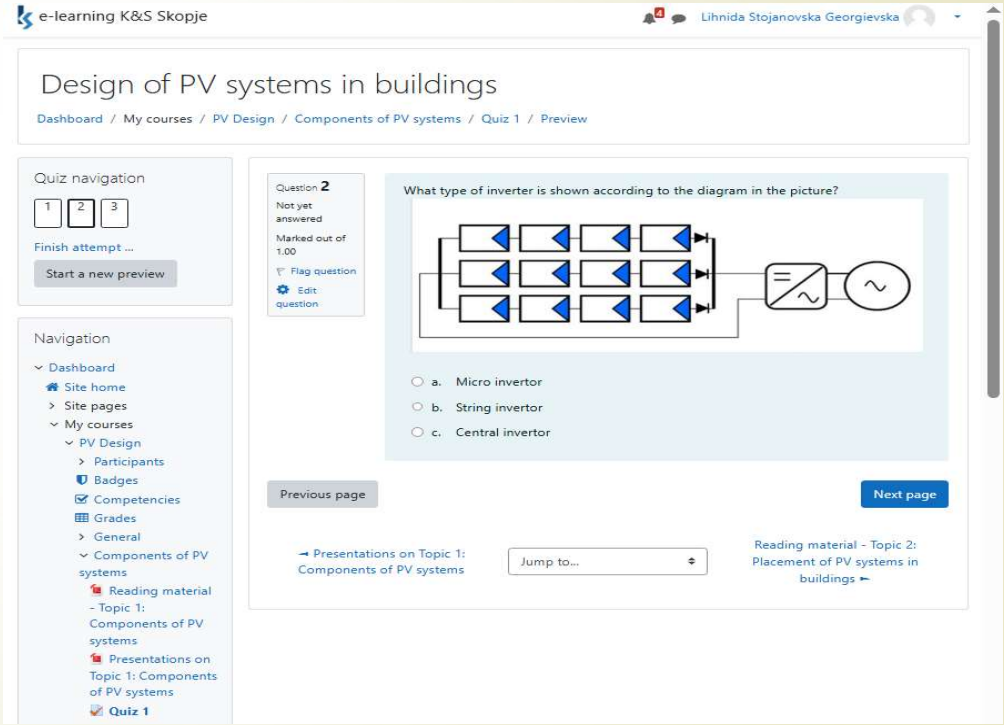
E-learning platform

The structure of self-guided learning scheme, enabled through Moodle platform:



Organisation into 3 sections/topics:

- 1 video in each section (5 - 10 minutes)
- Exercise/homework in each section
- Reading material
- Quiz at the end of each section
- Final Test at the end of course



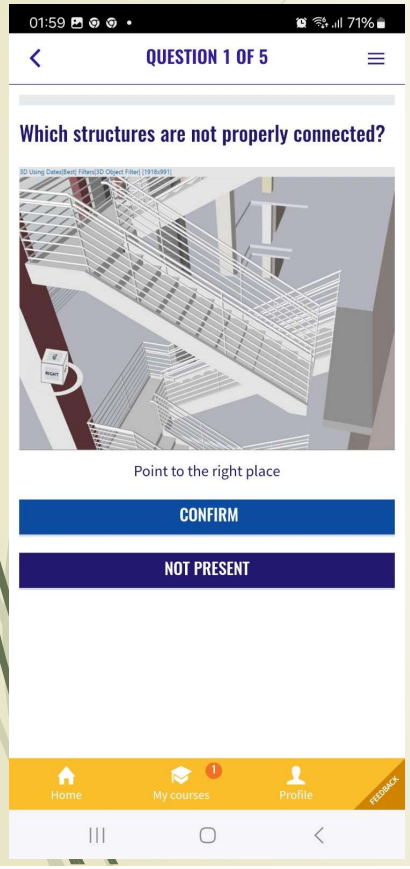
Gamified question sets

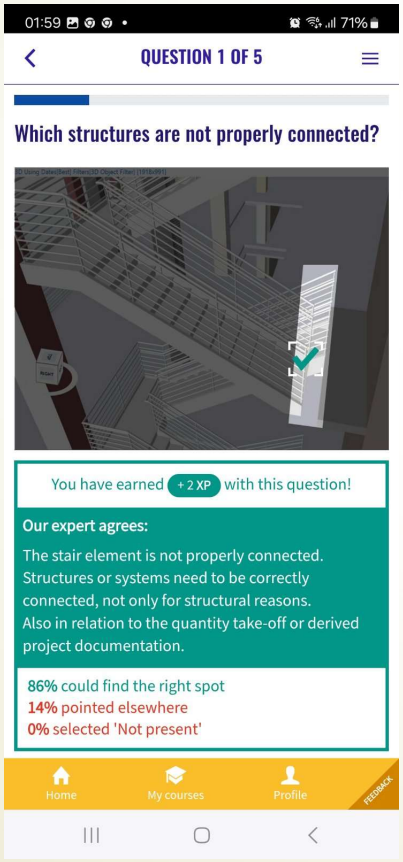
Gamification refers to creating positive experiences in these areas that might improve the morale and productivity of any workplace.

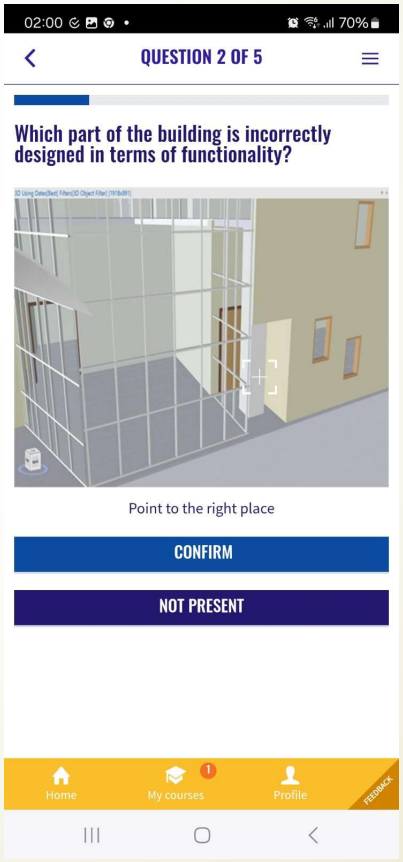
The gamified question sets:

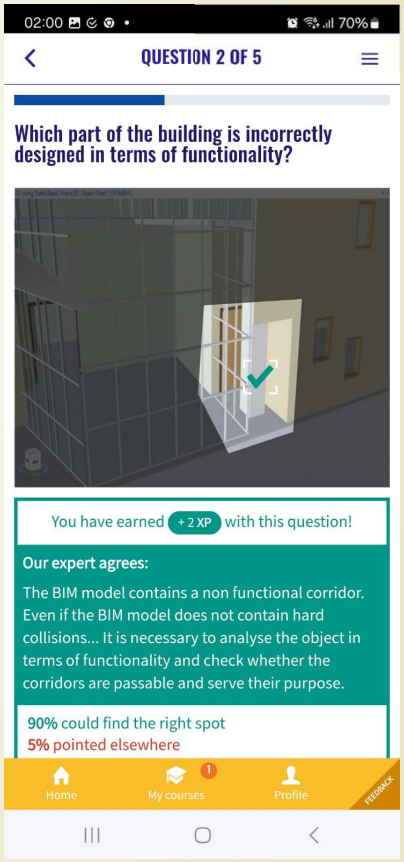
- Include 5 specific questions each that refer to certain situation replicating the workplace
- The solution requested is to solve the challenge and select the right approach for solving the problem
- The question sets replicate the working environment and real problems or challenges captured from the workplace, that need to be solved
- Include explanation of the proposed solution

Gamified question sets



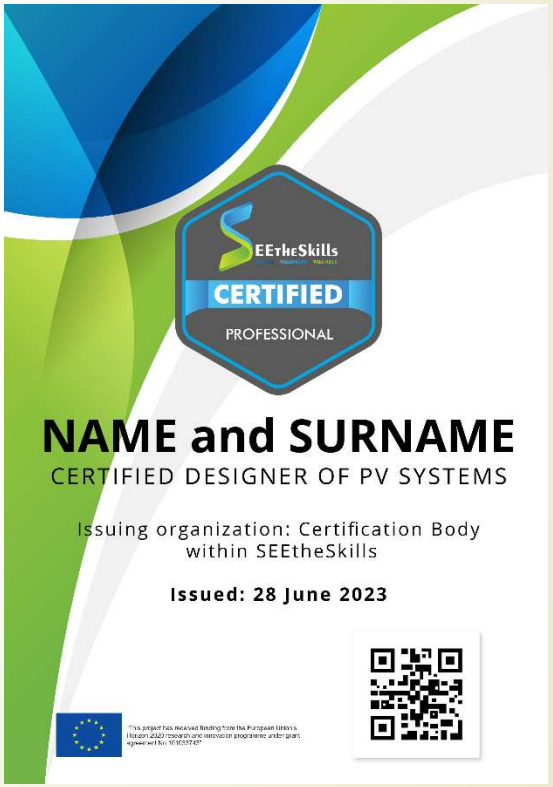






Digital badges for certification

To achieve the visibility and to enable promotion of certified workers and professionals, **Digital Register of certified workers and trainers** is created.



Digital badges for certification

The Professionals listed in the **Professionals' register** receive a **Digital badge** that include each skills, knowledge and competence that a worker has ever gained, it will contain an information on the education of the worker in formal and non-formal form with the list of trainings, and moreover this personal skills' passport have levelled all the achieved learning outcomes.

Evaluation of the implemented approach

The benefits of gamification in the classroom are both motivational and practical. However, as with any innovative teaching method, there are also limitations educators should be aware of.

As **advantages of gamification** the following can be listed:

- Enhanced Engagement
- Improved Retention
- Customisable Learning Experiences
- Real-Time Feedback
- Collaboration
- Encourages Persistence

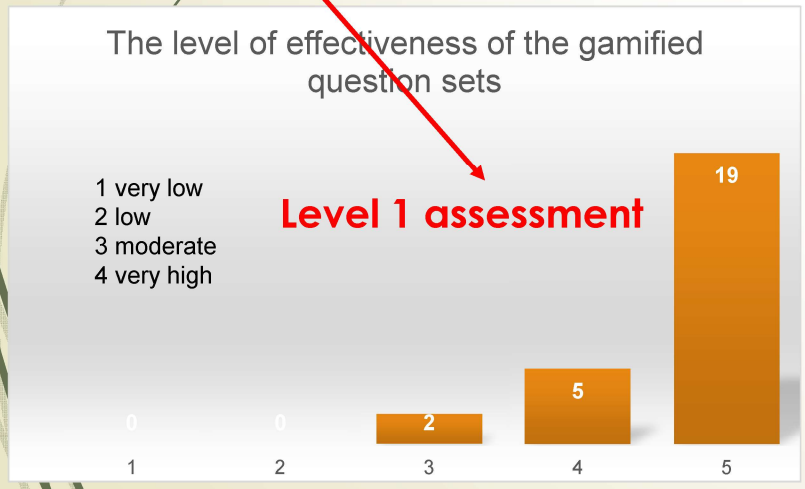
The following challenges may be listed as **disadvantages**:

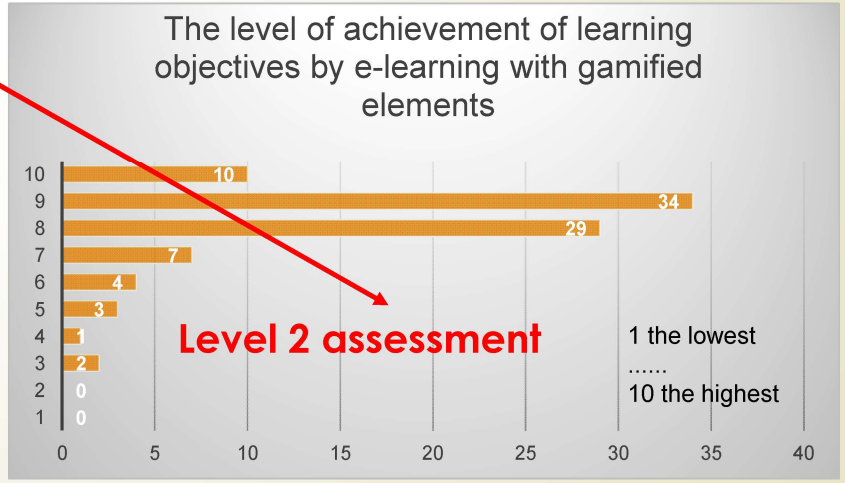
- Can Distract from Key Learning Goals
- Inequity Issues
- Time and Resource Intensive

Evaluation of the implemented approach

In order to facilitate the design of evaluation programs a **methodological assessment tool** was developed, adapted from Kirkpatrick's training evaluation model. It encompass of four levels of evaluation:

Reaction → Learning → Behavior → Results





Conclusions

- Gamification in education is so much more than just an attractive way of learning.
- It's a method backed by psychological principles to make learning a dynamic, engaging and effective journey.
- When used strategically, gamification enables students to learn by doing and approach learning with a sense of joy and discovery.
- Only a small set of game elements makes the big difference in increasing the stimulation of the learners.

A well-designed gamification system doesn't compete with traditional learning, but instead enhances it through purposeful reinforcement.

Thank you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