



Co-funded by the
European Union



POLSKIE STOWARZYSZENIE MENEDŻERÓW BUDOWNICTWA
POLISH ASSOCIATION OF BUILDING MANAGERS



VILNIUS
STATYBININKŲ
RENGIMO
CENTRAS



KlimaHaus®
CasaClima



GRINSCO
GREEN INSULATION SKILLS
FOR CONSTRUCTION WORKERS



enefa
NEMOKAMA FORMAVIMO KLUBAS
AIFST



PROMEA



GRINSCO

Green Insulation Skills for Construction Workers

R3-T3. GUIDE ON THE USE OF TRAINING SCENARIOS AND MATERIALS

ERASMUS+ Programme

Project Code:

2021-1-FR01-KA220-VET-000025876





Contents

1. Introduction - Definition and use of Blended Learning, OER – Open Educational Resources and Simulation Games.	2
1.1 Overview	2
1.2. Use of the term ‘Blended Learning’	4
2. Aims and objectives of the training scenarios	5
2.1. GRINSCO Training Methodology	5
3. Simulation Game Guide	7
3.1. The GRINSCO Simulation Game as a Serious Game	7
3.2. Gamification in Education and Work-Based Learning (WBL)	7
3.3. Rules of using simulation games	8
3.4. Where to find the GRINSCO simulation games	9
4. Training programme	10
5. Conditions for participation, advancement and completion of the programme.	11
5.1. Organization of the training	11
5.2. Evaluation of training	11



1. Introduction - Definition and use of Blended Learning, OER – Open Educational Resources and Simulation Games.

This document introduces the Guide on the use of training material and defines how it is intended to exploit this material in order to reach the GRINSCO training objectives.

After the introduction to e-learning, BL (Blended Learning), OER (Open Educational Resources) and Simulations games, the subjects of the GRINSCO materials are then considered as the basis for the modules contents and resources that can be uses in WBL – Work-Based Learning.

1.1 Overview

Blended Learning (BL) is an educational approach that combines traditional face-to-face classroom methods with online digital media and activities, integrating the advantages of both instructional formats to create a more effective learning experience.

When combined with Open Educational Resources (OER), Blended Learning can offer even greater flexibility and accessibility. Here’s how OER and BL can work together:

Blended Learning (BL) leverages both in-person and online educational methods, enhancing the learning experience by integrating classroom interactions with digital resources. When BL incorporates Open Educational Resources (OER), the potential for accessible, adaptable, and cost-effective education is significantly amplified.

Open Educational Resources (OER) are freely available teaching, learning, and research materials that reside in the public domain or have been released under an open license. These resources can include textbooks, course readings, simulations, games, quizzes, assessment tools, and multimedia applications, all of which can be accessed, used, adapted, and redistributed with minimal or no restrictions.

By combining BL and OER, educators can:

1. Enhance Flexibility and Accessibility: Learners can access high-quality educational materials anytime and anywhere, accommodating different learning styles and paces.
2. Reduce Costs: The use of free or low-cost OER can significantly reduce the financial burden on learners and educational institutions.
3. Promote Active Learning: Digital tools and resources available through OER can be used to create interactive and engaging online activities that complement face-to-face instruction, such as simulation games developed in GRINSCO project.



4. Encourage Collaboration and Sharing: OER enables educators to share and collaborate on educational content, fostering a community of practice and continuous improvement in teaching materials.
5. Adapt to Individual Needs: OER can be customized to meet the specific needs of learners, allowing for a more personalized learning experience.

Integrating OER into Blended Learning models not only supports the delivery of a rich and diverse educational experience but also aligns with the goal of making education more equitable and inclusive.

The literature review has demonstrated the difficulty that others have had in reaching a consensus around the definition of e-learning and blended learning. The lack of definition allows institutions to adapt and use the term as considered useful, and to develop ownership of it. Eight dimensions define the possibilities of e-learning and blended learning:

- delivery - different modes (face-to-face and distance education)
- technology mixtures of many (mainly web based) technologies
- chronology - synchronous and a-synchronous interventions
- locus practice-based vs. class-room based learning
- roles - multi-disciplinary or professional groupings
- pedagogy - different pedagogical approaches
- focus acknowledging different aims
- direction instructor-directed vs. autonomous or learner-directed learning.

The aim of this guide among other purposes is to explain the function of the GRINSCO simulation game, which was developed as part of Result 3 – “Online training simulation scenarios” of the GRINSCO project. It discusses how the game complements the Blended Learning, Open Educational Resources, Simulation games and Learning Units as well as provides general guidelines for its use by both trainees and trainers during the learning process.

This guide intends to:

- Define serious games.
- Explain the role of serious games in education.
- Clarify the concept of gamification and its role in enhancing knowledge acquisition.



- Explain why the GRINSCO simulation game is considered a serious game within the GRINSCO program, incorporating gamification principles.
- Outline the role and responsibilities of trainers when using the GRINSCO simulation game in the educational process.
- Detail the rules governing the GRINSCO simulation game.
- Provide step-by-step instructions for launching and using the GRINSCO simulation game.

1.2. Use of the term 'Blended Learning'

Blended learning today refers to an educational approach that combines traditional in-person instruction with online activities. It integrates digital tools with face-to-face teaching, offering a flexible and interactive learning experience. Learners benefit from the convenience of accessing materials and participating in discussions online while still engaging in direct classroom interactions. This method accommodates various learning styles and schedules, making education more adaptable and accessible.



2. Aims and objectives of the training scenarios

Scenario-based learning is a modern training method that leverages the educational power of narrative and storytelling to enhance work-based training processes. Scenarios are particularly suited for work-based learning because they provide a framework that complements traditional mentoring techniques, making the learning process more engaging and dynamic. This approach also supports learners' personal growth and self-confidence. By immersing learners in a "realistic" context, scenarios allow them to make informed decisions, act on those decisions, and see the immediate consequences in a risk-free environment. This method enables learners to experience "real-life" working situations and collaborative work, placing them in an active role in their own learning journey. Overall, scenarios aim to increase learner motivation, develop new skills, and help learners understand green roof installation by simulating real workplace tasks and procedures.

The specific objectives of R3 involving the creation of a scenario-based online training simulation game for the GRINSCO project are as follows:

- To provide a widely accessible delivery method for the GRINSCO curriculum.
- To increase flexibility in sectoral training, promoting equal and open access to learning opportunities.
- To promote inclusiveness by addressing the training needs of roofers with fewer learning opportunities.
- To enhance the attractiveness of Vocational Education and Training (VET), increasing learners' willingness to participate in continuous professional training activities.
- To support the upskilling of construction workers and other professionals through the simulation game workshops.

2.1. GRINSCO Training Methodology

The proposed teaching and learning methodology is based on the following learning principles:

- The learning is self-directed.
- Learning is experiential (i.e., participants and the trainer learn from one another).
- Time is allowed for reflection and corrective feedback.
- A mutually respectful environment is created between trainer/tutor and participants.
- A comfortable environment is provided.

Training techniques used in this GRINSCO programme include the following:

- *Presentations* - activities conducted by the trainer/tutor or a resource specialist to convey information, theories, or principles (workshops);



- *Case Study Scenarios* - written descriptions of real-life situations used for analysis and discussion (workshops and e-learning);
- *Simulations* - depiction of real-life situations (workshops and simulation games)
- *Small Group Discussions* - participants sharing experiences and ideas or problem solutions (workshops and e-learning).



3. Simulation Game Guide

A simulation game guide paragraph serves as a comprehensive resource designed to help users and mentors to navigate and maximize their experience with a simulation game. It provides instructions, and insights to ensure learners and mentors understand the game's objectives, rules, and mechanics. By offering clear guidance on how to effectively engage with the game, this guide aims to enhance the learning outcomes and overall experience, making it an essential tool for both new and experienced players.

3.1. The GRINSCO Simulation Game as a Serious Game

Serious Games (SG) combine learning strategies, knowledge, and structures with game elements to teach specific skills, knowledge, and attitudes. They are designed with purposes beyond amusement, incorporating educational objectives and not intended solely for entertainment. Educational or serious games prioritize education over entertainment. These interactive games are created primarily to educate and train, and they involve challenges, rewards, and engagement components, leveraging the entertaining aspects of gaming to achieve educational goals. Through these games, players can acquire new knowledge or enhance their understanding of a specific topic. For today's learners, participating in a serious game educational process is straightforward because they are either digital natives or very familiar with digital environments.

3.2. Gamification in Education and Work-Based Learning (WBL)

Gamification involves integrating game design elements into non-game contexts to boost engagement and motivation. In education, gamification can significantly enhance the learning experience. By incorporating game mechanics such as points, badges, and leaderboards, students become more engaged with the material, leading to better retention and understanding. The immediate feedback and rewards provided by gamification, such as earning badges for completing tasks or levelling up after mastering a skill, serve as strong motivators for students to progress and perform at higher levels.

Additionally, gamification makes learning more interactive. Educational tools that use gamification often include simulations, quizzes, and puzzles that require active participation, making the learning process both enjoyable and effective. This approach also allows for personalized learning paths, where adaptive learning systems can tailor the difficulty and type of content to individual student/participant needs, ensuring appropriate challenges for each learner.



Moreover, gamified platforms often incorporate collaborative elements, such as team challenges and social sharing features, encouraging students to work together and learn from one another. This fosters a sense of community and enhances social learning.

In Work-Based Learning (WBL), which integrates regular learning with practical application in a work setting, gamification can make training more engaging and effective. By simulating real-world scenarios, gamification allows learners to practice and develop job-related skills in a safe environment. For instance, a simulation game might help trainees practice decision-making skills, customer interactions, or technical procedures.

Gamification in WBL also provides real-time feedback, enabling learners to quickly understand their strengths and areas for improvement, thus accelerating their learning process. The incorporation of rewards, challenges, and competition can increase motivation among employees or trainees, making them more eager to engage in continuous professional development.

Overall, gamification enhances both education and WBL by making learning more engaging, interactive, personalized, and effective, ultimately leading to better skill acquisition and application in real-world settings.

3.3. Rules of using simulation games

All GRINSCO simulation games follows these rules:

- The learner must select the game's language from the available options.
- The learner must choose the training scenario they wish to play.
- The choices made by the learners will lead to different outcomes and endings, depending on the scenario's progression.
- The actions and responses available will be limited to the predefined options.
- A specific time limit for decision-making at each step of the scenario (e.g., a maximum of 3 minutes) may be set by the trainer.
- Upon completing a training scenario, learners can either repeat the same scenario to achieve a better score or proceed to the next scenario.

Simulation games can be utilized to assess the knowledge acquired by learners from GRINSCO modules. By incorporating real-world scenarios and interactive challenges, these games offer a



Co-funded by
the European Union



practical and engaging way to evaluate how well learners have understood and applied the concepts from their training. This approach not only tests their grasp of the material but also provides valuable insights into their problem-solving and decision-making skills in a simulated environment.

3.4. Where to find the GRINSCO simulation games

To access the GRINSCO Simulation Game, trainers or learners should first visit the GRINSCO website in the “Results” section: www.grinsco.eu.



4. Training programme

Combined teaching methodology containing mixed system of face-to-face learning and e-learning (blended learning) best takes into account the possibilities and needs of the target groups.

The training programme ties up previous experiences of the target group with e-learning and works out a development of competencies in content and usability of modern tools in special didactics of blended learning.

The resulting course will enable stakeholders and interested communities to develop and carry out combined training faster and in a more extensive way and to some degree at a higher, comparable quality level.

Blended Learning using OER Course Phases:

Preliminary Phase:

In the preliminary phase, which starts few days prior to the face-to-face session, participants get basic information about blended learning using OER. They have the first opportunity to get to know their course colleagues and identify themselves as green technologies competent or non-competent learners.

Participants get the necessary information to successfully use those tools and instruments and are supported by experienced tutors.

Face-to-Face Session:

In the face-to-face session, technical and instructional knowledge are transmitted by using different didactical methodologies. Moreover, a project work is initiated to be finalised during the follow-up phase in eLearning and e-tutoring for learners.

Follow-up Phase

The participants continue to work in a collaborative approach on their blended learning course using communication tools and e-learning environment (course using OER). The work will be supported by an online tutor or face-to-face meetings. Regular online sessions give the participants the opportunity to get advice and information from other group members and the tutor and will promote an exchange of experiences and good practice.



5. Conditions for participation, advancement and completion of the programme.

Decision makers at the strategic levels, the executives and staff having to deal with green technologies in their every-day life and the learners who are interested to work with modern green technologies will benefit from the course. All participants will be awarded a certificate of attendance at the end of the training GRINSCO programme, after successfully completing all simulation games under mentor's supervision.

5.1. Organization of the training

High level of flexibility is allowed in the implementation of the training programme. Flexibility refers to selection of methods of delivery as well as to time schedule of implementation. Considering that the programme will be delivered by different educational providers in different countries, the training programme will be delivered in different socio-economic-cultural contexts with different learning requirements. Each individual educational provider will explore the best-fit method of delivery considering the context, the content and accessibility to digital facilities, IT competences of participants.

The basic concept in innovative training is to use experiential learning, meaning that the learning process will use the experience of the participants and will be more efficient in terms of attractiveness and usefulness in the future activities that will be performed by the participants. Most of the participants - target groups are very busy and don't have the time to participate in long formal training programmes. One of the aims of this training programme is to implement a learning solution that will not deprive participants of their free time or interfere too much with day-to-day work obligations in order to increase their skills and abilities. The implementation of the blended learning and OER system includes allocations of different type of learning solutions in order to assure flexibility of training design and development of sustainability of the training scheme.

5.2. Evaluation of training

The training evaluation will be based on the accomplishment of the learning objectives assigned on each module and on other usability methods. Some exercises and tests will be assigned to the learners at the end of the learning programme in order to evaluate the learning level of each specific module. The simulation games developed in GRINSCO programme will be used as evaluation of acquired skills and knowledge, under supervision of mentors and teachers.



Co-funded by
the European Union



Moreover, other parameters concerning the (effective) use of OER will be used in order to measure the training evaluation, such as personal involvement into GRINSCO course or a regular flow of study activities.