



POLSKIE STOWARZYSZENIE MENEDŻERÓW BUDOWNICTWA
POLISH ASSOCIATION OF BUILDING MANAGERS



GRINSCO
GREEN INSULATION SKILLS
FOR CONSTRUCTION WORKERS



GRINSCO

Green Insulation Skills for Construction Workers

R4-T2. GUIDELINES FOR MENTORS

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1. Introduction

This guide offers mentors background information on how to incorporate WBL elements in non-formal training in green insulation techniques and methods provided through knowledge transfer in their facilities. The guide provides following information:

- a) instructions on how to select elements from GRINSCO learning units or WBL schemes in the construction sector to fit in non-formal trainings,
- b) outline the knowledge and skills on green insulation to be acquired by construction workers who participate in non-formal trainings (blended learning),
- c) guidelines on how to effectively monitor, provide feedback and assess learners' acquired skills within a non-formal setting and case studies, readings and model evaluation sheets designed for the specific needs of non-formal, WBL training.

2. Course Planning – Tutorial for Trainers

The GRINSCO course was designed to improve work-based learning VET, by developing and making available educational resources in the form of OER – Open Educational Resources, designed for WBL self or blended learning. Its main objective is to address current and emerging occupational skills needs and to enable VET providers to adapt offerings in novel insulation techniques and boost construction workers' skills and employability in a rapidly evolving labour market.

Specific objectives that were achieved by developing GRINSCO course:

- Enrich the mapping and document the needs of green insulation skills in the construction sector.
- Design an evidence-based curriculum & training content (i.e. WBL educational resources) on green insulation materials and applications to be embedded into existing formal & non-formal training provision.
- Support VET providers to integrate green insulation techniques into their WBL and apprenticeship offerings through teaching materials and guidelines.
- Foster the recognition and integration of relevant occupational requirements into certification schemes.

Completing the courses will lead to an increased awareness and greater knowledge of the concepts of benefits of using modern insulation technologies and solutions. By working through the materials participants become more experienced and skilled in the field of performing insulation works and awareness of modern, sustainable insulation solutions.

The course learners during the course will acquire skills and knowledge how:

- o To recognize need of raising skills in green insulation use.
- o To work with requirements in line with European directives and national standards.
- o To inspect buildings.
- o To identify building materials and systems of green insulations



- To identify building pathology, damages and defects.
- Data collection of all the necessary information, both documentary and within the building (visual information, collection with tools and analytical techniques).
- Interpreting proper application of green insulations.
- To make a qualitative assessment.
- To make a quantitative assessment.
- Coordination of professionals in different subjects.
- Communication skills (oral and writing)
- Soft skills: cooperation at work, coordination and management of work place.

Therefore in the following section the trainer/mentor will find some information, checklists that can help to get started in WBL and blended learning.

It describes in general the processes for tailoring and delivering courses, and explains how one should change a way of thinking about this process when compared with the traditional formal education.

When starting the course, the trainer/mentor may use face-to-face or online activities depending on the learners, i.e. according to their experiences and the knowledge that they have. The online and self-learning activities may be interchanged with face-to-face activities, in order for the learners not to feel isolated and to be encouraged to continue if they get disappointed. The trainers/mentors are acting more as facilitators rather than conventional teachers.

Content is presented to the learner in different formats (text, Power Point Presentation, interactive exercises – simulation games, etc.). Periodically, learners are given opportunities to practice what they have learned. These activities typically contain instructions for discussing or performing an activity and then ask the learners questions about the activity. Learners can then compare their own answers with answers that the course author would have given. In the meantime or at the end of the course, learners will participate in simulation games available for course participants. This will become a way of assessing their skills, knowledge and understanding of the subjects covered by learning units and modules.

Whenever trainers/tutors/mentor prepare their courses, they are making a series of decisions aimed at creating a “design,” or a sequence of activities for what learners will do in a course. When making the necessary decisions the following should be kept in mind: a) meet the needs of the participants (learners, facilitators, tutors, authors, support persons); b) meet the requirements of the learning process; c) take into consideration the technological infrastructure available and d) take into consideration the resources available, especially time needed for completing the course.

One of the most important factors for success is to respond to the personal development needs of target groups/end users. In order to achieve this the following questions are to be answered.

a. Do you know who your learners are? (Learner needs)

Competence levels; IT competences, backgrounds; interest levels; attention spans (self-learning activities); ability to work together in groups; prior knowledge and skills, attitudes and learning experiences; special needs and learning preferences.



b. Where do you want to go? (Course goals)

What would you like the learners to gain out of this course? Foundational knowledge (facts, principles, and concepts), applications (thinking skills, managing complex projects, assessing correct technology for the project, discussing it with clients), integrations (connecting ideas, information), understanding the personal and social implications of this subject, making changes in their work performance, interests, and values. Identify the aims or outcomes that you expect your learner to achieve as a result of his/her participation. These goals are formalized in the framework table as Learning Objectives for each module.

c. How will the learners and yourself know if the objectives have been achieved? (Objectives)

Objectives are behavioural in nature and are specific to performance. Objectives tell what you will be observing in a learner's performance and describe criteria by which you can measure performance against. List the important facts, key concepts, skills, or key terms and glossary that you intend to cover. How will you and the learners know if they have achieved these objectives? You can also prepare an outline with key learning outcomes. What kinds of interaction, feedback and assessment would be appropriate? Objectives represent tangible indicators of performance that tell the teacher, to what extent a learner is progressing in any given task.

d. How are your learners going to reach the objectives? (Content)

What type of learning activities and experiences do learners need? Learning activities can range from easy to hard tasks, depending on learner abilities. Select or develop learning activities that reflect the principles of active learning. What resources will the learners need? How will they have access to the content? What type of reflective communication will help them with the content and connect it to their own lives?

- Web pages
- Videos
- Documents
- External Resources
- GRINSCO materials in pdf versions (Learning Units)
- Simulation games
- Online tools for communication with other participants and tutors/mentors

e. What are the key concepts in this course? (Major topics)

It is important for the trainer to identify 5-7 major key-ideas, topics, or themes in the course. Place them in an appropriate sequence and create a thematic structure (units) for the course.

- Pedagogical basis and theory of the course
- What are the major key-ideas of your course?
- Sort the Learning Units into a chronological order.
- Present your main topics using a directed flow graph.

f. What is the overall structure of the course? (Instructional strategy)

What activities/Learning Units need to come first? How should the course begin, with face-to-face or self-learning activities? Which should be the sequence of activities in the middle of the course - e.g. self-assessment test, simulation game to check knowledge level? What activities do you want to conclude with, i.e. how should the course end? Describe or list a focusing event or attention grabber that will motivate your learner to want to pay attention and learn about what you plan to study. This will depend on learner's interests and backgrounds. List or describe ways in which you can wrap up a lesson. This can include telling the learner the most important concepts which were covered in the module/course, asking them what they thought were the key concepts (or what they learned), or preparing them for the next module building upon what was presented. The key is to leave your learner with an imprint of what you hoped to achieve in any given lesson.

- Introduction meeting.* A face to face meeting about the course goals and content, and the supporting materials.
- Learning material.* to be used by the learners as a WBL, blended learning or in presence, covering a specific Learning Unit.
- Knowledge assessment test.* It could be an quiz or a crossword, or even an activity/assignment that the learners have to do and/or submit to their tutors/mentors, could be executed online.
- Case study – Project.* Learners working in groups or on their own deal with practical situations.
- Simple questionnaire.* Used at mid-point and at the end, seeking student feedback on the course and its delivery.
- Simulation games online.* As a self-assessment or final assessment of the course.
- Final meeting.* A face-to-face meeting about the course completion targeting to unravel possible student's questions and/or misunderstandings. And also to guide the students to future learning needs.

g. What will the learners need to do? (Learning Activities)

Identify the specific learning activities in a particular sequence (e.g. look/do, read, hear/talk, write, search/research, study/do, cooperate/group do, feedback) usually laid out over a span time (e.g. 1-3 weeks). Each learning activity could plan for face to face or/and distant learner's elaboration. List or describe ways in which you will provide opportunities for your learner to practice what you want them to learn. The more opportunities you provide, the better chance they have to master the expected outcomes.

- List and grade a set of face-to-face and online activities according to your learners?

	Activity types	Pros (+) and Cons (-) for the Learners	
		(+)	(-)
1	Panel of Experts/ Professionals	<ul style="list-style-type: none"> - present different opinions - discuss in a structured way - keeps their attention 	<ul style="list-style-type: none"> - may not be good speakers - may present the subjects in a "strange" order.



2	Small Group Discussion	<ul style="list-style-type: none"> - easier to participate - feel comfortable - deals with group consensus 	<ul style="list-style-type: none"> - it is not easy to define the groups - preparation of small tasks or questions for each group
3	Case study	<ul style="list-style-type: none"> - development of problem solving skills - exploration of complex issues - apply new knowledge and skills 	<ul style="list-style-type: none"> - it not easy for the course designer to prepare a well-defined case study
4	Role playing	<ul style="list-style-type: none"> - involves the learners in experimental learning - practice skills 	<ul style="list-style-type: none"> - some of the learners may be too self-conscious and feel threatened
5	Simulation games	<ul style="list-style-type: none"> - thinking without interference by others. 	<ul style="list-style-type: none"> - self-discipline to play the games until positive outcome.

h. What will be the courses' supporting tools?

Apart from the course content a tutor/mentor needs a series of supporting tools for the delivery of the courses. It is possible that some of the tools could also be used in the learning process (eg. Chat, WhatsApp or Facebook groups), therefore there is a need to clearly distinguish between the use of a tool in any case.

i. Are there enough human resources?

In general, the course is mainly the collaboration outcome of four (4) groups that are sharing distinguishable roles:

(a) Administrator: administrates and manages the electronic platform that is used to make available the educational material. Ensures the availability of computer's resources, applies policies of safety, monitoring the backups etc.

(b) Expert of domain/content: develops and adjusts the educational material using authoring tools and follows suitable models for course description.

(c) Tutor/Trainer: delivers the educational material through face-to-face and blended learning sessions. Collaborates with course creators during the development and personalization of educational material for a given group of learners.

(d) Learners: The participants who attend the GRINSCO course.

j. How will you know how the course is going? How it went? (Evaluation)

What kinds of feedback will a mentor/course organizer need? List or describe ways that will help to check for understanding. Assessment and ongoing feedback are necessary for monitoring progress. This can include questioning, conferencing, or reflection writing.

- Define the degree of achievement of the course objectives.
- Are the proposed activities effective enough or do they have to be changed?
- Is the interaction among tutors/mentors and learners effective enough?
- Are the learners satisfied with the way of teaching?
- List a set of ways that may be used for feedback and evaluation.

1	Quick Assessment	You may ask your learners (online or offline) about a simple question. For example you may ask them about what is the most important issue that they have learned in the GRINSCO session.
2	Post- questionnaire	An online or offline questionnaire (quiz, crossword, fill in the blanks etc.) that is addressed to the learners trying to record the knowledge that raised up after the course.
3	Outside observers	Try to ask someone that is not involved into the design of the course.
4	Learner's interview	You may think about using online interviews. The learners may take interviews each other as well.
5	Simulation games results	You may review results and how much time was needed to complete the simulation games.

k. What you think worked, or what did not work, and why (Reflection)

This section is to be completed after the course. It is meant to give some insight into practice and will hopefully help to make adjustments and modifications where necessary.

List a set of tools that may be used for collecting reflection information:

1	Observation sheet	The tutor/mentor is keeping some notes during the course. It may be a kind of daily journal
2	Questionnaire	It is addressed to the tutor/mentor and it is asking about the things that worked and the things that did not work.
3	Observation	You may observe some activities during the face-to-face learning process and ask for comments and remarks during the course.

3. Case studies

The GRINSCO project focuses on addressing the skills gap in green insulation techniques within the construction sector. It aims to enhance vocational education and training (VET) through work-based learning (WBL), equipping workers with sustainable insulation skills. The project promotes improved employability and supports EU green goals. By integrating green insulation into educational curricula and offering online resources, GRINSCO helps construction workers adapt to new industry demands.

The following case studies will allow mentors to demonstrate how participation in the GRINSCO course directly addresses skill gaps in green insulation techniques, critical for the future of sustainable construction. These studies highlight challenges faced by workers in adapting to evolving industry demands, which the GRINSCO course is designed to resolve. By showcasing how the course's curriculum enhances vocational skills and employability, mentors can effectively justify the necessity of taking part, particularly for those looking to remain competitive in the green construction sector.

The following case studies provide valuable examples for mentors to justify the need for participation in the GRINSCO course, particularly within the context of sustainable construction and green insulation practices. Each case highlights national efforts to integrate climate literacy and energy-efficient practices into the vocational education and training (VET) systems of Denmark, Belgium, and Germany. By addressing gaps in green skills, these studies show how GRINSCO can help participants contribute to achieving EU climate targets, thus emphasizing the importance of enrolling in the course for future-ready skills development.

Case Study 1

Denmark

Denmark's Climate Act aims for a 70% reduction in greenhouse gas emissions by 2030, aligning with the European Performance of Buildings Directive to promote nearly zero-energy buildings (NZEB). The construction sector is heavily involved, with unions advocating for sustainable practices, green job creation, and workforce training, while promoting energy-efficient renovations, low-carbon materials, and fossil fuel-free building sites. Denmark's VET system, jointly governed by social partners, combines school-based learning and workplace placements, offering pathways to higher education and industry qualifications, with unions and employers involved in curriculum development and monitoring. Denmark's VET system integrates climate and energy literacy, particularly in electrician apprenticeships, though unions vary in views on adequacy, with some calling for stronger links between energy efficiency and climate change in the curriculum.

Case Study 2

Belgium

Belgium's VET system has seen minimal changes, facing labour shortages and emphasizing mentor training for better recruitment and retention. Social partners, including Constructiv, govern VET, with dual systems that combine college and workplace training, focusing on construction but excluding building services like plumbing and electrical work. Constructiv develops occupational profiles used to guide educational programs, with a strong emphasis on appropriate attitudes and cross-occupational coordination, important for NZEB and retrofit projects. While detailed CVET materials address low energy construction (LEC), climate literacy is not yet fully integrated into training. There is potential for greater workforce participation in climate literacy initiatives through the involvement of unions and educational institutions.

Case study 3

Germany

Germany has a comprehensive approach to energy efficiency, reducing GHG emissions, and modernizing its VET system. Starting with early energy-saving legislation in 1977, Germany has implemented regulations to improve building efficiency and meet national and EU climate targets. Its dual VET system, regulated by social partners, integrates practical, theoretical, and civic education across over 20 construction occupations, with a focus on climate and energy literacy. The Build Up Skills program addresses gaps in the workforce's ability to meet low energy construction (LEC) needs, leading to new CVET programs like Certified Renewable Energy Specialist training. Despite small firm dominance, the system supports lifelong learning and advanced qualifications through employer-funded training levies.

For more information, visit: <https://greenerjobsalliance.co.uk/wp-content/uploads/2023/08/Build-it-Green-final-report-Aug-1-2023.pdf>

4. Final thoughts and comments.

The "Guidelines for Mentors" document will significantly aid mentors and tutors in delivering the GRINSCO course to participants and learners. This comprehensive guide provides detailed instructions and best practices for effectively facilitating the course material, helping mentors understand the core objectives and methodologies of the program. It includes strategies for engaging learners, addressing their individual needs, and managing different learning styles within a group. By offering clear guidance on the use of simulation games and learning units, the guide ensures that mentors can create a dynamic and supportive learning environment. Ultimately, this resource empowers mentors and tutors to deliver the course more confidently and effectively, enhancing the overall WBL experience for all participants.

Collecting feedback from GRINSCO course participants is crucial for several reasons. Firstly, it enables the personalization of course content to better suit the needs of specific groups of learners. Understanding the unique challenges and preferences of different learner demographics allows instructors to tailor the material, ensuring it is relevant and engaging for everyone. Secondly, gathering feedback during and after the course provides valuable insights into the effectiveness of the training. Real-time feedback can highlight areas that need immediate adjustment, while post-course evaluations can inform long-term improvements. This continuous feedback loop helps maintain high standards of WBL and blended learning education and ensures that the course evolves to meet the changing needs of its participants.

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