



**Enriching Circular use of OER for Education**

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Training Materials for Staff  
Development on the  
ENCORE approach

Feb 2025

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## Introduction

This Training Materials document is designed to support teachers, trainers, and education professionals who wish to explore the world of Open Educational Resources (OERs) and leverage the ENCORE system to enhance their courses and support student skill development. ENCORE offers a range of tools and strategies to help educators design impactful learning experiences and align their teaching with global challenges. The ENCORE Approach uses artificial intelligence to simplify the search and integration of high-quality OERs, supporting the design of learning paths that develop competencies relevant in today's rapidly changing world. By aligning resources with the Digital, Green, and Entrepreneurial (DGE) frameworks from the European Commission, ENCORE helps educators build courses that promote digital literacy, sustainability, and innovation—key skills needed for digital transformation, addressing climate change, and fostering post-pandemic recovery.

With three key technological components—a DGE-aligned search engine, an OER aggregation database, and pedagogical tools based on frameworks like Bloom's Revised Taxonomy—ENCORE not only aids in resource discovery but also encourages reflective teaching practices and supports thoughtful learning design. These tools foster professional growth and create dynamic learning environments where students can engage with real-world challenges.

This training resource will guide you through the foundational concepts of OERs and Open Education, provide an overview of the DGE competence frameworks, and outline practical strategies for integrating ENCORE into teaching and training. The materials are designed for higher education lecturers, VET educators, and company trainers, offering a structured blend of synchronous and asynchronous activities. You'll learn how to design learning scenarios, set meaningful objectives, and plan assessment activities that align with your desired learning outcomes. This document is offered as a descriptive guide supplemented by access to all materials available in Open Access on Zenodo. As will be seen, for each of the three perspectives of adoption by institutions and educators explored in depth in the supplementary [ENCORE Pedagogical Guidelines- Final Version](#) (Raffaghelli & Crudele, 2025) document, a specific Zenodo record has been created. Each will offer a) a brief description of each approach; b) a Moodle backup file, easily imported into their Moodle environment; and c) an overview of materials, activities, and tools. This allows flexibility in adoption, enabling trainers to integrate the ENCORE approach directly into their instructional workflows and professional development programs. On the other hand, it orients the reader to discover more about the design and use of these same materials.

Above all, ENCORE is not just a tool but a collaborative ecosystem. Its real strength lies in the way educators use it, experience it, and shape it through ongoing feedback and innovation. By incorporating ENCORE into their practice, educators become part of a growing community dedicated to transforming and enhancing education in an ever-changing world.

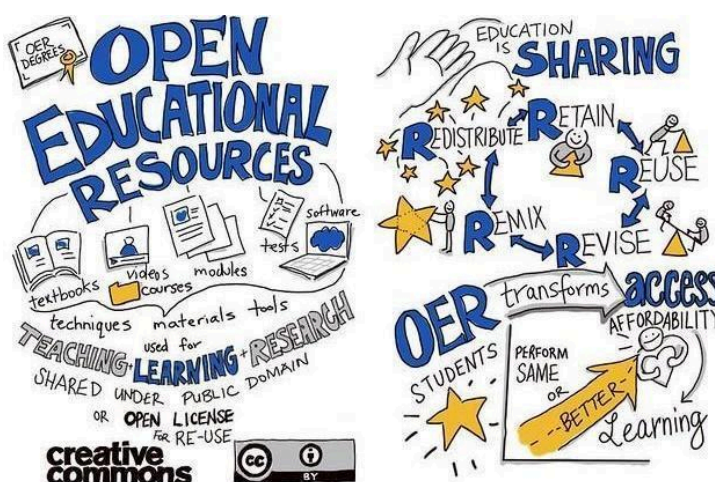
## Why train at OERs?

This is an initial question that every educator, university teacher, and VET trainer might ask themselves when talking about Open culture and the use of Open Educational Resources (OERs).

Training educators in Open Educational Resources (OERs) is a transformative journey that reshapes the very essence of modern teaching. The concept of OER was coined during UNESCO's 2002 Forum (see UNESCO, 2011) on the Impact of Open Courseware for Higher Education in Developing Countries in response to the impressive amount of educational content being offered freely and openly for anyone to use through the Internet.

As Wiley and Hilton (2018) explain, OERs empower users to *retain, reuse, modify, remix, and redistribute* (the 5Rs) learning materials, creating a dynamic environment where content evolves through collaboration and creativity (see Figure 1). The William and Flora Hewlett Foundation (2013) highlights that this approach democratizes education by providing free, high-quality resources to learners worldwide, breaking down traditional barriers, and ensuring equitable access to knowledge (The William and Flora Hewlett Foundation, 2013).

Figure 1. Visual representation of the OER characteristics.



Source: Giulia Forsythe. <https://brocku.ca/library/oer/>

Imagine a classroom where every student benefits from adaptable materials that meet their unique learning needs—a vision that aligns with UNESCO's (2002, 2011) call for unrestricted, innovative educational practices. By training teachers to harness the power of OERs, we not only enhance pedagogical methods and foster learner-centered experiences (Brown & Adler, 2008; Constantino & Raffaghelli, 2021) but also build a vibrant, shared repository of collective knowledge that continuously enriches the educational landscape.

From then on, the use of OER has been considered a valid strategy to renew educational practices (Conole, 2013b) based on the discussion about learner-centered approaches supported by access to free knowledge beyond the curriculum (Brown & Adler, 2008; Constantino & Raffaghelli, 2021).

## What do we mean by Open Education?

We live in an "open" reality ("The Open Definition," 2024), characterized by free access to and sharing of knowledge, a principle essential for scientific processes. OERs are at the heart of the concept of "openness," especially in "Open Education," an umbrella term that encompasses several

meanings, from resources to practices, from institutionality to individuality of educational growth (EU Science HUB, [https://joint-research-centre.ec.europa.eu/what-open-education\\_en](https://joint-research-centre.ec.europa.eu/what-open-education_en)).

Open Education has evolved from the initial embrace of Open Educational Resources (OER) as a strategy to democratise education—transforming what was once exclusive into a publicly accessible treasure trove of knowledge (Andrade et al., 2011; UNESCO, 2002, 2011)—to a broader philosophy that champions innovative teaching practices and institutional collaboration. As Inamorato et al. (2016, p. 10) note, “open education is a way of carrying out education, often using digital technologies” to remove barriers and make learning accessible and customisable for all.

Today’s dynamic, digital, and AI-mediated reality, accelerated by the pandemic and emerging tools like ChatGPT (Tlili et al., 2023), challenges educators to rethink their roles and adopt Open Educational Practices (OEP) that extend beyond mere resource sharing (Ossiannilsson et al., 2020). It is not only (or not only) about MOOCs and OERs but about the democratic opening of education, the modernization and innovation of our higher education systems in Europe through the use of digital technologies (Ossiannilsson et al., 2020).

Bolstered by initiatives such as the EU’s Digital Education Action Plan (European Commission, 2023) and the evolving definition of openness (The Open Definition, 2024), Open Education now represents a transformative approach that not only provides access to quality materials but also fosters a culture of lifelong, inclusive, and resilient learning.

**To learn more about OER and Open Education, see *Annex I* of [The ENCORE Approach](#) (Raffaghelli et al., 2023).**

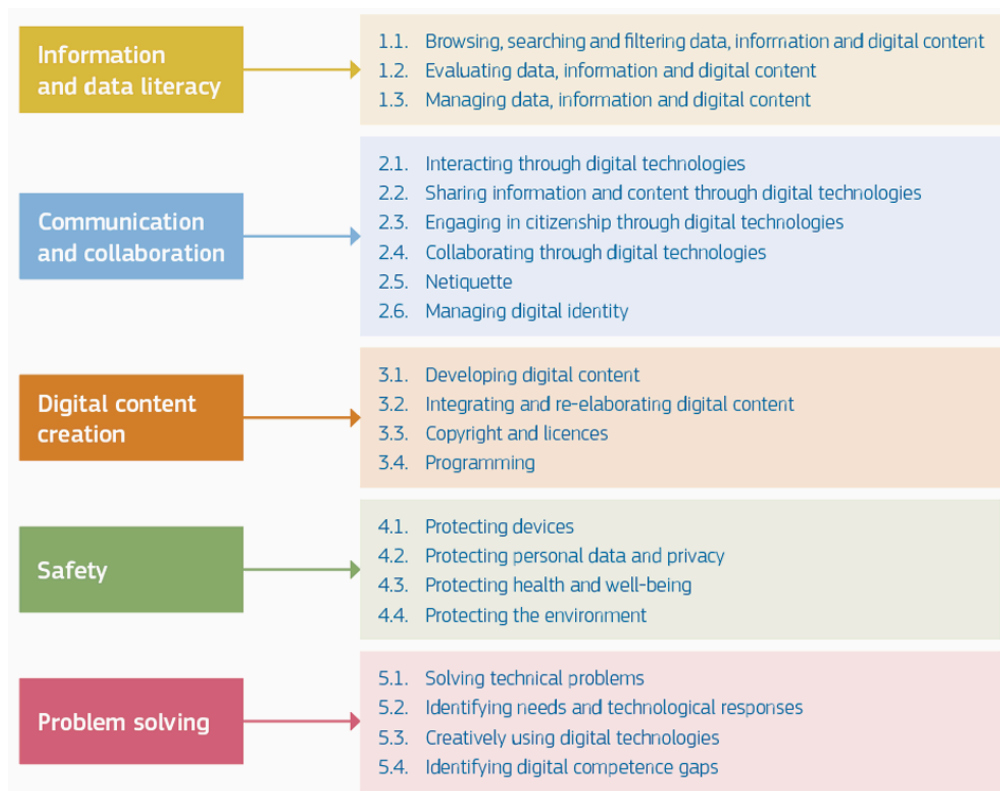
**To deepen the strategies to engage teachers/trainers/educators and learners in the usage of OERs, see *Annex II* of [The ENCORE Approach](#) (op. cit.).**

## Why focus on Digital, Green, Entrepreneurial Competencies?

The ENCORE Approach aligns with three essential competence frameworks crucial for lifelong learning and societal development in line with EU policy. These frameworks - Digital, Entrepreneurial, and Green Competence - are central to fostering digital transformation, the green transition, and an inclusive, innovative society.

**The Digital Competence** is underpinned by the DigComp 2.2 framework (see Figure 2), which outlines 21 competencies across five key areas, supporting the improvement of citizens’ digital skills (Vuorikari et al., 2022).

Figure 2. The DigComp 2.2 conceptual reference model.



Source: Vuorikari et al., 2022, p. 4.

**The Entrepreneurial Competence**, guided by the EntreComp framework, identifies 15 competences fundamental to cultivating entrepreneurial skills, recognising and certifying skills, and value creation (Bacigalupo et al., 2016).

Figure 3. The EntreComp reference model.



Source: [EU Science Hub - Competence areas and learning progress.](#)

**The Green Competence**, supported by the GreenComp framework (Bianchi et al., 2022), focuses on sustainability, promoting empathy, responsibility, and environmental awareness in learners.

*Figure 4. The GreenComp reference model.*



Source: Bianchi et al., 2022, p. 16.

**Concluding thoughts.** A relevant reflection after this discussion is that every educator should consider how to introduce through her/his educational interventions at least one of the above-mentioned competences to align with the EU contextual development. The ENCORE Approach can become relevant support in this endeavour.

## ENCORE Approach

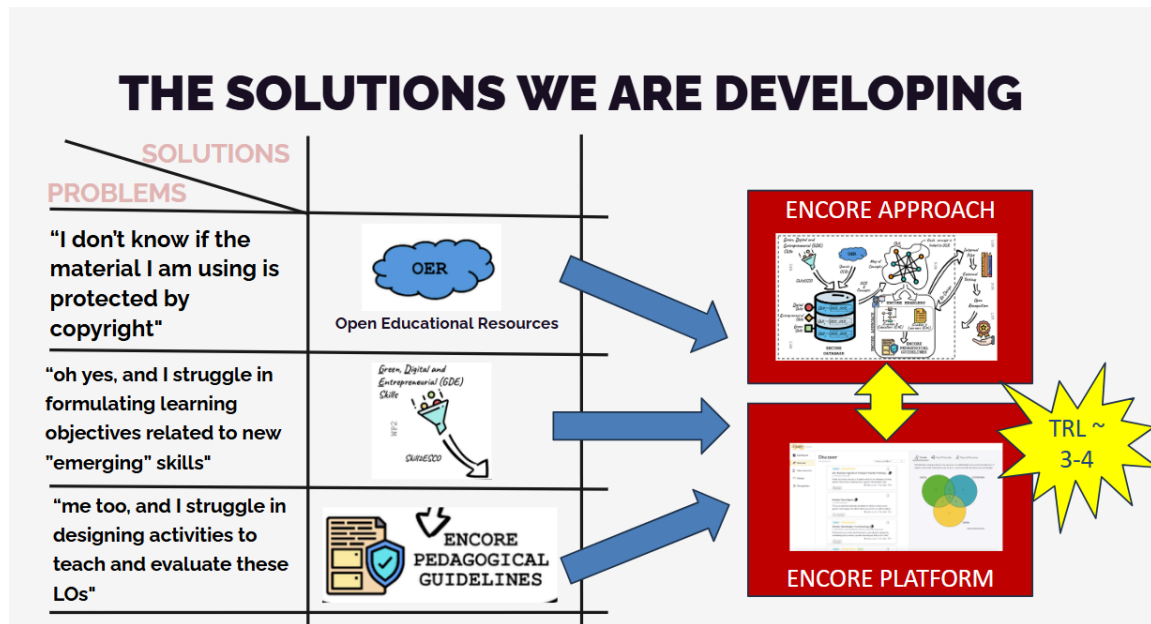
In our current reality, which is constantly changing and increasingly open to the global, new challenges and needs emerge, especially when it comes to teachers, who are faced with needs that cannot be taken for granted.

They constitute a pillar of the quality of education and student learning (Darling-Hammond et al., 2005, 2017). Improving teacher training is recognized as a priority in international educational policies (OECD, 2005, 2014, 2018, 2019) and European strategies (European Commission, 2007; European Council, 2009, 2014, 2017, 2020). Teachers must challenge themselves with evolving contexts, especially in line with the ability to navigate and use high-quality resources for methodologies and practices.

From this perspective of Open Education and OERs, the ENCORE project (ENriching Circular use of OeR for Education) comes into the picture (<https://project-encore.eu/>). This Project was funded by the European Union and launched in 2022 by the University of Pisa as Project Coordinator. ENCORE is an innovative project that brings together cutting-edge data-driven techniques and a qualitative pedagogical approach to promote the use of OERs and contribute to the teaching and recognition of core competencies by harnessing the knowledge embedded in OERs themselves. Starting from the problems emerging large in this field, an answer was sought with ENCORE (FBK, 2023) (Figure 5).



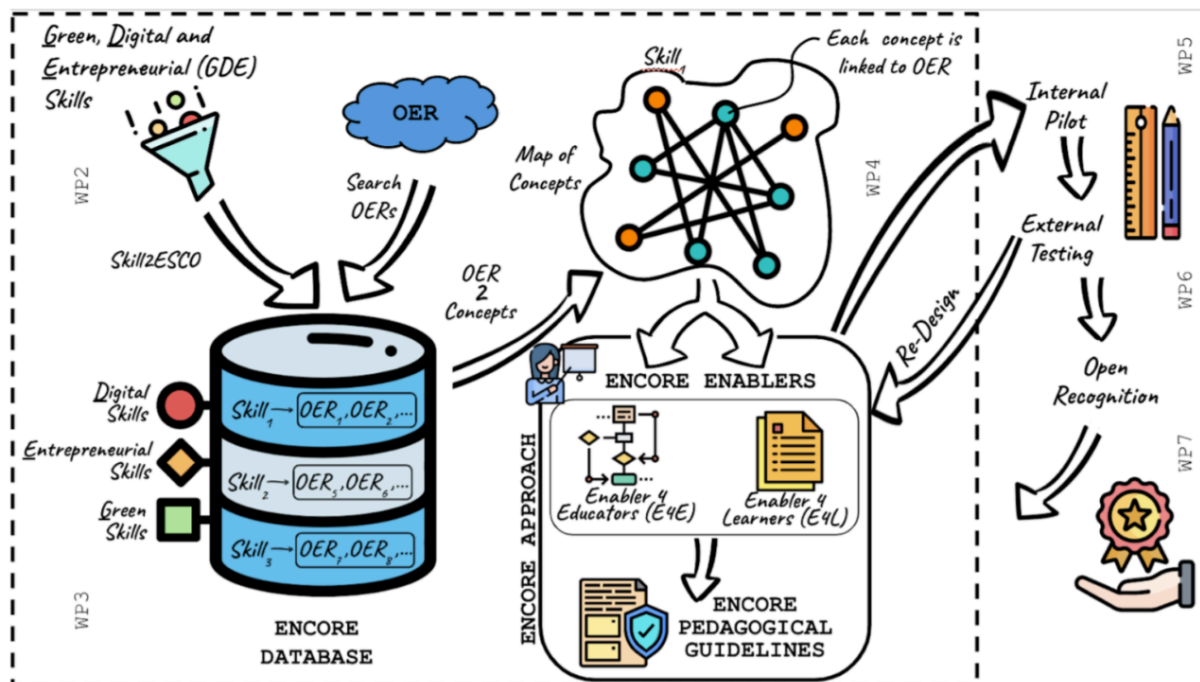
Figure 5 - Problems and solutions that led to ENCORE



Source: [ENCORE Project](#)

The ENCORE approach combines data-driven tools and natural language processing (NLP) techniques to guide teachers toward course-appropriate instructional design, with learning outcomes linked to skills that will help students address the macro-trends of digitization, climate change, and the challenges of post-COVID economic recovery (Figure 6).

Figure 6 - ENCORE Scheme



Source: [ENCORE Project](#)

To do this, ENCORE aims to source high-quality OERs, classified according to another source of textual knowledge, namely the competencies of the ESCO framework (the European Skills, Competencies, Qualifications, and Occupations framework). ENCORE also aligns with three key competency frameworks to address the challenges of digitization, green transition, and an inclusive society:

- Digital skills (DigComp): The skills needed to thrive in a technologically advanced society, addressing emerging issues such as artificial intelligence, virtual reality and sustainability.
- Entrepreneurial skills (EntreComp): Entrepreneurial value creation and inclusive learning in formal and informal settings.
- Green skills (GreenComp): Sustainability education to develop ethical thinkers in line with the EU's climate reflection goals.

Thus, the ENCORE database will be organized with OER on the one hand and with relevant competencies on the other, to adapt to the different situations of students, future educators, educators, teachers, and trainers for the design of courses/pathways functional to achieve different educational and training needs (Raffaghelli et al., 2023).

## Designing with ENCORE

The ENCORE project embraces an open and flexible approach, allowing institutions and individual educators to integrate its tools and methodologies into their unique teaching and learning contexts. Whether you are part of a university, a vocational training center, or an independent learning initiative, ENCORE can adapt to your needs.

In the following sections, we present a series of organized and tested interventions produced during the years of the ENCORE Project that can inspire you to design and implement your own ENCORE-based learning experiences. These examples serve as a practical starting point, showcasing how ENCORE can support diverse educational scenarios while encouraging customization and innovation.

For accessibility and ease of use, all materials and backup of the interactive Moodle, with H5P, materials, and tools are freely available in **Open Access on Zenodo (record: Crudele & Raffaghelli, 2025 [Community])**.

To offer more direction and guidance in navigating the Zenodo Community and the various records, we recommend **first** taking a look at the **[“ENCORE Training Materials Documentation” report](#)**.

## Crash Course

The first intervention developed to introduce educators to ENCORE is a focused and structured “Crash Course” designed for quick immersion into the platform’s potential. This format is ideal for teachers, academics, and trainers, as it can be delivered in a single day or used asynchronously. The course explores multiple pathways to engage with ENCORE’s tools, offering tailored options to suit different learning objectives and contexts.

Before going into specifics, the following is a general overview of the planned activities for the Crash Course (Table 1).

Table 1 - Overview of the Crash Course activities and their estimated duration.

Activities	Description	Estimated Duration
Self-assessment tests	Initial and final reflection on OER adoption and digital, green, and entrepreneurial (DGE) competencies.	20-30 min
Getting Started! Presentation (Faculty version)	Overview of OER adoption, key ENCORE resources, case studies, and templates to support integration.	40-60 min
Getting Started! Presentation (VET version)	Exploration of digital, green, and entrepreneurial skills in connection with OER practices.	40-60 min
The ENCORE System in brief	Hands-on activities covering ENCORE's platform, functionalities, and best practices through real-life examples.	60-90 min
Use Case Analysis	Examination of two real-life learning scenarios with reflection activities to adapt them to participants' contexts.	60-90 min
Course Design Activity	Practical exercise using OpenMed templates to draft an open course outline, integrating ENCORE tools and guidelines.	90-120 min
Final Reflection & Feedback	Completion of Your Opinion on the Session survey (long or short version) to assess user experience and technology acceptance.	20-30 min

For example, the initial and final self-assessment activities help participants reflect on their openness to OER and the development of digital, green, and entrepreneurial skills. Depending on the audience, these assessments can emphasize either OER practices (*How Open I Am/How Open Can I Be*) or in a DGE-oriented version (*My Digital, Green, Entrepreneurial Approach to Teaching/Training*), allowing for a more personalized learning experience.

Subsequently, the supporting materials are equally adaptable to meet all different needs. A concise *Getting Started!* presentation introduces the theories and practices behind OER adoption for faculty and students, enriched with real-life case studies and practical links to key ENCORE resources, questionnaires, and different templates. For a deeper dive, a second presentation focuses on DGE skills and the DigComp Framework, encouraging reflection on how to foster these competencies through OER integration in professional learning activities.

To enhance interactivity, the materials include H5P modules that balance theoretical insights with hands-on practice—particularly useful for asynchronous learning. These modules are divided into two key moments:

1. *The ENCORE system in brief*: tries to answer the question “Why talk about ENCORE?” and focuses on the ENCORE system and the platform itself, featuring examples from European project partners like the University of Pisa, the University of Salamanca and the Bruno Kessler Foundation (FBK) engineering team, with related activities to explore the system's functionalities.
2. *Use Cases*: two real-life learning scenarios (see Figure 7), each accompanied by activities designed to encourage critical analysis and reflection on how to adapt the scenarios to participants' teaching contexts.

Figure 7 - Use case example.

Use Case 1	Learning Scenario Title	Spotting Fake News
	Learning Objective	Students will be able to critically analyse and evaluate various sources of information to identify and differentiate between objective news and fake news. The verbs analyse and "critically evaluate", aligns with higher-order thinking skills in Bloom's Revised Taxonomy and focuses on the learners ability to check information sources.
		We can think about an interactive course module aimed at empowering university students to navigate the complex digital

Participants are also guided through a practical activity to design their own open course or training program. Using templates from the OpenMed project - Opening up Education in South-Mediterranean countries (<https://openmedproject.eu/home/>) educators can draft their course outlines and refine them through ENCORE's OER navigation and design guidelines. Ultimately participants can claim their badge to certify their work (*ORCA Pod: ENCORE Creator - Achievements*). To conclude, participants complete a reflective questionnaire on the user's reflection and perception of the interaction with the ENCORE platform (*Your Opinion on the Session*) with two versions available:

1. A longer version, including exploratory questions on the advantages and disadvantages of the platform and general interest in it and, subsequently, 20 items adapted from the UTAUT model to assess technology acceptance.
2. A shorter version with the same initial exploratory questions and a focus on the transformative impact of ENCORE on participants' teaching practices, emphasizing practical reflection on the system's potential for fostering high-quality, open education.

Together, these resources form a dynamic and adaptable learning journey, empowering educators to confidently explore, experiment with, and integrate ENCORE into their teaching practices while contributing to a growing community of innovators in open education.

All "Crash Course" materials and the specific Moodle backup + H5P are available at the present **Zenodo record** (Crudele & Raffaghelli, 2025a [[Crash Course Workflow](#)])

## Intensive Course

The second type of intervention is classified as "Intensive Training", designed as an extended learning experience ideal for students, particularly undergraduates. Spread over multiple days, this format progressively builds an understanding of OERs and culminates in the creation of new open resources, fostering active participation in the open and collaborative education ecosystem.

Two distinct pathways were developed to cater to different learning needs: 1) a shorter, focused track aimed at deepening students' knowledge of OERs and the DGE frameworks and 2) a more comprehensive, multi-day track guiding students through the entire process of designing and publishing an OER.

Before going into specifics, the following is a general overview of the planned activities (Table 2).

Table 2 - Overview of the two approaches of Intensive Course, with the activities and their estimated duration.

Activities	Description	Estimated Duration
<b>Intensive Course focusing on DGE</b>		
Self-assessment test	Use of How Open I Am/How Open Can I Be to reflect on openness to OER.	20-30 min
Introduction to OER, DGE & EU Policies	Presentation on OER, DigComp Framework, and EU policies for open education.	30-40 min
Guided exploration of ENCORE	Navigate the ENCORE platform and explore its main features.	45-60 min
Final Reflection & Feedback	Your Opinion on the Session questionnaire, focusing on advantages/disadvantages and impact on teaching practices.	20-30 min
<b>Intensive Course focusing on OERs</b>		
Self-assessment test	Use of How Open I Am/How Open Can I Be to reflect on openness to OER.	20-30 min
L1 – SEARCH	Activity: Introduction to instructional design using Bloom's Taxonomy and the Open Approach. Research and analyze OER platforms to identify relevant resources.	120 - 180 min
L2 – FIND AND INTEGRATE	Activity: Design an Open Educational Unit (UDA) using ENCORE's guided tools for OER creation.	120 - 180 min
L3 – RECYCLE AND REUSE	Activity: Review and adapt the UDA to ensure its openness, focusing on reusability and remixing.	120 - 180 min
L4 – SHARE	Activity: Present the UDA, final reflection and complete the How Open Can I Be? questionnaire. Upload resources to ENCORE and other platforms (e.g., OER Commons).	120 - 180 min
Final Reflection & Feedback	Administer the Your Opinion on the Session questionnaire to evaluate the impact of the training experience.	20-30 min

The first approach begins and ends with self-assessment tests adapted to students' contexts, measuring their understanding of OER concepts. In between, participants engage with a brief presentation on OERs and relevant EU policies, followed by a guided exploration of the ENCORE platform. This exploration includes both resource discovery and initial course design activities. The process concludes with a reflective self-test to consolidate insights gained from the platform experience.

In the second approach, after completing the initial self-tests and presentations on OERs and the Open Approach, students participate in an activity analyzing various OER platforms to collect resources of interest. This analysis informs the design of a personal learning unit, developed using templates and formats that encourage openness and reusability (e.g., ENCORE creation and reuse of OER section ("Create"): <https://dev-e4e.polyglot-edu.com/create> and OER Commons templates: <https://oercommons.org/>). The final step involves guidance on finalizing and uploading the created

resource in Open Access, ensuring students actively contribute to the broader OER community. By alternating moments of knowledge building, practical exploration, and hands-on creation, this intervention empowers students not only to understand the value of OERs but also to become active creators and sharers of knowledge in the open education landscape.

All “Intensive Course” materials and the specific Moodle backup + H5P are available at the present **Zenodo record (Crudele & Raffaghelli, 2025b [[Intensive Course Workflow](#)])**

## Self-paced Course

Another possible intervention can be inspired by the self-managed learning environment produced for the ENCORE project itself. This e-learning course, created on Moodle and then shared and available in Open Access mode on Zenodo (Crudele & Raffaghelli, 2025 [[Community](#)]), has been designed to provide HE teachers, VET trainers and corporate trainers with an open and freely accessible e-learning set to learn how to adopt the ENCORE approach.

Starting from this aspect, all the essential structural points of the approach will be described, with references to materials, activities and tools, to offer a possible starting point to support future and potentially functional integrations of ENCORE in one's institution and professionalism.

To get an initial overview of the configured environment, you can take a look at the [video preview \(ENCORE Self-paced Course Trailer\)](#) of the ENCORE self-paced course created by the UNIPD team.

A general outline of the course content (Table 3) will be provided before going into the details. Here you can find initial indications of activities and timing to start thinking about the approach.

The self-paced course is structured as follows:

Table 3 - Overview of the Self-paced Course activities and their estimated duration.

Activities	Description	Estimated Duration
1. General Forum	The forum was left open to sharing opinions and doubts.	
2. Presentation:	A short questionnaire about Provenance and Expertise	2 min
3. How Open I Am?	A questionnaire with 21 questions about OER Knowledge and Awareness	30 min
4. My Digital, Green, Entrepreneurial Approach to Teaching/Training	A questionnaire with 12 questions about DGE Knowledge and Awareness	25 min
5. Open, Digital, Entrepreneurial and Green Policies	H5P about Open Education, the main Frameworks and policies about Open and DGE Competencies	60 min
6. Pedagogical Guidelines for the ENCORE Approach	H5P about training at OERs and at the ENCORE Approach to push professionalism	60 min

7. Do you know ENCORE?	H5P to know the ENCORE Platform, with FBK's usage tutorial	60 min
8. Using ENCORE	H5P about design with ENCORE and guide the activity using specific materials, "Learning Scenario Template" and "Learning Scenario Design - Self Assessment Tool"	120 min
9. ENCORE within your institution	Reflection on the best institutional strategy to support the integration of ENCORE into the institution and professionalism	60 min
10. Promoting Open Recognition	activity about describing the contribution carried out and claiming the Open Badge	30 min
11. Your Feedback about ENCORE	4 final questions about Usefulness, Intention to Use, Most Likely and Least Likely, and some more Thoughts	10 min
12. How Open can I be?	A questionnaire with 21 questions on the final level of OER Knowledge and Awareness	30 min
13. Self-Paced Course Usability	6 questions on reflection on the Content of the Course, Navigation of the Course, Overall Experience, Suggesting for the Course, and Improvements	15 min

After this first overview, we will now go into more detail about activities, materials, and implementable tools.

The course could open with an interactive *General Forum* in which to share opinions and ideas and initiate a collaborative space for developing an open and shared community of practice. From there, participants should answer a short questionnaire to frame background and area of interest/experience (Table 7), and then move on to more detailed tests on openness to OERs (*How Open I Am*) and the development of digital, green, and entrepreneurial skills (*My Digital, Green, Entrepreneurial Approach to Teaching/Training*). These initial questions can help participants assess their current position right away and anticipate how different topics might unfold for their professional practices.

To enrich learning with engaging and interactive theoretical information, it is useful to think about integrating interactive H5P sessions with hands-on reinforcement activities. Several interactive presentations in H5P were designed for the occasion of the self-paced environment:

1. The first H5P (*Open, Digital, Entrepreneurial, and Green Policies*) presentation is focused on an introduction to Open Education, the OpenEdu Framework, and all the main policies related to ENCORE's key competences, i.e., Digital, Entrepreneurial, and Green. This moment was accompanied by small interactive activities to fix the main concepts.
2. The second presentation (*Pedagogical Guidelines for ENCORE Approach*) drew on the [ENCORE Pedagogical Guidelines](#) document previously produced by the UNIPD team (Raffaghelli & Crudele, 2025), with a focus on the declination of Open Education, the OpenEdu Framework, and the DGE Framework to start thinking about educational and professional practices. Here, too, several activities were designed to guide reflection on the concepts presented.
3. Next, a focus on the platform (*Do you know ENCORE?*) offers some information on the project and its main objective, and then a tutorial by FBK on the ENCORE Approach (Figure



8), which well summarised the requirements that led to the conception of the platform and the resolutions offered with it. This was followed by some open-ended questions to focus on the 4 levels of development of the platform.

*Figure 8 - ENCORE Enabler FBK*



These sessions are designed to connect theory with training and classroom strategies, providing new insights into educational environments. From here, you can reinforce the idea of guiding students through a tutorial on creating personalized learning scenarios using the ENCORE platform (Using ENCORE). At this point, it is suggested that you provide them with a simplified scenario design template, suitable for their teaching contexts and encourage them to use a self-checklist for evaluating their scenarios. For simplicity, one can use the simplified scenario design model (Use of ENCORE) proposed below (Figure 9) and the checklist in Table 8. The latter tool is designed to guide a moment of analysis and self-assessment on the output realised, taking note of the educational scenario and activating reflection on the current and future construction of a learning path.

*Figure 9 - Template to design your scenario leveraging the ENCORE platform*





# Template to design your scenario leveraging the ENCORE platform

**Author:**

**Institution:**

**Learning Scenario Title**

**Description of your Idea** (Describe your learning scenario idea in up to 5 lines).

**Resources found**

[Search and report here a **screenshot** of the resources found on ENCORE about your learning scenario theme]

**Learning Objective**

[The objectives of the activities in terms of student achievement have been defined. Here are some suggestions.]

- Try to answer the following question: **What objective(s) do I want to set for the learners?**
- **Use a verb referring to Bloom's Revised Taxonomy (Bloom, 1956; Conklin, 2005; Krathwohl, 2022)** (check the image below). Please consider that a statement of a learning objective contains a verb (an action) and an object (usually a noun). The verb generally refers to [actions associated with] the

intended cognitive process. The object generally describes what a teacher expects or intends learners to learn.

Level	Level Description	Cognitive Processes	Example Verbs
<b>REMEMBER</b>	Recall facts and basic concepts	Recognising and Recalling	EV: List, Memorise, Identify
<b>UNDERSTAND</b>	Explain ideas or concepts	Interpreting and Classifying	EV: Describe, Predict, Report
<b>APPLY</b>	Use the information in a new situation	Executing	EV: Implement, Respond, Use
<b>ANALYSE</b>	Draw connections among ideas	Organising	EV: Compare, Distinguish, Question
<b>EVALUATE</b>	Justify a stand or decision	Checking and Critiquing	EV: Determine, Reflect, Judge
<b>CREATE</b>	Produce new or original work	Generating and Producing	EV: Assemble, Design, Create

- It may be helpful to precede each objective with something like: “**Learners shall be able to...**”, “Learners will...”. E.g. The student shall be able to: develop (verb) a successful business model (noun phrase).

### Learning Objective with ENCORE

[Report here a **screenshot** of the revised and/or improved version of your learning scenario objectives, after interaction with the second section of ENCORE]

Again, under the openness and sharing paradigm of the Open approach in general, one can insist on referring back to the forum, where one can open a conversation about one's product and opinion. Offer a strategy guide (*ENCORE within your institution*) that outlines customized strategies for incorporating the ENCORE approach in different organizational contexts. Try taking a look at this section, which proposes a range of strategies for fostering the adoption of ENCORE at the institutional and non-institutional levels, offering different approaches depending on the organizational context. Each approach is designed to support the integration of ENCORE effectively and sustainably, adapting to the specific needs of the institution and faculty involved. This could be useful for gathering interesting insights for expanding your practices or those within which you work. Conclude the course with a final moment to promote awareness and knowledge of the Open Recognition process, with a step-by-step walkthrough and shareable resources, to help participants understand how to upload, share, and receive recognition for their work. In the case of ENCORE, the

project has embraced and integrated the work of ORCA Pods partners (<https://openeducator.orcapods.org/>). For the occasion, the example provided offers a brief overview with direct links to the platform and all the main practical steps to set up a quality product from an open perspective and get a recognition badge for the work done. This would offer a useful way to rethink and adapt the approach to one's context.

At the end of the course, encourage users to reflect on the platform's impact in terms of perceived usefulness and intended future use of it (*Your Feedback about ENCORE*) for one's design and professionalism (see Table 7). Also consider offering a “post-reflection” time to investigate participants' maturation about their openness to innovative practices (*How Open Can I Be?*). A final small step can be identified in a final questionnaire (*Self-Paced Course Usability*) designed to gather specific impressions about the self-directed course and its usability (content and navigation). It is especially recommended to collect ideas and potential improvements for future open use, and share them with everyone (Table 9). Setting up an activity like this could not only trigger reflection on the experience made but also offer co-constructed support that continuously improves a set of tools useful in different situations.

All the “Self-paced Course” materials and the specific backup of Moodle + H5P are available in the present **Zenodo record** (Crudele & Raffaghelli, 2025c [[Self-paced Course Workflow](#)]).

## Materials and Tools

All the tools introduced and integrated into the experimental interventions described above — and thoroughly detailed in the UNIPD [ENCORE Pedagogical Guidelines](#) - Final Version (Raffaghelli & Crudele, 2025) — will be explored in depth in the following sections. For accessibility and ease of use, all tools are freely available in Open Access on Zenodo (record: Crudele & Raffaghelli, 2025 [[Community](#)]).

### How Open I Am/How Open Can I Be

This self-assessment tool, designed as “How Open I Am” (pre-intervention) and “How Open Can I Be” (post-intervention), helps participants reflect on the impact of their exposure to the ENCORE Approach on their professional growth. It measures shifts in knowledge and practices related to OERs, Open Educational Practices (OEPs), and contributions to Open Science. The test is built on reflective statements from DigCompEdu ([DigCompEdu, JRC, 2017](#)), enriched by elements from the Open Digital Framework ([JRC, 2016, 2019](#)). Two tailored versions of the tool are available: one for educators, teachers, and trainers (Table 4), and another for students — particularly future teachers and trainers — (Table 5).

Table 4 - Educators/Teachers/Trainers' version

This version is designed for educators and trainers, covering various dimensions of openness in teaching and learning. Please answer by choosing a value from 1 to 5, where 1 is “Very much disagree”, and 5 is “Very much agree”.

Core dimension	Description	Item
Using Licences	Finding and using open licenses in digital resources.	1. I can identify the license of an educational resource. 2. I tag OER properly to increase their findability and searchability. 3. I know what an Open Educational Resource (OER) is. 4. I share the OER I create and adapt with others. 5. I appropriately reference the OER I use (whether I adapt the resource or not). 6. I support my institution in the implementation of OER as an open education practice. 7. I openly license the OERs I produced.
Implementing Open Educational Practices	Adopting Open Educational Practices in teaching in order to make it more inclusive.	8. I know how to apply Open Educational Practices (OEP) in my teaching. 9. I apply the principles of OEP in my teaching, e.g. using and sharing OER, using MOOCs and free and open online courses as support material or reference. 10. Besides applying the principles of OEP in my teaching, I take into account the access and accessibility of the teaching materials that I produce, in order to cater for those learners with special needs. 11. I do not only make my teaching material accessible to those learners with special needs, but also use open formats (e.g. LibreOffice) and open source software whenever possible when I produce my teaching material. 12. I not only apply OEP principles in my teaching but also openly share my teaching practices with other colleagues by using digital technologies, e.g. recording and publishing podcasts or keeping an updated blog or collaborating in open platforms or social networks. 13. I create different learning pathways for the OER that I produce with the aim to enable the personalisation of the learning process. 14. I adopt different OEP in my teaching and support my institution to open access to content (OER) and courses to all learners.
Collaborating with the Institution	Publishing work with Creative Commons Licences and make data available whenever possible.	15. I am not familiar with the concept of open science. 16. I understand basic concepts of open science and increasingly use open access journals to gather evidence for my research. 17. I publish my research in open access journals whenever the journal choice depends on me. 18. I make my research data available as open data. 19. I consider myself an open scientist and am involved with open science communities 20. I support my institution in the design of and compliance with policies that promote and/or reward academics who embrace open research practices. 21. I aim for principles of open research and collaboration to be applied in all research projects I am involved with, whenever appropriate and feasible.

Table 5 - Students' version

The version for students mirrors the structure of the educator version, with a few adjustments. Specifically, questions 20 and 21 were omitted, as students are less likely to support institutional policies or lead research projects and open collaborations. The remaining items were carefully adapted to align with the student perspective, ensuring a thorough exploration of their knowledge, awareness, and potential adoption of the open approach. This version maintains a balanced focus on understanding and engaging with OERs, fostering reflective practices that can shape their future roles as educators and practitioners.

The items below cover different aspects considered in relation to OERs. Please answer by choosing a value from 1 to 5, where 1 is "Very much disagree" and 5 is "Very much agree".

Core dimension	Sub-dimension	Item
Knowledge of OER	Identify open licences	1. I can identify the license of an educational resource.
	Tagging OER	2. I can tag OER properly to increase the possibilities of others to re-use/find them.
	OER knowledge	3. I know what an Open Educational Resource (OER) is.
Using OER	OER sharing	4. I have shared and created OERs adapted from others.
	Referencing OER	5. I appropriately reference the OER I use (whether I adapt the resource or not).
	Supporting Institutional Strategies on OER	6. I support my institution in the implementation of OER as an open education practice.
	Use open licences	7. I openly license the OERs I produced.
	Personalisation Process	11. I use OER to study through a personalised approach of the learning process.
Adoption of OER and OE by teachers	Apply OER	8. I know that my teachers have used OERs for my learning.
	OER in Teaching	9. I have seen the principles of Open Education in practice by teachers, e.g. using and sharing OER, using MOOCs and free and open online courses as support material or reference.
		10. Besides applying the principles of OER in their teaching, I have seen my teachers to take into account the access and accessibility of the teaching materials that they produce, in order to cater for those learners with special needs.
	Accessible materials	12. Generally in my experience, teachers adopt different OER in their teaching and support the institution to be more open to learners.
	Different OERs	12. Generally in my experience, teachers adopt different OER in their teaching and support the institution to be more open to learners.
Knowledge of Open Science	OS concept	13. I am familiar with the concept of Open Science.
	OS basic concepts	14. I understand basic concepts of Open Science and have consulted research shared openly.
	Open data	16. I have seen open data and I can explain what it is.
University support for OS	Open Access Journals	15. The university where I study supports the teachers/researchers to publish openly, so we (students) can have access to the materials.
Contributing to OS	Open Science Community	17. I am an active contributor to open research projects and I am involved in communities that contribute to citizen science.
	Institution's policies	18. I support my institution in their effort to promote open research, by engaging in my teachers' research projects or through the association of my thesis/project work to research activity.
	Open research promotion	19. I believe open research and collaboration is extremely relevant, whenever appropriate and feasible.

## My Digital, Green, Entrepreneurial Approach to Teaching/Training


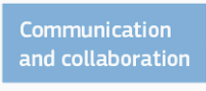
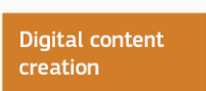

This self-assessment tool — *My Digital, Green, Entrepreneurial Approach to Teaching/Training* — serves as a reflective exercise to explore the development of DGE competences within one's teaching or training practice. It has been successfully implemented in internal intensive and crash courses to encourage educators to assess their current level of awareness, openness, and the extent to which they foster these competences in their learning environments.

Beyond immediate reflection, the tool also helps track the long-term impact of the ENCORE Approach on professional learning and identity. It draws from key EU frameworks: DigComp 2.2 (Vuorikari et al., 2022), EntreComp (Bacigalupo et al., 2016), and GreenComp (Bianchi et al., 2022). The self-test is divided into three focused sections, each addressing one of the DGE competence areas (Tables 6, 7, and 8).

Table 6 - Digital Competence

Digital Competence is one of the eight Key Competences for Lifelong Learning defined by the [Council of the European Union \(2018\)](#). The DigComp 2.2 model provides a comprehensive framework for identifying and developing essential digital skills across various groups. This section encourages educators to reflect on how they integrate and promote digital skills in their practice through a set of structured questions with scaled response options.

Please answer the following five questions considering your own experience as an educator/teacher/trainer regarding the development of Digital Competence.

Introduction to questions	Look at the DigComp 2.2. competence area below and choose one of the following response options.
Questions	<div>1.  <ul style="list-style-type: none"> <li>1.1. Browsing, searching and filtering data, information and digital content</li> <li>1.2. Evaluating data, information and digital content</li> <li>1.3. Managing data, information and digital content</li> </ul> </div>
	<div>2.  <ul style="list-style-type: none"> <li>2.1. Interacting through digital technologies</li> <li>2.2. Sharing information and content through digital technologies</li> <li>2.3. Engaging in citizenship through digital technologies</li> <li>2.4. Collaborating through digital technologies</li> <li>2.5. Netiquette</li> <li>2.6. Managing digital identity</li> </ul> </div>
	<div>3.  <ul style="list-style-type: none"> <li>3.1. Developing digital content</li> <li>3.2. Integrating and re-elaborating digital content</li> <li>3.3. Copyright and licences</li> <li>3.4. Programming</li> </ul> </div>
	<div>4.  <ul style="list-style-type: none"> <li>4.1. Protecting devices</li> <li>4.2. Protecting personal data and privacy</li> <li>4.3. Protecting health and well-being</li> <li>4.4. Protecting the environment</li> </ul> </div>

	<div> <div>Problem solving</div> <div> 5.1. Solving technical problems  5.2. Identifying needs and technological responses  5.3. Creatively using digital technologies  5.4. Identifying digital competence gaps </div> </div>
Response options	5. <ul style="list-style-type: none"> <li>o I support the development of all these competences in my teaching/training practice.</li> <li>o I support the development of most of these competences in my teaching/training practice.</li> <li>o I support the development of some of these competences in my teaching/training practice, but I am not able to address all of them.</li> <li>o I do not support the development of these competences, but I am considering how to integrate them into my teaching/training practice.</li> <li>o I do not address these competences in my teaching/training practice.</li> </ul>

Table 7 - Entrepreneurial Competence

Recognised as another of the eight Key Competences for Lifelong Learning defined by the [Council of the European Union \(2018\)](#), it is grounded in the definition provided by the Danish Foundation for Entrepreneurship & Young Enterprise. encourages learners to transform opportunities and ideas into tangible financial, cultural, or social value (Bacigalupo et al., 2016). In this section, educators are invited to reflect on how they foster entrepreneurial thinking by assessing their teaching practices across three dimensions: *Ideas and Opportunities*, *Resources*, and *Into Action*, using a structured set of response options to capture different levels of support.

Please answer the following three questions considering your own experience as an educator/teacher/trainer regarding the development of Entrepreneurial Competence.

Questions	1. Look at the <b>Ideas and Opportunities</b> Area of the EntreComp framework below and select the response that best applies to your practice.			
	Areas	Competences	Hints	Descriptors
		<b>1.1 Spotting opportunities</b>	Use your <sup>5</sup> imagination and abilities to identify opportunities for creating value	<ul style="list-style-type: none"> <li>Identify and seize opportunities to create value by exploring the social, cultural and economic landscape</li> <li>Identify needs and challenges that need to be met</li> <li>Establish new connections and bring together scattered elements of the landscape to create opportunities to create value</li> </ul>
	1. Ideas and opportunities	<b>1.2 Creativity</b>	Develop creative and purposeful ideas	<ul style="list-style-type: none"> <li>Develop several ideas and opportunities to create value, including better solutions to existing and new challenges</li> <li>Explore and experiment with innovative approaches</li> <li>Combine knowledge and resources to achieve valuable effects</li> </ul>
		<b>1.3. Vision</b>	Work towards your vision of the future	<ul style="list-style-type: none"> <li>Imagine the future</li> <li>Develop a vision to turn ideas into action</li> <li>Visualise future scenarios to help guide effort and action</li> </ul>
		<b>1.4 Valuing ideas</b>	Make the most of ideas and opportunities	<ul style="list-style-type: none"> <li>Judge what value is in social, cultural and economic terms</li> <li>Recognise the potential an idea has for creating value and identify suitable ways of making the most out of it</li> </ul>
		<b>1.5 Ethical and sustainable thinking</b>	Assess the consequences and impact of ideas, opportunities and actions	<ul style="list-style-type: none"> <li>Assess the consequences of ideas that bring value and the effect of entrepreneurial action on the target community, the market, society and the environment</li> <li>Reflect on how sustainable long-term social, cultural and economic goals are, and the course of action chosen</li> <li>Act responsibly</li> </ul>

2. Look at the **Resources** Area of the EntreComp framework below and select the response that best applies to your practice.

Areas	Competences	Hints	Descriptors
2. Resources	<b>2.1 Self-awareness and self-efficacy</b>	Believe in your-self and keep developing	<ul style="list-style-type: none"> <li>Reflect on your needs, aspirations and wants in the short, medium and long term</li> <li>Identify and assess your individual and group strengths and weaknesses</li> <li>Believe in your ability to influence the course of events, despite uncertainty, setbacks and temporary failures</li> </ul>
	<b>2.2 Motivation and perseverance</b>	Stay focused and don't give up	<ul style="list-style-type: none"> <li>Be determined to turn ideas into action and satisfy your need to achieve</li> <li>Be prepared to be patient and keep trying to achieve your long-term individual or group aims</li> <li>Be resilient under pressure, adversity, and temporary failure</li> </ul>
	<b>2.3 Mobilizing resources</b>	Gather and manage the resources you need	<ul style="list-style-type: none"> <li>Get and manage the material, non-material and digital resources needed to turn ideas into action</li> <li>Make the most of limited resources</li> <li>Get and manage the competences needed at any stage, including technical, legal, tax and digital competences</li> </ul>
	<b>2.4 Financial and economic literacy</b>	Develop financial and economic know how	<ul style="list-style-type: none"> <li>Estimate the cost of turning an idea into a value-creating activity</li> <li>Plan, put in place and evaluate financial decisions over time</li> <li>Manage financing to make sure my value-creating activity can last over the long term</li> </ul>
	<b>2.5. Mobilizing others</b>	Inspire, enthuse and get others on board	<ul style="list-style-type: none"> <li>Inspire and enthuse relevant stakeholders</li> <li>Get the support needed to achieve valuable outcomes</li> <li>Demonstrate effective communication, persuasion, negotiation and leadership</li> </ul>

3. Look at the **Into Action** Area of the EntreComp framework below and select the response that best applies to your practice.

Areas	Competences	Hints	Descriptors
3. Into action	<b>3.1 Taking the initiative</b>	Go for it	<ul style="list-style-type: none"> <li>Initiate processes that create value</li> <li>Take up challenges</li> <li>Act and work independently to achieve goals, stick to intentions and carry out planned tasks</li> </ul>
	<b>3.2 Planning and management</b>	Prioritize, organize and follow-up	<ul style="list-style-type: none"> <li>Set long-, medium- and short-term goals</li> <li>Define priorities and action plans</li> <li>Adapt to unforeseen changes</li> </ul>
	<b>3.3 Coping with uncertainty, ambiguity and risk</b>	Make decisions dealing with uncertainty, ambiguity and risk	<ul style="list-style-type: none"> <li>Make decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes</li> <li>Within the value-creating process, include structured ways of testing ideas and prototypes from the early stages, to reduce risks of failing</li> <li>Handle fast-moving situations promptly and flexibly</li> </ul>
	<b>3.4 Working with others</b>	Team up, collaborate and network	<ul style="list-style-type: none"> <li>Work together and co-operate with others to develop ideas and turn them into action</li> <li>Network</li> <li>Solve conflicts and face up to competition positively when necessary</li> </ul>
	<b>3.5. Learning through experience</b>	Learn by doing	<ul style="list-style-type: none"> <li>Use any initiative for value creation as a learning opportunity</li> <li>Learn with others, including peers and mentors</li> <li>Reflect and learn from both success and failure (your own and other people's)</li> </ul>

Response options

- ☐ I support the development of all these competences in my teaching/training practice.
- ☐ I support the development of most of these competences in my teaching/training practice.
- ☐ I support the development of some of these competences in my teaching/training practice, but I am not able to address all of them.
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Table 8 - Green Competence

Green Competence focuses on embedding sustainability principles into education, aligning with the European Commission's priority of fostering environmental protection and public health. The goal is to empower learners with the knowledge, skills, and attitudes needed to build a greener and more equitable future. Educators are encouraged to evaluate their engagement with four key areas of the GreenComp framework — *Embodying Sustainability Values*, *Embracing Complexity in Sustainability*, *Envisioning Sustainable Futures*, and *Acting for Sustainability* — through reflective questions designed to assess the depth and breadth of their support for sustainability competences.

Please answer the following four questions considering your own experience as an educator/teacher/trainer regarding the development of Green Competence.

Questions	<p>1. Look at the GreenComp Area <b>Embodying Sustainability Values</b> below and select the response that best applies to your practice.</p> <table border="1"> <thead> <tr> <th>AREA</th> <th>COMPETENCE</th> <th>DESCRIPTOR</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1. Embodying sustainability values</td> <td>1.1 <b>Valuing sustainability</b></td> <td>To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.</td> </tr> <tr> <td>1.2 <b>Supporting fairness</b></td> <td>To support equity and justice for current and future generations and learn from previous generations for sustainability.</td> </tr> <tr> <td>1.3 <b>Promoting nature</b></td> <td>To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.</td> </tr> </tbody> </table>	AREA	COMPETENCE	DESCRIPTOR	1. Embodying sustainability values	1.1 <b>Valuing sustainability</b>	To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.	1.2 <b>Supporting fairness</b>	To support equity and justice for current and future generations and learn from previous generations for sustainability.	1.3 <b>Promoting nature</b>	To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.
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## Your Opinion On the Session

This survey, “Your Opinion On the Session,” is designed as a reflective tool to assess the impact of using and engaging with the ENCORE Approach on professional learning, teaching practices, and student outcomes. It also helps capture educators' and learners' acceptance of the ENCORE system as a technological and pedagogical resource.

To provide a comprehensive picture, the survey is divided into two sections: the first includes open-ended questions to explore participants' perceptions, insights, and the perceived influence of ENCORE on their teaching and learning practices. The second section features twenty items inspired by the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003), which

help analyze the factors influencing the adoption, acceptance, and intention to use the ENCORE system.

The UTAUT model (Venkatesh et al., 2003) is widely applied to understand human-technology acceptance behaviour, particularly in information systems. The survey items analyze acceptance and utilization through the following key model factors (Venkatesh et al., 2003, p. 447-453):

- a) Performance Expectancy: This refers to “the degree to which an individual believes that using the system will help him or her to attain gains in job performance”.
- b) Effort Expectancy: This refers to “the degree of ease associated with the use of the system”.
- c) Social Influence: This refers to “the degree to which an individual perceives that important others believe he or she should use the new system”.
- d) Facilitating Conditions: This refers to “the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system”.
- e) Behavioural intention.

According to the UTAUT model, performance expectancy, effort expectancy, and social influence contribute to people's behavioral intentions to use the platform while facilitating conditions that influence actual, sustained usage.

The survey design is informed by existing research on OER adoption (Abbad, 2021; Kurelovic, 2020) and AI-driven educational tools (Raffaghelli et al., 2022), allowing us to tailor the instrument to ENCORE’s unique functionalities. Two tailored versions of the survey are available: an “extended version” (Table 9) for in-depth exploration during an intensive training session, and a shorter (Table 10), more targeted version for a crash course.

Table 9 - Initial Extended Version

*Open-ended questions*

1. Which was the topic/activity in this session that you liked the most?
2. What advantages can the use of ENCORE bring a) to teachers/trainers and b) to learners?
3. What disadvantages can the use of ENCORE bring a) to teachers/trainers and b) to learners?
4. What features of the system do you most appreciate from a teaching/training-learning perspective and why?

Overall, do you think the ENCORE system could be interesting for a teacher/trainer? Please indicate your level of agreement using a value from 1 (Not interesting at all) to 5 (Extremely interesting).

*UTAUT items*

Below, let’s explore some specific reflections and perceptions about your experience with the ENCORE system.

Please indicate your level of agreement with the following statements, using a value from 1 to 5, where: 1 = Full disagreement; 2 = Disagreement; 3 = Neither agreement nor disagreement; 4 = Agreement; 5 = Full agreement.

Variable	Item
Performance Expectancy	1. I find ENCORE useful to adopt OER and DGE. 2. Using ENCORE could enable me to accomplish teaching/training activities with OER/DGE more quickly.

	3. Using ENCORE increases my teaching/training productivity with OER/DGE. 4. If I use ENCORE, I will increase my chances of improving the quality of my teaching/training.
Effort Expectancy	5. My interaction with ENCORE is clear and understandable. 6. I am skilled at using ENCORE. 7. Learning to use ENCORE is easy for me. 8. I find it easy to get ENCORE to do what I want it to do.
Social Influence	9. Colleagues who are important to me may think that I should use ENCORE. 10. Colleagues who influence my way of working may think that using ENCORE could be helpful to improve OER/DGE integration into teaching/training. 11. Other people/colleagues could be helpful in the use of ENCORE. 12. In general, my university/company supported the adoption of OER/DGE and may think we should use ENCORE.
Facilitating Conditions	13. I have the resources necessary to use ENCORE. 14. I have the knowledge necessary to use ENCORE. 15. ENCORE is compatible with other systems I use. 16. A specific person (or group) is available for assistance with ENCORE difficulties.
Behavioural Intention	17. I intend to use ENCORE in the future. 18. I predict I would use ENCORE in the future. 19. I plan to use ENCORE in the future. 20. I would recommend ENCORE to my colleagues.

Table 10- UTAUT Reduced version

<i>Initial Open-ended questions</i>	
1. Where do you come from? (Please indicate your city)	
2. Tell us about you in a few words: your area of knowledge and your expertise.	
<i>UTAUT items</i>	
For <b>Usefulness</b> , indicate the level of perceived utility, using a value from 1 to 5, where: 1 = Not useful at all; 2 = Somehow useful; 3 = Useful; 4 = Quite useful; 5 = Absolutely useful.	
For <b>Intention to use</b> , please indicate your level of intentionality and prospect for use, using a value from 1 to 5, where: 1 = I don't think so; 2 = I think I could rarely use it; 3 = Maybe; 4 = I am prone to use it; 5 = I'm clear and willing to use it.	
<b>Variable</b>	<b>Item</b>
Usefulness	3. Do you think ENCORE could be useful for your professional activities? (Imagine you have to prepare/design a lesson, search for open educational resources, or promote your students' DGE skills...Would ENCORE help you?)
Intention to use	4. Do you think you will use ENCORE in the future? (Imagine that you adopt ENCORE for a project of yours, a lesson, or any kind of ongoing activity. Is that feasible?)
<i>Final Open-ended questions</i>	
5. Tell us: What do you think are the most likely and least likely uses of this tool in your area?	
6. Please leave us with some more thoughts on the use of ENCORE and AI in your professional activities.	

## ENCORE Learning Design Self-Assessment Tool

To support educators in designing and refining their learning scenarios, we employed the **ENCORE Learning Design Self-Assessment Tool**. This structured checklist allows educators to evaluate their instructional design across multiple dimensions, ensuring alignment with best pedagogical practices and effective integration of Open Educational Resources (OER).

The tool is organized into six key areas:

1. **Definition of the Learning Scenario** – Assess the clarity and conciseness of the scenario description.
2. **Resources Used** – Evaluate how ENCORE is utilized for selecting and documenting resources.
3. **Educational Scenario** – Ensure the scenario is contextualized, considering factors such as learner experience and group size.
4. **Learning Objectives** – Verify the alignment of objectives with Bloom’s Taxonomy and their measurability.
5. **Review of Objectives with ENCORE** – Examine if objectives have been refined based on ENCORE’s recommendations.
6. **Overall Quality of the Learning Design** – Assess feasibility, accessibility, and replicability.

Each criterion is rated on a three-point scale (**Yes = 1 pt, Partially = 0.5 pt, No = 0 pt**), with a total score ranging from **0 to 20 points**. Based on the final score, the tool categorizes the learning scenario into four levels:

- **16-20 pts** – Complete Learning Scenario
- **11-15 pts** – Sufficient Learning Scenario
- **7-10 pts** – Incomplete Learning Scenario
- **0-6 pts** – Insufficient Learning Scenario

This assessment tool provides structured feedback to educators, facilitating iterative improvements and encouraging the integration of high-quality OER through ENCORE in their future courses.

Table 11 - Self-Assessment Tool

		Yes	Partially	No
		1 pt.	0.5 pt.	0 pt.
<b>Definition of the Learning Scenario</b>	The title of the Learning Scenario is clear and representative.			
	The description of the idea is concise but effective (maximum 5 lines).			
<b>Resources used</b>	I went to ENCORE.			
	I did a thorough search on ENCORE to find relevant resources.			
	The resources selected are			

	consistent with the theme of my scenario.			
	I managed to create at least one collection of useful resources.			
	I documented the resources found with screenshots or clear references.			
<b>Educational Scenario</b>	I set the scenario based on my experience.			
	I set the educational context.			
	I set the group size level.			
	I set the learners' experience.			
<b>Learning objectives</b>	Learning objectives are clearly formulated with a verb from Bloom's Taxonomy.			
	The objectives contain a measurable action and an expected outcome.			
	The objectives are aligned with the competences I want to develop in learners.			
<b>Review of objectives with ENCORE</b>	I compared the initial objectives with those suggested by ENCORE.			
	I modified or improved the objectives after interaction with ENCORE.			
	I documented the changes with a screenshot or descriptive note.			
<b>The overall quality of the Learning Design</b>	Is my scenario realistic and applicable in a learning context?			
	Are the selected resources accessible and easy for learners to use?			
	Is the Learning Design clear and replicable by other			

	teachers or trainers?			
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Learning Scenario Complete	Learning Scenario Incomplete	Learning Scenario Sufficient	Insufficient Learning Scenario
16 to 20 pt.	11 to 15 pt.	7 to 10 pt.	0 to 6 pt.

## Self-Paced Course Usability Questionnaire

To assess the usability and effectiveness of the self-paced course, a short questionnaire was designed to be administered to participants. This instrument was designed to gather valuable feedback on several aspects of the learning experience, focusing on content relevance, ease of navigation, engagement levels, and overall satisfaction.

The tool can be especially useful in enhancing user participation and providing space for user opinion.

The questionnaire is divided into **five sections**, each addressing a key aspect of the course experience:

1. **Content Quality** – Participants evaluate the sufficiency, relevance, and clarity of the materials provided, as well as the usefulness of interactive elements.
2. **Course Navigation** – Respondents evaluate the ease of navigation, clarity of instructions, and the effectiveness of the course structure (modules and units). They also reflect on their ability to complete the course independently without facing difficulties.
3. **Overall Experience** – Participants rate their general satisfaction with the course on a scale from 1 (very positive) to 5 (not at all positive).
4. **Recommendation** – A simple yes/no question asks if they would recommend the course to others.
5. **Qualitative Feedback** – Open-ended questions allow you to suggest improvements and justify any recommendations and suggestions.

This questionnaire serves as a critical tool for assessing the user experience and identifying areas that can be enhanced to improve the design of future self-paced courses.

Table 12- Self-Questionnaire about the Course Usability

Dimension	Statement	Scale
Content Quality	The material provided was sufficient to complete the activities without the need for further support.	Likert Scale: 1 = Very much agree → 5 = Not at all agree
	The material provided was relevant to the activities.	
	The material provided seemed comprehensible.	
	The interactive elements were useful.	
Course Navigation	The course was engaging.	
	I navigated easily between the different sections of the course.	

	I found the subdivision of the content into modules and units useful.	
	I easily understood the instructions for carrying out the activities.	
	The course enabled me to proceed independently without difficulty.	
<b>Overall Experience</b>	How would you rate your overall experience with the course?	Likert Scale: 1 = Very positive → 5 = Not at all positive
<b>Recommendation</b>	Would you suggest this course to others for learning about ENCORE?	Yes / No
	If not, why?	Open-ended
<b>Qualitative Feedback</b>	What improvements would you suggest to make the course more effective and enjoyable?	Open-ended



## Conclusion

The ENCORE approach is not just a conceptual framework but a practical ecosystem of tools and resources designed to support the real and effective integration of open educational resources (OER) and open educational practices (OEP) in institutional and professional settings. This document is extensively enriched with immediate open access to the Zenodo records to provide the most accurate description and a structured, guided path for educators, trainers, and institutions. It also wants to offer ready-to-use materials, self-assessment tools, interactive modules, and implementation strategies that facilitate the practical adoption of the ENCORE model.

By taking advantage of the various training formats, including self-paced courses, intensive workshops, and crash courses, educators can engage with ENCORE in a way that suits their specific needs and institutional contexts. The tools provided here aim to:

- Facilitate hands-on learning through guided activities and structured workflows.
- Support scenario-based course design, ensuring adaptability to different educational contexts.
- Encourage adoption by institutions by offering clear strategies for incorporating ENCORE into professional development and curriculum innovation.

This practical and accessible repository serves as a bridge between theory and action, providing the support educators and institutions need to confidently implement, experiment with, and sustain Open Education practices in a structured but flexible way.

## References

- Abbad, M. M. (2021). Using the UTAUT model to understand students' usage of e-learning systems in developing countries. *Education and information technologies*, 26(6), 7205-7224. <https://doi.org/10.1007/s10639-021-10573-5>
- Bacigalupo, M., Kampylis, P., Punie, Y., & Van, D. B. L. (2016). *EntreComp: The Entrepreneurship Competence Framework*. Publications Office of the European Union. <https://doi.org/10.2791/160811>
- Bianchi, G., Pisiotis, U., & Cabrera, G. M. (2022). *GreenComp The European sustainability competence framework*. Publications Office of the European Union. <https://doi.org/10.2760/13286>
- Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals*, 1-2. Longmans, Green & co.
- Caena, F. (2014). Teacher Competence Frameworks in Europe: Policy-as-discourse and policy-as-practice. *European Journal of Education*, 49(3), 311-331. <https://www.jstor.org/stable/26609223>
- Conklin, J. (2005). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. *Educational Horizons*, 83(3), 154-159. <https://www.jstor.org/stable/42926529>
- Council of the European Union (2018). *Council recommendation of 22 May 2018 on key competences for lifelong learning*. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01))
- Crudele, F., & Raffaghelli, J. E. (2025a). *Crash Course ENCORE*. Zenodo. <https://doi.org/10.5281/zenodo.15077196>
- Crudele, F., & Raffaghelli, J. E. (2025b). *Intensive Course ENCORE*. Zenodo. <https://doi.org/10.5281/zenodo.15077451>
- Crudele, F., & Raffaghelli, J. E. (2025c). *Self-paced Course ENCORE*. Zenodo. <https://doi.org/10.5281/zenodo.15076845>
- Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does Teacher Preparation Matter? Evidence about Teacher Certification, Teach for America, and Teacher Effectiveness. *Education Policy Analysis Archives*, 13(42), 1-51. <https://doi.org/10.14507/epaa.v13n42.2005>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development. Learning Policy Institute*, 1-76. [https://learningpolicyinstitute.org/sites/default/files/productfiles/Effective\\_Teacher\\_Professional\\_Development\\_REPORT.pdf](https://learningpolicyinstitute.org/sites/default/files/productfiles/Effective_Teacher_Professional_Development_REPORT.pdf)
- De Rossi, M., & Fedeli, M. (2022). *Costruire percorsi di faculty development [Build paths of faculty development]*. Pensa Multimedia Editore - Didattiche, tecnologie e media education Frontiere per la sostenibilità [Didactics, technologies and media education Frontiers for sustainability].
- De Marchi. (2023). *Introduzione al progetto T4L [Introduction to T4L Project]* (pp. 12-13) [Chapter within the overall T4L Report 2023]. Università degli Studi di Padova. [https://www.unipd.it/sites/unipd.it/files/2023/T4L\\_report2023.pdf](https://www.unipd.it/sites/unipd.it/files/2023/T4L_report2023.pdf)
- Di Palma, D., & Belfiore, P. (2020). La trasformazione didattica universitaria ai tempi del Covid-19: un'opportunità di innovazione? [University teaching transformation in the time of Covid-19: an opportunity for innovation?]. *Formazione & Insegnamento*, XVIII, 1, 281-293. [https://doi.org/10.7346/-fei-XVIII-01-20\\_23](https://doi.org/10.7346/-fei-XVIII-01-20_23)
- EFFECT (2019). *Promoting a European dimensions to teaching enhancement. A feasibility study from the European forum for enhanced collaboration in teaching (EFFECT) project*. Brussels: EUA.
- European Commission (2007). *Improving the Quality of Teacher Education*. [Report] <https://eurlex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52007DC0392>
- European Commission (2025, January 9). *L'UE e le Nazioni Unite: obiettivi comuni per un futuro sostenibile [The EU and the United Nations: common goals for a sustainable future]*. Sustainable Development Goals. European Repository. [https://commission.europa.eu/strategy-and-policy/sustainable-development-goals/eu-and-united-nations-common-goals-sustainable-future\\_it](https://commission.europa.eu/strategy-and-policy/sustainable-development-goals/eu-and-united-nations-common-goals-sustainable-future_it)
- European Council (2009). *Council conclusions of 26 November 2009 on the professional development of teachers and school leaders*. Official Journal of the European Union.

[https://eurlex.europa.eu/legalcontent/EN/TXT/HTML/?uri=CELEX:52009XG1212\(01\)&qid=1648615986899&from=EN](https://eurlex.europa.eu/legalcontent/EN/TXT/HTML/?uri=CELEX:52009XG1212(01)&qid=1648615986899&from=EN)

European Council (2014). *Council conclusions of 20 May 2014 on effective teacher education*. Retrieved from [https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52014XG0614\(05\)&from=EN](https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52014XG0614(05)&from=EN)

European Council (2017). *Council Conclusions on school development and excellent teaching*. Official Journal of the European Union. <https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX%3A52017XG1208%2801%29&from=EN>

European Council (2020). *Council conclusions on “European teachers and trainers for the future”*. Official Journal of the European Union. [https://eur-lex.europa.eu/legalcontent/EN/TXT/HTML/?uri=CELEX:52020XG0609\(02\)&rid=5](https://eur-lex.europa.eu/legalcontent/EN/TXT/HTML/?uri=CELEX:52020XG0609(02)&rid=5)

FBK (2023). *E4E and E4L enablers, documentation, and software plug-in*. ENCORE Project result number D4.1. <https://project-encore.eu/wp-content/uploads/2023/11/D4.1-E4E-and-E4L-enablers-documentation-andsoftware-plug-in.pdf>

Fedeli, M., Mapelli, D., & Mariconda, C. (2020). *Teaching4Learning@Unipd L'innovazione didattica all'Università di Padova Teorie, Ricerche e Pratiche*. Padova University Press.

Francis, J.B. (1975). How Do We Get There From Here? Program Design for Faculty Development. *The Journal of Higher Education*, 46, 6, 719-732. <https://doi.org/10.1080/00221546.1975.11778671>

Inamorato, D. S. A., Punie, Y., & Castaño, M. J. (2016). *Opening up Education: A Support Framework for Higher Education Institutions*. JRC Publications Repository. <https://doi.org/10.2791/293408>

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice*, 41(4), 212-218. [https://doi.org/10.1207/s15430421tip4104\\_2](https://doi.org/10.1207/s15430421tip4104_2)

Kuhn, C., & Raffaghelli, J. E. (2023). 'Something Important is Going on With Data': Educators' Search for Political Agency to Act as Professionals in Complex Datafied Contexts. In *Human Data Interaction, Disadvantage and Skills in the Community: Enabling Cross-Sector Environments for Postdigital Inclusion* (pp. 53-77). Springer International Publishing.

Kurelovic, E. K. (2020). Acceptance of open educational resources driven by the culture of openness. In *INTED2020 Proceedings* (pp. 429-435). IATED.

Lampugnani, P.A. (2020). Faculty Development. Origini, framework teorico, evoluzioni, traiettorie. [Faculty Development. Origins, theoretical framework, evolutions, trajectories.] In A. Lotti, & P.A. Lampugnani (Eds.), *Faculty Development in Italia. Valorizzazione delle competenze didattiche dei docenti universitari [Faculty Development in Italy. Enhancing the teaching skills of university teachers]* (pp. 27-41). Genova University Press.

Lewis, K. G. (1996). A brief history and overview of faculty development in the United States. *International Journal for Academic Development*, 1(2), 26-33. <https://doi.org/10.1080/1360144960010204>

Lotti, A., & Lampugnani, P.A. (Eds.) (2020). *Faculty Development in Italia. Valorizzazione delle competenze didattiche dei docenti universitari [Faculty Development in Italy. Enhancing the teaching skills of university teachers.]*. Genova University Press.

OECD (2005). *Teachers Matter: Attracting, Developing and Retaining Effective Teachers*. OECD Publishing. <https://doi.org/10.1787/9789264018044-en>

OECD (2014). *TALIS 2013 Results: An International Perspective on Teaching and Learning*. OECD Publishing. <https://doi.org/10.1787/9789264196261-en>

OECD (2018). *Effective Teacher Policies: Insights from PISA*. OECD Publishing. <https://doi.org/10.1787/9789264301603-en>

OECD (2019). *TALIS 2018 Results (Vol. 1): Teachers and School Leaders as Lifelong Learners*. OECD Publishing. <https://doi.org/10.1787/1d0bc92a-en>

Raffaghelli, J. E. (2014). Learning Design as the base for adult educators' professionalism in the field of intergenerational learning. Progettazione formativa come base per la professionalità dei formatori degli adulti nell'ambito dell'apprendimento intergenerazionale. *Formazione & Insegnamento*, XII(2), 275-309. <https://ojs.pensamultimedia.it/index.php/siref/article/view/878>

Raffaghelli, J. E., & Crudele, F. (2025). *ENCORE Pedagogical Guidelines: from developing technologies to enhancing learning - Final Version*. ENCORE Project result D6.1.

Raffaghelli, J. E., Foschi, L. C., Crudele, F., Doria, B., Grion, V., & Cecchinato, G. (2023). *The ENCORE Approach. Pedagogy of an AI-driven system to integrate OER in Higher Education & VET*. ENCORE Project result in D5.1. <https://www.research.unipd.it/handle/11577/3502320>

Raffaghelli, J. E., Grion, V., & De Rossi, M. (2021). Pratiche basate sui dati nella valutazione e l'analisi della qualità didattica: il caso dell'Università di Padova [Data-based practices in the evaluation and analysis of educational quality: the case of the University of Padua]. *Qwerty-Open and Interdisciplinary Journal of Technology, Culture and Education*, 16(1), 58-79.

Raffaghelli, J. E., Rodríguez, M. E., Guerrero-Roldán, A. E., & Bañeres, D. (2022). Applying the UTAUT model to explain the student's acceptance of an early warning system in Higher Education. *Computers & Education*, 182, 104468. <https://doi.org/10.1016/j.compedu.2022.104468>

Ranieri, M., Raffaghelli, J. E., & Bruni, I. (2019). Supporting Learning Design as a Driver for Pedagogical Innovation Within an Integrated Model of Faculty Development. In A. Elçi, L. L. Beith, & A. Elçi (Ed.), *Handbook of Research on Faculty Development for Digital Teaching and Learning* (pp. 77-98). IGI Global. <https://doi.org/10.4018/978-1-5225-8476-6.ch005>

Ranieri, M., Raffaghelli, J. E., & Pezzati, F. (2018). Digital resources for faculty development in e-learning: A self-paced approach for professional learning Risorse digitali per lo sviluppo professionale sull'e-learning: Un approccio self-paced all'apprendimento professionale Digital resources for faculty. *Italian Journal of Educational Technology*, 26(1), 104-118. <https://doi.org/10.17471/2499-4324/961>

Sancho-Gil, J. M., Rivera-Vargas, P., & Miño-Puigcercós, R. (2020). Moving beyond the predictable failure of Ed-Tech initiatives. *Learning, Media and Technology*, 45(1), 61-75. <https://doi.org/10.1080/17439884.2019.1666873>

Selwyn, N. (2023). Lessons to Be Learnt? Education, Techno-solutionism, and Sustainable Development. In H.S. Sætra (Ed.), *Technology and Sustainable Development* (pp. 71-83). Routledge. <https://doi.org/10.1201/9781003325086>

The Open Definition. (Accessed January 1, 2025). *Wikipedia*. [https://en.wikipedia.org/wiki/The\\_Open\\_Definition](https://en.wikipedia.org/wiki/The_Open_Definition)

UNESCO (2011). *A Basic guide to open educational resources (OER)*. UNESCO Digital Library. <https://unesdoc.unesco.org/ark:/48223/pf0000215804>

United Nations (2015). *Transforming our World: The 2030 Agenda for Sustainable Development*. United Nations. <https://sdgs.un.org/2030agenda>

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425-478. <https://doi.org/10.2307/30036540>

Vladimirschi, V. (2018). *Professional Development Guidelines for OER: A case study of Brazilian fundamental education public school teachers*. DTheses. Faculty of Graduate Studies Dissertations and Theses. <https://dt.athabasca.ca/jspui/handle/10791/266>

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). *DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes*. JRC Publications Repository. <https://doi.org/10.2760/115376>

Wiley, D., & Hilton, J. (2018). Defining OER-Enabled Pedagogy. *The International Review of Research in Open and Distributed Learning*, 19(4). <https://doi.org/10.19173/irrodl.v19i4.3601>



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