UNLOCK

Educators' Knowledge, Attitudes and Skills.

A Pedagogical Framework for Facilitating

Educational Escape Room Activities

This pedagogical framework is an instrument to integrate the various competences of educators and is intended to guide both educators and institutions on the necessary competences that should be developed to facilitate game-based learning (GBL) in teaching and learning, with the final goal of improving student learning.

Thus, this pedagogical framework emerges with the aim of establishing a common framework of competences needed for an educator to be a facilitator in GBL activities, particularly in educational escape rooms (EER) activities, and to be used in the development of the Massive Open Online Course (MOOC).

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PEDAGOGICAL FRAMEWORK

INSTITUTIONAL CONTEXT

Financial support

Tools and resources

Guidelines and university support

Time management

Appropriate environments

Cooperation among teachers

PEDAGOGICAL COMPETENCES
Identify new methodologies
Mentoring
Encourage reflection
Alignment between the games and learning
Post-game assessment

TECHNOLOGICAL COMPETENCES
Experience with games and GBL
Technological know-how
Digital self-efficacy
Design thinking
Deep knowledge about contents

SOCIAL COMPETENCES
Creativity
Capacity to innovate
Open minded
Flexibility and adaptation
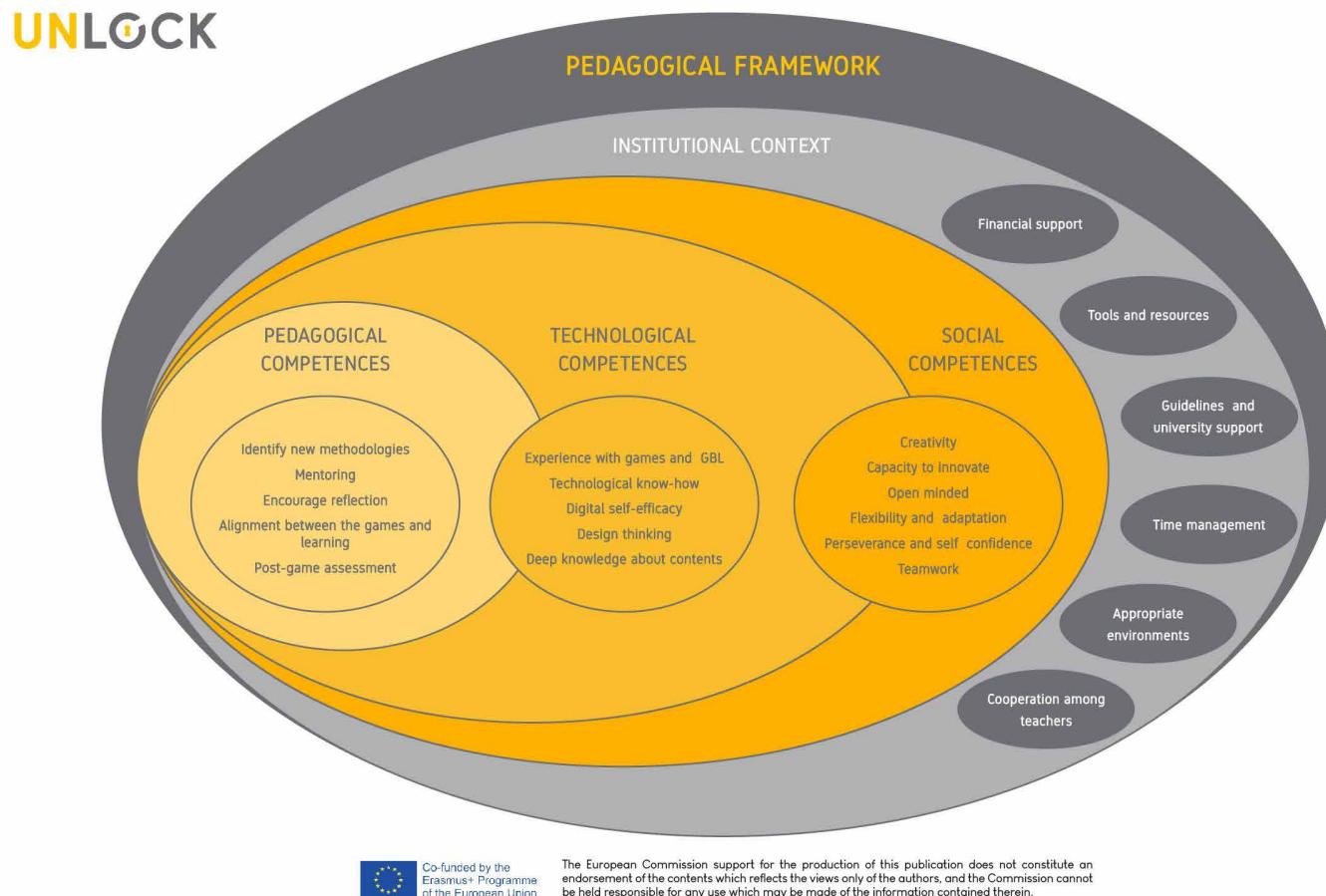Perseverance and self confidence
Teamwork

Figure 1. Conceptual pedagogical framework

All 3 areas (pedagogical framework, institutional context and social competences) are interconnected, and the 22 competences are related, and must all be treated as part of a whole, including the institutional support component, which needs to be related, for the GBL methodology to be effective and sustainable in the long term.

These competences apply to educators in all fields of education, such as social sciences, natural sciences, exact and health sciences. In our research we draw feedback from educators from these various domains.

This list of competences also applies to the institutional system and to those involved in supporting education. It seeks to assist education stakeholders to support educators in developing the various competences they need to become EER facilitators.

In the tables below, all of the 22 competences are listed, and each one is accompanied by its description and a brief suggestion for it to be put into practice by educators.

PEDAGOGICAL		
Knowing how to identify new methodologies	• To identify and plan meaningful activities for teaching; • To understand how the new methodology may help in the teaching and learning process.	• Identify the strengths and limitations of new methodologies; • Plan the objectives you want to achieve with this methodology.
Mentoring	• The educator needs some sense of the abilities of their students, to determine the length, complexity, and/or difficulty of the room.	• Engage, guide and support students, to the success of the methodology; • Monitoring of activities in order to ensure the achievement of the intended objectives.
Encourage reflection	• Need to guide the game approach to the learning process; • Ability to identify moments of learning and reflection during the games.	• Ensure effective communication; • Ensure synergy between student engagement and games; • Be motivating and supportive.
Alignment between the games and learning	• Ability to align EER activities to the learning outcomes; • Integrate the approach according to the curriculum objectives, with the students 'preferences and demographic and socio-cultural differences.	• Evaluate the curriculum content and use of EER to influence the promotion development of students' basic skills.
Post-game assessment	• Identify, report and collaborate in the treatment of learning; • Identifying and planning the resolution of educational situations that affect students with different abilities and different learning rates; • Ensure the evaluation of the activity.	• Needs an effective debrief/reflection strategy to highlight the learning goals; • Observation.

Figure 2a. Description of competences

TECHNOLOGICAL		
Experience with games and GBL	• Experience with games or some basic literacy about different game approaches; • Playfulness; • Playing skills; • Aptitude for games.	• Playing escape rooms • Enjoy the activities they are doing
Technological know-how	• Being able to troubleshoot technical challenges.	• The educator needs to know alternative tools; • It is useful to always have partners who may help; • Be prepared for the unexpected.
Digital self-efficacy	• Digital competences; • Familiarity with digital technologies and media.	• The educator should keep up to date with the latest digital trends
Design thinking	• Knowing the and practical process for developing the narrative and game activities.	• Create/Idealise the idea to be developed in the games; • Test the idea and make sure the narrative is well constructed.
Deep knowledge about contents	• Master the use of the tool. • Understanding the basic principles and fundamental laws of the active learning process. • Ensure the evaluation of the activity.	• The educator needs to keep updates about with experts and professionals in game design, by knowing experts and professional work; • Identifying your training needs.

Figure 2b. Description of competences

SOCIAL		
Creativity	• Creative thinking; • Ability to discover new and original ideas, connections and solutions to problems.	• Be curious, use your imagination; • Be communicative, empathetic and a storyteller.
Capacity to innovate	• Ability to encourage new activities in teaching; • Getting out of the conventional teaching methods.	• Understand game trends that can be useful to collaborate with educational practices.
Open minded	• To be open to new teaching methodologies; • Motivation to learn and leave their comfort zone.	• Think out of the box; • Be enthusiastic and energetic to conduct activities
Flexibility and adaptation	• Think and act under pressure; • Logical thinking; • Problem-solving skills.	• Adapt to the situation; • Improve; • Be authoritative during the activity, if necessary.
Perseverance and self confidence	• Be persistent and not to be afraid of failing; • Failure resilience; • The educator needs to his own potential to be an EER facilitator.	• Be disciplined and organised; • Be patient; • Willing to try and fail and try again.
Teamwork	• Working and mobilizing others; • Cooperation; • Collaborative effort to develop and implement EER activities.	• Meet and promote interaction processes, cooperation strategies and teamworking; • Create ideas together.

Figure 2c. Description of competences

INSTITUTIONAL SUPPORT		
Guidelines and university support	• Harmony with school administration aims; • Guidelines to help teachers adopt pedagogical strategies that foster creativity.	• Establish clear pedagogical objectives; • Provide institutional support for teaching innovation.
Tools and resources	• Physical resources, equipment, tools for game creation. Human resources.	• Be an institution that encourages professional development courses; • Providing research on gaming activities.
Financial support	• Financial support to encourage and promote sustainability of EER activities.	• Provide additional support for the acquisition of materials, training and human resources for the development of these activities.
Time management	• Sufficient time to prepare a game, and to reconcile them with the various other teaching and research activities.	• Provide reconciliation of the time needed by educators in teaching and research activities.
Cooperation among teachers	• Engagement of colleagues on the institution; • Acceptance and rewarding of educators using these activities.	• Motivation for educators to use new teaching approaches. • Fostering cooperation.
Appropriate environments	• Appropriate environment for EER activities.	• Provide an environment that can be used by various classes in the institution and adapted for various themes.

Figure 2d. Description of competences

After defining and organising the competences in different groups, it was observed that despite all of the competences being necessary throughout the process of EER implementation, some of them have greater impact and are often mentioned in specific phases of the adoption of this methodology.
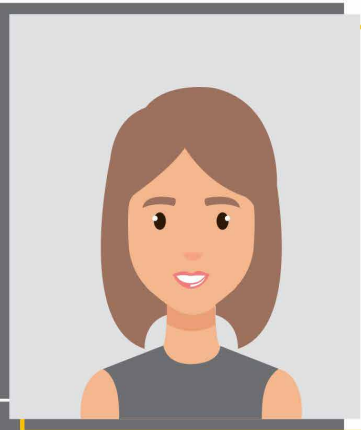

Planning	Design and puzzle	Execution	Post-game
- Knowing how to identify new methodologies - Deep knowledge about contents - Alignment between the games and learning - Capacity to innovate - Open minded	- Experience with games and GBL - Digital self-efficacy - Design thinking - Creativity - Teamwork	- Technological know-how - Flexibility and adaptation - Mentoring - Teamwork - Experience with games and GBL	- Post-game assessment - Encourage reflection - Perseverance and self-confidence - Flexibility and adaptation - Alignment between the games and learning

Figure 3. Most frequently competences in each phase of the EER

Guidelines and institutional support will continuously support the entire process. To develop and implement an EER, the educator will need tools and resources, financial support, an appropriate environment, time to plan, design, apply and evaluate an EER, and collaboration with other partners.

Educators need to understand the benefits of this approach and the potential of this methodology to have the will to engage other colleagues and supporters, and to foster a support network and community for the further development of this methodology in HEIs.

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CHARLOTTE

EXPERIMENTATION WITH NEW TECHNOLOGIES

DESIGN THINKING

FLEXIBILITY AND ADAPTATION SKILLS

COOPERATION AMONG TEACHERS

GUIDELINES AND UNIVERSITY SUPPORT

MOTIVATED/EXPERIENCED EDUCATOR IN A FAVORABLE ENVIRONMENT

DESCRIPTION
Charlotte is a management higher education professor who has a vibrant international experience, collaborating with several universities and co-authors in several countries.

RESOURCES
She is very open to experimentation with new technologies and media, making use of online tools to engage her students and she is very involved in the development of non-formal learning activities for students and colleague researchers.
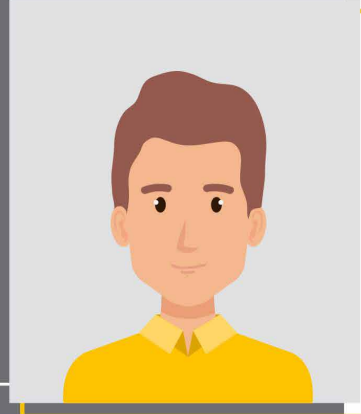
MOTIVATION
She has always been enthusiastic about the use of new teaching methodologies, namely design thinking, as well as mentoring, which reflects her flexibility and adaptation skills.

EXPECTATIONS
Loves to travel and to read and is easily caught daydreaming about new projects, ideas and destinations. Charlotte is very involved in the university activities and is very happy with the university environment that promotes innovation by conducting events about innovative pedagogy and offers opportunities and rewards for professors that experiment with new methodologies.

The Unlock project sought to identify and reflect on the profile of the educator that is able to act as a facilitator in EER activities.

The data to elaborate the different profiles was collected from previous research activity, case studies and questionnaires, summarised in an appealing format of a real educator profile.

Figure 4a. Different profiles of educators using EER

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ALISTAIR

ENCOURAGE REFLECTION

TECHNOLOGICAL KNOW-HOW

DIGITAL SELF-EFFICACY

PERSEVERANCE AND SELF-CONFIDENCE

LACK OF GUIDELINES, UNIVERSITY
SUPPORT AND COLLABORATION

MOTIVATED/EXPERIENCED EDUCATOR IN A NON - FAVORABLE ENVIRONMENT

DESCRIPTION
Alistair is an engineering higher education professor with an excellent track in research and development of collaborative projects with students and industry partners.

RESOURCES
He has great technological know-how and digital self-efficacy, is identified as a good team player, showing creativity, innovation skills, open-mindedness, perseverance, and self-confidence. With a deep experience in industry and local projects, Alistair is less experienced in travelling and international collaboration.

MOTIVATION
Alistair is a very rigorous pal, and innovation oriented who involves students in applied problems to stimulate their learning capabilities and is always willing to learn about new teaching approaches.

EXPECTATIONS
Feels lack of support from the institution and colleagues to adopt new teaching and learning methods, and a strong pressure to adhere to traditional evaluation techniques (e.g. exams) but is fascinated with active learning approaches despite not being very experienced and not being able to convince colleagues, other engineering professors, about their importance and potential.

These different personas represent the main content of the pedagogical framework (knowledge, attitudes and skills) in a more practical way for educators to relate it to their own profile, or the ones of those who surround him and may integrate a community within the higher education institution (HEI).

Figure 4b. Different profiles of educators using EER

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JULIA

GUIDELINES AND UNIVERSITY SUPPORT

APPROPRIATE ENVIRONMENTS

TOOLS AND RESOURCES

TEAMWORK

DEEP KNOWLEDGE ABOUT CONTENTS

NON MOTIVATED/ NON EXPERIENCED EDUCATOR IN A FAVORABLE ENVIRONMENT

DESCRIPTION
Julia is a very competent Economics higher education professor who, despite being open to new ideas to improve her teaching abilities and being an excellent teacher, is afraid of not being able to fully comprehend and utilize new technologies.

RESOURCES
Besides being afraid of not being perfectly able of utilizing new teaching methods, Julia may benefit from a well-rounded community of educators who are comfortable with helping her understand the benefits and how to better apply these practices.

MOTIVATION
As she already is an outstanding teacher with proven results, sometimes Julia doesn't fully have the motivation to introduce new teaching methods.

EXPECTATIONS
Julia is already a well-established and recognized teacher in the university. So, her usual expectations are to keep teaching the way she always did. She expects each year to be about the same as the last year, however, if she can recognize that an activity has a proven benefit to the students and she can be taught how to maximize its utility, she will surely make an effort to integrate these methods.

Figure 4c. Different profiles of educators using EER

Ultimately, these personas aim to motivate European educators and educational agents to develop the profile of facilitators of GBL, more specifically in EER activities, to perform and benefit from these activities, promoting their growth and long-term sustainability.

This research is part of the UNLOCK project. It aims to support, along with results from the project's research activity, the development of an innovative and gamified MOOC for HEI educators on the design and application of escape room games for pedagogical purposes, and the development of skills such as creativity as an entrepreneurial skill in students.

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