

GAMIFICATION IN STEM EDUCATION



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OID: E10201112

Advanced Institute for Skills Development

COURSE DESCRIPTION

Gamification has become an innovative teaching method widely used in STEM education to increase student motivation, engagement and participation in the classroom. By integrating game elements such as challenges, rewards, points and storytelling, teachers can transform traditional science lessons into interactive and student-centred learning experiences.

This Erasmus+ teacher training course introduces practical strategies to implement gamification in STEM classrooms. Participants will explore game-based learning approaches and design engaging STEM activities using both digital and non-digital tools to support active learning, collaboration and creativity.

Methodology

The course is based on collaborative learning and hands-on activities. Participants will explore innovative teaching methods, experiment with gamification tools and design their own gamified STEM lesson plans. Through practical sessions and group work, teachers will develop engaging classroom activities that promote active learning, student motivation and collaboration in STEM education.

Objectives

The course aims to:

- Introduce gamification strategies for STEM education;
- Explore game-based learning approaches;
- Develop gamified classroom activities;
- Increase student motivation in science learning;
- Support collaborative and active learning.

COURSE INFORMATION

Learning Outcomes

By the end of the course participants will be able to:

- Design gamified STEM learning activities;
- Apply game mechanics in classroom teaching;
- Create collaborative science challenges;
- Use digital gamification tools;
- Evaluate the effectiveness of gamified learning.

DAILY PROGRAM

5-DAYS

..... *Our courses also include a daily Coffee Break

DAY 1 / 8h30-13h45

Introduction to Gamification

- Understanding gamification in education
- Gamification vs game-based learning
- Motivation and engagement in STEM learning
- Examples of gamified classrooms

DAY 2 / 8h30-13h45

Game Mechanics in STEM Teaching

- Points, badges and leaderboards
- Challenges and missions in science learning
- Storytelling and narrative in STEM education
- Workshop: gamifying a science topic

DAY 3 / 8h30-13h45

Digital Gamification Tools

- Online platforms for gamified learning
- Quiz games and interactive challenges
- Digital escape rooms in science education
- Workshop: designing a gamified activity

DAY 4 / 8h30-13h45

Game-Based STEM Projects

- Designing STEM challenges and competitions
- Team-based learning activities
- Gamified experiments and problem-solving tasks
- Workshop: creating a STEM mission

DAY 5 / 8h30-13h45

Designing a Gamified Lesson

- Creating gamified lesson plans
- Assessment in gamified learning
- Presentation of participants' projects
- Reflection and certification



ADDITIONAL INFORMATION

Documentation: Learning Agreement; Certificate of Attendance with description of learning outcomes; Europass validation; and other required Erasmus+ supporting documents.

(Our courses are eligible to be completely funded by the Erasmus+ program 2021-2027 - KA1 funds and several other programs)

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