BECOME CREATIVE

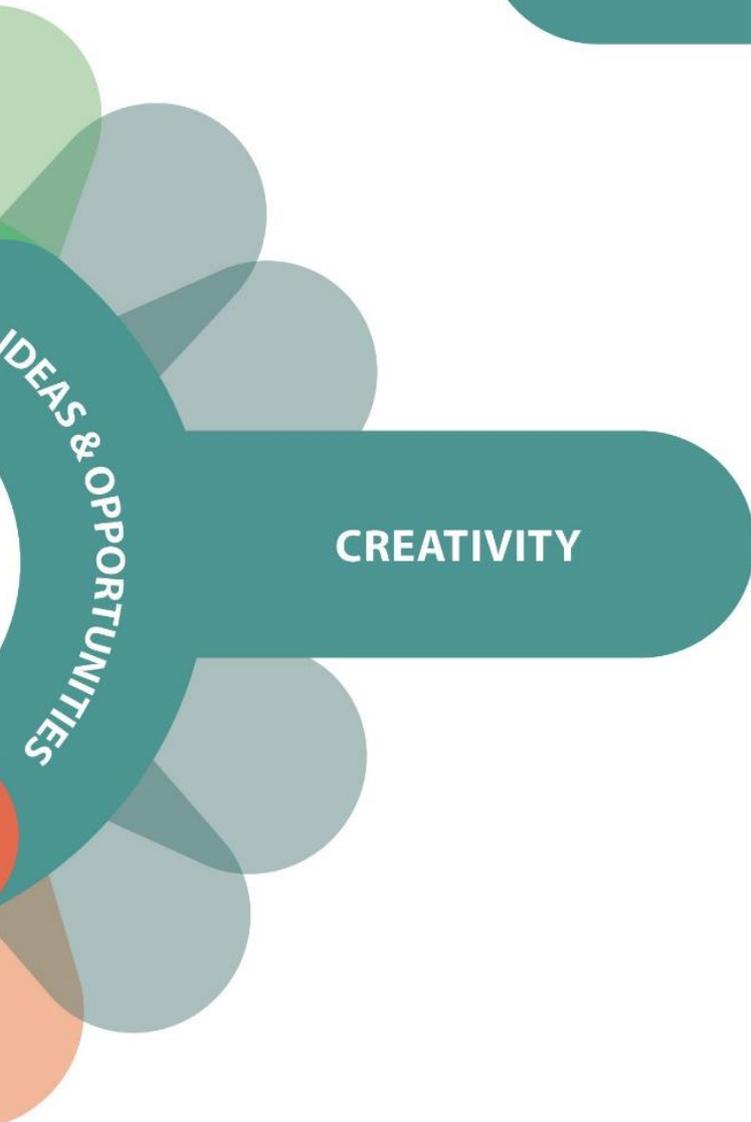**IDEAS & OPPORTUNITIES**

CREATIVITY

LEARNING GOALS

- BE CURIOUS AND OPEN
- DEVELOP IDEAS
- DEFINE PROBLEMS
- DESIGN VALUE
- BE INNOVATIVE

OTHER RELEVANT COMPETENCES

- WORKING WITH OTHERS
- COPING WITH AMBIGUITY, UNCERTAINTY & RISK
- VALUING IDEAS

PIETE Teaching Compendium

1. Become Creative

1.1. Overview

Creativity as a skill is best developed through practice and active learning, through fun and interaction, exchange of ideas and putting them into practice. This module revolves around an immersive method to boost (entrepreneurial) creativity, narrative- and place-based educational games-design and game-play with the focus on entrepreneurship, both to be performed by the students of the initial teacher education programmes.

In the course of the module, the students will learn about the importance of creativity as a skill in the 21st century, get a glimpse into creative projects ideation frameworks for innovation, and learn about why and how to employ educational game-based learning for entrepreneurial creativity development not only for themselves, but for their future pupils. All that – through practice and co-creation of their own educational game, as well as pilot testing it among their peers.

1.2. EntreComp Competence - Creativity

According to the EntreComp Framework, *'Creativity'* is defined as the ability to *"develop several ideas and opportunities to create value, including better solutions to existing and new challenges; explore and experiment with innovative approaches; combine knowledge and resources to achieve valuable effects"* (Bacigalupo et al., 2016).

The development of imagination and creativity is provoked through practice-oriented, clear challenge-based exercises and learning by doing. For the future teachers, the value of this module is not only to unravel their own entrepreneurial creativity potential but also to find tools/methods with the desire to translate it into the school classrooms. Translating a wider approach to enterprise/entrepreneurship education (QAA, 2018) into a specialised module scale, this module focusses on:

- 'learning about' the importance of (entrepreneurial) creativity as a competence as a transversal skill of tomorrow and creative process frameworks,
- 'learning for' (entrepreneurial) creativity for oneself and educational practices via game-based approaches, and
- 'learning though' designing and testing their own educational games with the focus on entrepreneurship.

Other competences touched upon: *'Working with others'*, *'Coping with ambiguity, uncertainty and risk'*, *'valuing ideas'*.

1.3. Learning Goals

The students are set to reach the following *objectives*:

1. Students recognise the importance of "creativity" as a transversal 21-century competence for their personal and professional development and entrepreneurial mind-set development
2. Students recognise the importance of "creativity" as a transversal 21-century competence for their future pupils' development regardless of the subject area
3. Students are able to understand the process of creative inquiry and are able to use creative process and innovation frameworks (design thinking, double diamond, foresight, etc.) for generating ideas and transforming them into products (educational game in this case)
4. Students can develop, test and refine multiple ideas that create value for others (educational game in this case)
5. Students understand the value of game-based learning for the entrepreneurial creativity competence development and have gained expertise in testing the pedagogy
6. Students develop other interrelated EntreComp competences

1.4. Teaching / Learning Methods

- **Pedagogy introduced and practiced:** Game-based learning for entrepreneurship education and creativity development
- **Teaching approach within the module:** Flipped classroom

The student (student teams) is the main creator and executor of the activities within this module. Adopting the approach of flipped classroom, where the students study the materials on their own before class and translate their learnings into the exercises throughout the class opens more possibilities for creative inquiry.

Useful resources:
- [Brief intro to flipped classroom](#)
- [World Journal on Educational Technology Current Issues – Flipped Classroom (article)](#)

1.5. Activity

The main aim of the module on creativity is two-fold:
- To provoke the entrepreneurial creativity of the students themselves through educational game-design and game-play; and
- To provoke the desire/develop confidence of the students to utilise the educational game-design with the focus on entrepreneurship for boosting the pupils' creativity in their future teaching practices.

To intensify the creative inquiry with practice-oriented exercises and also create tangible outcomes from the module for the students, we suggest employing reversed game-based

learning techniques. We envision the students themselves designing narrative-based educational games that revolve around entrepreneurship and pilot-testing them with the peers.

Within this module, the students are encouraged to not only use their imagination (and subject expertise) while composing the educational games for their peers, but also think creatively while solving the puzzles of others.

Regardless of the format of the game chosen, the module pre-supposes the completion of a number of steps: (1) introduction of the focal content for the module and the activity; (2) introduction of the format of the activity and the technical aspects; (3) implementation of the student team-work and development of the games based on the given content; (4) testing of the games among peers and feedback; (5) refinement of the games based on the peer-feedback; (6) final evaluation and module reflections.

Below are the suggestions for the narrative-based game formats that the students can create:

Format 1: Educational Escape box with the focus on social entrepreneurship – societal challenges (face-to-face, blended)
- students create educational escape box(es) (course content-related/ generic) to be completed by the peers.

Format 2: Place-based educational (start-up/enterprise management) role-play game within a fixed scenario (face-to-face, blended)
- students create a physical future-oriented role-play game based on a challenge that needs to be resolved by the peers, who assume various roles.

1.6. Role of the Educator

Practice what you preach – Student-centred approach: At the core of the activity is the student and the team. The educator is a facilitator, who provides the introduction to the focal content and the mechanics of the activity to be developed (the game), as well as monitors the progress of the teams. This is ideally introduced as a methodology pack before the module for the students to work ahead that contains the theoretical foundation as well as the intro to the educational game design (based on the format).

Importantly, within this module the students should also take the responsibility of the facilitator during the testing of their own games, as well as critical evaluator of other teams' games. The educator can navigate and serve as a mentor throughout the process as well as set the framework, the deadlines and the assessment criteria.

1.7. Contents

As the game development is a creative project on its own, it might be useful for the students to get understanding of approaches and methodologies for the organisation of the creative process and innovation:

1. Creativity, innovation and entrepreneurship – intro
   Useful resources:
   - [TedEx Talk - Creativity, innovation and entrepreneurship: Glenn Gaudette](#)
   - [Ken Robinson "Out of Our Minds: Learning to be Creative" – keynote](#)
   - [How Entrepreneurial Creativity leads to Innovation - Cleverism](#)
   - Creativity test for effective collaboration – [Creative Types Adobe](#)

2. Design thinking model - intro
   Useful resources:
   - [Interaction Design Foundation – Design thinking brief](#)
   - [Stanford resources on design thinking](#) – basics

3. Convergent/divergent double diamond model for innovation - intro
   Useful resources:
   - [Design Council Double Diamond Model Framework](#)

4. Foresight – intro
   Useful resources:
   - [Thinking Futures – Foresight approaches](#)

5. Basics of game-based learning
   Useful resources:
   - [Whitton, N. (2018). Playful learning: tools, techniques, and tactics (article).](#)
   - [TEDeX Talk - The Effective Use of Game-Based Learning in Education | Andre Thomas (video)](#)
   - [Gamification vs. Game-based learning – University of Waterloo](#)

Game-based learning for entrepreneurship education related content:

Format 1: Educational Escape box with the focus on social entrepreneurship – societal challenges

Educational escape rooms are becoming increasingly popular among educators as, among practicing the content of the course and other transversal skills, escape rooms stimulate the participants ability to out-of-the-box thinking (Karageorgiou et al.,2019), fostering entrepreneurial mindset, creativity and critical thinking and using all these skills collaboratively (Cruz, 2019).

Because of the limited resources and space, in the educational settings escape room concept is often transformed into an escape box, where students solve various puzzles to open boxes and find the lock to opening the door. Normally, the game is built on the content-related narrative with a challenge (a problem).

Potential narratives can revolve around sustainable development goals, etc.

Useful resources:
- [Example framework - EscapED framework:](#)
- [EscapeED video series](#)
- [Innovation and Problem Solving Teaching Case: The Breakout Box – A Desktop Escape Room (Duggins, R., 2019)](#)
- [Escape Room for social Entrepreneurship project](#)

Format 2: A place-based educational (start-up/enterprise management) role-play game within a fixed scenario

Blatner (2009) described role-playing as "a natural vehicle for learning", where by assuming the roles in a fixed scenario the learners utilise not only active and tacit knowledge on the subject, but also develop a set of transversal skills, including creativity in order to "step outside their comfort zone". Role-play games differ from simulation games as the participants on the former are expected to assume characters with their limitations and potential for a fixed scenario, while simulation games (in addition to being mostly delivered online) place more emphasis on practicing specific processes. For the role-play, the narrative might involve a challenge/ a problem to overcome, while the characters might represent different stakeholders with different interests.

Useful resources:
- [The use of business simulation games in teaching and learning – Chai-Lee Goi (article)](#)
- [Gamification Methods For Educational Management Project](#)

1.8. Implementation/Integration, Extent, ECTS

This module is suitable for any relevant course from the curriculum of initial teacher education, highly suitable for pedagogy and didactics related courses as well as pure entrepreneurship courses. The module can also be delivered on its own as an extra-curricular course/ intensive workshop.

- If the course is integrated into various disciplinary courses: the integrated module can be of a shorter nature and focus specifically on the course content. It can be introduced as a summative exercise at the end of the course.
- If the module is integrated into specialised pedagogy/didactics related courses: the module can be of a longer nature, where the theoretical foundation of game-based learning for entrepreneurial creativity is introduced in more details.
- If the module is stand-alone and specifically focused on entrepreneurship education, the theoretical foundation of innovation frameworks can be introduced in more details.

The format of this module can be flexible. It can vary from a two-day boot camp to an extra or over-curricular course format, which may stretch along the whole study program. A work-shop of one or two days can be granted with 2 ECTS for example, while a stretched format along the study may also be granted with up to 8 ECTS. It is the best, however, to envisage several sessions with sufficient intervals for the students to prepare for the implementation of their designed games.

If the module is integrated into an existing course, it depends on the responsible lecturer what value to assign to the activity. It is recommended to allow approximately 2- 3 hours of pre-reading, 2 hours of classroom intro and initial brainstorming, at least 5 hours of teamwork and design of the educational game (including the materials preparation), 1 hour consultation with the lecturer, and 45 min – 1 h for testing a game (depending on the number of student teams in the classroom and possibility to test some of them simultaneously).

1.9. Evaluation

Output-based evaluation:
- a developed game by the students themselves: format, innovativeness, relevance, success of the test (peer feedback), final presentation (implemented peer feed-back) – 60%
- participation in the test of other games by the peers– 30%
- post-evaluation completion (reflection and feedback) – 10%

1.10.   References

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