



"Gamified eco entrepreneurship education"



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## Introduction



The aim of this document is to look at the digital gamification and digital role model education methodology in teaching entrepreneurship topics to youth in European and Western Balkan countries, members of the BC4ESE project consortium. One of the aims of this publication is to develop gamified digital educational resources, tools and activities that teach and promote social and eco-entrepreneurship among young people, while the ultimate goal is to encourage more young people to start and develop eco-social enterprises and ensure that they have access to appropriate assistance and support in every phase of their entrepreneurial path.

ADP-Zid and Hub Nicosia are the responsible partners for the production of this deliverable with the support of all of the partners of the project: coordinating partner CEDRA Split (Croatia), Local Development Agency Prozor-Rama and CDP Globus (Bosnia and Herzegovina), Young Ambassadors (Serbia), Diesis Network (Belgium) and CSO (Montenegro).

This document is divided into two main parts: the general background information about the concept of gamification and game-based learning and their application in entrepreneurship education and each country's analysis.

For each country, we have focused on the following points:

- a. Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth
- b. Good practice examples on gamified digital educational resources, tools and activities that teach and promote social and eco-entrepreneurship to youth in partner countries.

## About the project...

"The main focus of the BC4ESE project is the establishment of an innovative framework for the intersectoral eco-social development that will allow local associations and young people to actively contribute to smart, sustainable and inclusive development of targeted areas in Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Belgium and Cyprus".

Local organisations need support in raising their capacities so they can be spearhead in implementing new non-formal learning activities. By fostering cooperation between eight partners; the project will contribute to the development of cross-border cooperation and raise the capacity of organisations both from Program and Partner countries.

Through the BC4ESE project we aim to build capacities for the promotion of eco-social entrepreneurship (ESE) and the development of non-formal education tools and methodologies. This will engage young people to take part in ESE through the development of their soft, entrepreneurial and digital skills thus enabling behavioural changes for individual preferences, cultural values and awareness for sustainable development and lifestyles.

## Methodology

Prior to the research, ADP-Zid and Hub Nicosia prepared a set of guidelines and templates for developing a country analysis report. The partners have used several sources in conducting the research. Please find more information below.

The Global landscape on digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth was developed based on official sources and studies, as well as documents and studies from research centres, think tanks and associations.

For the desk research carried by each partner on their country, they were expected to analyse existing state of matter regarding digital gamification methodology of the country and digital role model education methodology in teaching entrepreneurship topics to youth and research on good practice examples on gamified digital educational resources, tools and activities that teach and promote social and eco-entrepreneurship to youth. To do so, they used official sources, national studies and statistics data, as well as academic literature. Besides the scientific research and analysis, the partners have also developed scenarios for gamified digital educational resources, tools and activities that teach and promote social and eco-entrepreneurship to youth.

## Global landscape of digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth and good practice example

### I The concept of entrepreneurship, social entrepreneurship and eco-social entrepreneurship

During the first project year, the project consortium conducted research on eco-social entrepreneurship in Western Balkan and European countries. Here is the detailed study - [Eco-social entrepreneurship analysis: needs, obstacles and good practices](#).

### II The concept of gamification and game-based learning

Nowadays, game concepts are being increasingly incorporated in areas other than just standard playing environments. It can be said that the basic principle of every game is to reach a certain goal. Regardless whether this goal is to win a prize, accomplish an assignment, beat the competitor, or to be ranked first in the leaderboard, it is, without doubt, a mechanism that involves motivation, engagement, emotion and certain behavioral pattern. Having said that, it is not surprising that game elements are being implemented in non-game contexts like marketing, business, e-commerce, education, work environment, social media, etc.

## 1. Gamification

According to Werbach and Hunter (2012<sup>1</sup>), **Gamification**<sup>2</sup> is defined as the use of game elements and game design techniques in non-game contexts. It is based on the success of the gaming industry, social media, and decades of research in human psychology. Basically, any task, assignment, process or theoretical context can be gamified (Werbach & Hunter, 2012). The main objective of Gamification is to increase the participation of a person during an activity and provide motivation by integrating game elements such as prizes or awards and leaderboards. According to Figueroa (2015)<sup>3</sup>, plenty of uses have been given to Gamification previous to the education field. Some uses include: employee motivation, conceptualization of the concept of energy preservation, to beat and understand diseases, create healthy competition, to promote charitable donations, promote customer loyalty, education, language learning, among others.

### 1.1. Game Elements and Components

According to Sailer, Hence, Mandl and Klevers (2013), video games follow a design pattern which integrates certain elements or components. This is crucial at the time of designing a game and it's essential towards the main objective of Gamification, which is motivation. Some of these components include points, badges, leaderboards, progress bars/progression, performance graphs, quests, levels, avatars, social elements, and rewards/rewards system. All these elements have different purposes and can be adapted to basically any work, business or education-related environment.

<sup>1</sup> Werbach, Kevin & Hunter, Dan (2012), *For the win: How game thinking can revolutionize your business*. Wharton Digital Press, United States.

<sup>2</sup> Nick Pelling coins the term 'Gamification' in 2002.

<sup>3</sup> Jorge Francisco Figueroa Flores (2015), *Using Gamification to Enhance Second Language Learning*, Digital Education Review Volume 27, June 2015 ISSN 2013-9144

## 1.2. Motivation and Gamification

There are six principal perspectives in motivational research that have been linked to Gamification: Trait, Behavioristic Learning, Cognitive, Self-determination, Interest, and Emotion explained in the work of Sailer, Hense, Mandl and Kelvers (2013<sup>4</sup>). Each perspective has its own characteristic; for example, the Trait perspective observes motives as individual characteristics and some of the important ones that it presents include achievement, need for power, and affiliation. On the other hand, Behavioristic Learning is seen as a result of previous experiences, including past positive or negative reinforcement or stimulus-response bonds. An application of these toward enhancing L2 and Gamification could be to use reflexive journals or sharing experiences through the creation of an avatar. The Cognitive perspective perceives motivation as a means-ends analysis that is dependent on situation-specific goals, and expectancies regarding the outcome of the situation itself, expectancies of the consequences of the outcome, and the subjective value. The perspective of Self-determination postulates the psychological needs for competence, autonomy, and social relatedness. The fulfillment of these needs is necessary for intrinsic motivation and can be extrinsically perceived by the fulfillment of the needs. On the other hand, Interest is seen by researchers as an affective and cognitive variable and evolves in specific content and interaction with the environment. Finally, Emotion can be influenced by instructional strategies as it is outlined by researchers as an emotional design of instruction, which works with motivational mechanisms.

## 2. Game based learning (GBL)

In the 20th century, game-based learning was introduced as a pedagogical approach at the university level in the 1970s by Jean Piaget (1973) and Lev Vygotsky (1978).<sup>5</sup> The GBL concept has a long prehistory with board games like Kalaha, Xiangxi, Chess and other forms of game having been used for thousands of years in educational contexts, training strategic and tactical thinking, as well as language skills, mathematics and other subjects. Games and play-based learning were well-known didactic ideas in ancient Greece and during the Roman Empire.<sup>6</sup> It is a natural evolution from traditional methods of teaching, which include static, non-interactive elements, such as textbooks, chalkboards, and lecturing at students rather than exploring with them. It's a form of experiential engagement in which people learn by trial and error, by role-playing and by treating a certain topic not as "content" but as a set of rules, or a system of choices and consequences. Games in education provide a vehicle by which students can explore, solve problems, attempt challenges, make decisions, and educational games contribute to learning broadly (Mead, 2011). GBL has been shown to be an effective means of enhancing both learning motivation and academic performance.

In order to plan a proper curriculum and achieve successful learning outcomes with GBL, certain principles and mechanisms must be taken into consideration.

### 2.1. Mechanisms of GBL

Games can help learners be in an effective learning environment that is at ease and with stronger learning motivation so that learners can use digital game-based learning to develop the basic techniques and knowledge in specific fields necessary in the digital technology age. Game-based

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<sup>4</sup> Sailer, Hense, Mandl and Kelvers (2013), *Psychological Perspectives on Motivation through Gamification*,

<sup>5</sup> Hellerstedt A, Mozelius P, "Game-based learning - a long history" (2019), Stockholm University and Mid Sweden University, Sweden

<sup>6</sup> ibid.

learning gives people the same feeling as playing computer games. In the learning process, we observe two important elements which are interesting and fun.

GBL is increasingly used for the following areas:

- Subject matter that is really difficult
- Audience that is hard to reach
- Difficult assessment and certification issues
- Complex understanding process
- Sophisticated “what if” analyses
- Strategy development and communication
- Increasing the learning interest and motivation of students

Table 1. Gamification vs. Game-based learning

Comparison points	Gamification in education	Game based learning
Concept	Gamification is the idea of adding game elements to a non-game situation. They reward users for certain behaviors	Use of games to enhance the learning experience
Objective	Cultivate motivation by playing	To achieve in the game motivates students
Challenge	Looking for a new way to approach challenges	Challenges as part of the game must be solved
Character	Player avatar with a weak story	Characters in a specific situation
Techniques	<ol style="list-style-type: none"> <li>1. Progressing to different levels</li> <li>2. Scores</li> <li>3. Avatars</li> <li>4. Virtual currencies</li> <li>5. Competition with friends</li> </ol>	<ol style="list-style-type: none"> <li>1. Motivation</li> <li>2. Relevant practice</li> <li>3. Specific timely</li> <li>4. Story, emotional</li> <li>5. Game goals, challenges</li> </ol>
Benefits	<ol style="list-style-type: none"> <li>1. Better learning experience</li> <li>2. Better learning environment</li> <li>3. Instant feedback</li> <li>4. Prompting behavioral change</li> <li>5. It can be applied to most learning needs</li> </ol>	<ol style="list-style-type: none"> <li>1. Increases a child’s memory capacity</li> <li>2. Computer, simulation fluency</li> <li>3. Helps with fast strategic thinking, problem-solving</li> <li>4. Develops hand-eye coordination</li> <li>5. Skill-building (e.g., map reading)</li> </ol>
Rewards	Earn experience, points and level up	Intrinsically rewards; Losing may or may not be possible because the point is to motivate people to take action and learn
Levels, costs	Cheaper, easier	Expensive, hard
Content	Features are added to the LMS or any other system	Usually morphed to fit the story and scenes of the game



Source: Rula Al-Azawi, Fatma Al-Faliti, and Mazin Al-Blushi, *Educational Gamification vs. Game-based Learning: Comparative Study*, (2016), International Journal of Innovation, Management and Technology, Vol. 7, No. 4, Available at: [https://www.researchgate.net/publication/308613589\\_Educational\\_Gamification\\_Vs\\_Game\\_Based\\_Learning\\_Comparative\\_Study](https://www.researchgate.net/publication/308613589_Educational_Gamification_Vs_Game_Based_Learning_Comparative_Study)

Some gamification and game-based learning tools: Duolingo, Minecraft, Second Life, Coursera, Brainscape, Kahoot, Credly, OpenBadges, Immediate Feedback Assessment Technique, TopHat. Online gamification strategies: Discussion boards, Quizzes; In-class gamification strategies: Jeopardy; Classroom response systems: Kahoot, TopHat; Out-of-class gamification strategies; Game-based learning environments: Trivia Crack; Game-enhanced learning environments: World of Warcraft, Second Life.

### III Entrepreneurship Education

Entrepreneurship education is defined as the process of equipping students/youth with an enhanced capacity to generate ideas and skills to make them happen. Entrepreneurship education equips students/youth with the additional knowledge, attributes and capabilities required to apply these abilities in the context of setting up a new venture or business<sup>7</sup>. Entrepreneurship education, in general, seeks to provide students/youth with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of settings. The context of entrepreneurship education defines the collection of formalized teachings that informs, trains, and educates anyone interested in participating in socio-economic development through a project to promote entrepreneurship awareness, business creation, or small business development<sup>8</sup>.

Since 1999, the Global Entrepreneurship Monitor (GEM) studies entrepreneurship and aims to understand the association between entrepreneurship and economic development. The studies and the reports of Global Entrepreneurship Monitor highlight the great importance that entrepreneurship has acquired as a means for the creation of jobs, the generation of wealth and social capital, and indicate that economic development and growth are tightly linked to entrepreneurship.

Entrepreneurship education is an important topic for all European countries in preparing people who can contribute to the ability of an economy to innovate—to create new businesses and new ideas. The “Entrepreneurship 2020 Action Plan”, developed by the European Commission in 2013, provides a roadmap to promote entrepreneurship in Europe and highlights the importance of teaching and practicing entrepreneurship from the early kindergarten years up to the university levels. The plan focuses on promoting entrepreneurship education as a way to develop an entrepreneurial culture, leading to further economic development and sustainability.

Given the importance of entrepreneurship, the necessity to formulate efficient Entrepreneurship education frameworks and training programs arises. In general, entrepreneurship education aims to refer to the teaching of the domain of entrepreneurship and the training of entrepreneurs. It implies activities directed towards developing the students’/youth’ ways of perceiving their world, themselves and others, and how they handle their resources. A main aspect that programs on entrepreneurship education need to include, concerns the formulation of active entrepreneurs that extend the theoretical knowledge of managing a business. In most entrepreneurship education programs, traditional methods are utilized and are based on theoretical lectures, something that allows learners to properly grasp theoretical concepts and understand the characteristics of entrepreneurial activities.

<sup>7</sup> Quality Assurance Agency, *Enterprise and Entrepreneurship Education: Guidance for UK Higher Education Providers*; QAA: Gloucester, UK, 2012.

<sup>8</sup> Unesco, International Labour Office, *Towards an Entrepreneurial Culture for the Twenty-First Century: Stimulating Entrepreneurial Spirit through Entrepreneurship Education in Secondary Schools*; Unesco: Paris, France, 2016.

However, these approaches lack in assisting students/youth in properly understanding the consequences of actions and decisions made in the context of formulating and running a business<sup>9</sup>.

So, innovative additional teaching approaches and methods need to complement theoretical training and promote students'/youth' active learning as well as enhance students'/youth' problem-solving and social skills<sup>10</sup>. In this regard, it is pointed out that traditional formal learning needs to be complemented with informal learning methods utilizing game-based learning and simulations. Furthermore, studies point out that practice-oriented approaches need to be included in programs as they are more appropriate for teaching and learning entrepreneurship. Finally, from a content point of view, it is pointed out by studies that entrepreneurship education programs need to include three important objectives: (1) teach students/youth to understand the domain of entrepreneurship, (2) learn to act in entrepreneurial ways and (3) ultimately become successful entrepreneurs<sup>11</sup>.

## IV Gamification, Game-Based Learning and Virtual Reality in Entrepreneurship Education

*Current trends, challenges and opportunities in using gamification, game-based learning and virtual reality in entrepreneurship education*

As organizations seek new ways of strengthening their connection to both users of their products/services and their employees, gamification and the use of game-based elements are becoming increasingly important and commonplace. The use of specific components, mechanics, and dynamics can be designed into a new system or as an adjunct to an existing system; in an attempt to improve user engagement by encouraging a sense of fun, passion, and play.

It is well highlighted that entrepreneurship education programs need to incorporate new educational technologies in order to enhance their efficiency, attractiveness and most of all their learning outcomes<sup>12</sup>.

Gamification defines the utilization of game design and principles in non-game contexts. It is considered a motivation-based approach that aims to increase target audience engagement and motivation, as well as improve learning benefits and the achievement of desired results via active involvement<sup>13</sup>.

In general, the rationale for utilizing gamification methods in entrepreneurship education relies on Self-Determination Theory principles<sup>14</sup>. In this context, the use of game-like principles and characteristics in learning activities can formulate immersion in a very similar way to games, where participants can learn inductively and make decisions, something that can result in enhancing

<sup>9</sup> Buzady, Z.; Almeida, F. FLIGBY—A Serious Game Tool to Enhance Motivation and Competencies in Entrepreneurship. In Informatics; Multidisciplinary Digital Publishing Institute: Basel, Switzerland, September 2019

<sup>10</sup> Ibid.

<sup>11</sup> Grivokostopoulou, F., Kostas, K., Perikos, I., *Examining the Impact of a Gamified Entrepreneurship Education Framework in Higher Education*, Computer Engineering and Informatics Department, University of Patras; Greece, 2019, available at: [https://www.researchgate.net/publication/336524113\\_Examining\\_the\\_Impact\\_of\\_a\\_Gamified\\_Entrepreneurship\\_Education\\_Framework\\_in\\_Higher\\_Education](https://www.researchgate.net/publication/336524113_Examining_the_Impact_of_a_Gamified_Entrepreneurship_Education_Framework_in_Higher_Education)

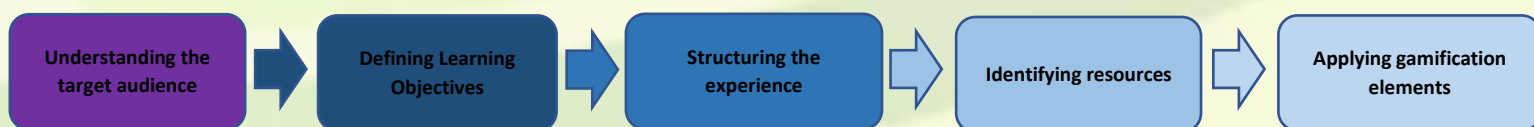
<sup>12</sup> Wu, Y.; Yuan, C.H.; Pan, C.I. *Entrepreneurship Education: An Experimental Study with Information and Communication Technology*. Sustainability 2018

<sup>13</sup> Iscenco, A.; Li, J. *The game with impact: Gamification in environmental education and entrepreneurship*. Mold. Environ. Gov. Acad. 2014. Available online: [https://www.changemakers.com/sites/default/files/competition\\_entry\\_form\\_files/alexandr\\_iscenco\\_johnathan\\_li\\_-\\_the\\_game\\_with\\_impact\\_-\\_full\\_0.pdf](https://www.changemakers.com/sites/default/files/competition_entry_form_files/alexandr_iscenco_johnathan_li_-_the_game_with_impact_-_full_0.pdf), (accessed on 27 May 2019).

<sup>14</sup> Deci, E.L.; Ryan, R.M. *Overview of self-determination theory: An organismic dialectical perspective*. In *Handbook of Self-Determination Research*; University of Rochester Press: Rochester, NY, USA, 2002

retention and their creativity<sup>15</sup>. Specifically, gamification can engage learners in activities and training scenarios that can stimulate their motivation, increase their engagement and most of all enhance their learning interest, experience and knowledge construction. In the literature, there are some works on gamification and entrepreneurship education, but the adoption of gamification in entrepreneurship education is considered to be quite residual and little has been done on the multidimensional examination of their interrelation and interaction. Indeed, it is pointed out that gamification and entrepreneurial intentions constitute two relevant topics in the business literature that are still lacking empirical investigation. So, the formulation of a concrete framework for entrepreneurship education that will incorporate gamified learning activities and the assessment of their impact on students'/youth' entrepreneurship learning and learning experience is highly desired. In an entrepreneurship education context, gamification is mainly applied in order to motivate learners and engage them with applications, activities and services by making them more attractive, efficient and fun to use. Research studies on the utilization of gamification and serious games in entrepreneurship education point out that learners can perceive simulation gameplay as a very useful exercise that can extend their knowledge on concepts of entrepreneurship. The game-based learning activities can help students gain necessary skills, helping them to tackle everyday obstacles on their entrepreneurial pathways.

In order to have a successful Gamification teaching and learning experience, where the 21<sup>st</sup>-century learner becomes engaged and motivated, the educator needs to plan accordingly. This requires that every instructor follows the five-step model for educational gamification.



### Impact of using gamification, game-based learning and virtual reality in entrepreneurship education

Entrepreneurship has never been more important than it is today. Entrepreneurship education constitutes a top priority in policy agendas across the globe as a means to promote economic growth, fight unemployment and create social capital. Given the importance of entrepreneurship, the necessity to formulate efficient entrepreneurship education frameworks and training programs arises. It is noticed that creating an effective educational game entails much more than simply creating an engaging game and building age-appropriate educational content. Through gamification, we can not only create a mindset that encourages youth to try new things and not be afraid of failing but also can enable youth to engage in enjoyable experiences for the purpose of learning. In addition, gamification is an innovative approach to learning, as new technologies and applications are continuously emerging, it is still developing.

The findings of the studies done so far suggested a significant positive impact of gamification on knowledge of gamification, creativity, motivation to learn entrepreneurship, and communication and interaction skills of students and youth. The study also found that the students and youth were interested in gamification and perceived it as an effective teaching method. Furthermore, the students and youth perceived that gamification involved them in active learning opportunities, enhanced their passion for and satisfaction with learning and improved their knowledge about new technologies. The

<sup>15</sup> Ruiz-Alba, J.L.; Soares, A.; Rodríguez-Molina, M.A.; Banoun, A. *Gamification and entrepreneurial intentions*. J. Small Bus. Enterp. Dev. 2019

author concluded that lecturers can effectively use gamification to teach entrepreneurship if they precisely describe the instructions of the system to students and youth at the beginning of the course. In addition, the study suggested if gamification includes different elements such as points, levels, quests, it makes all students/youth and specifically passive ones interested in learning. In addition, the gamified course improved students'/youth' motivation, engagement and interest in entrepreneurship. The students/youth also perceived the course as effective in introducing difficult operational processes and topics and developing their entrepreneurial knowledge and skills. These studies examined the short-term effects of gamification and our understanding about the long-term impact of the methods in cultivating students'/youth' entrepreneurial capabilities is limited. Additionally, the majority of the researchers in this study found a positive effect of SGs (Serious Games), simulation and gamification on students' entrepreneurial qualities and knowledge. This finding introduces these methods as to be effective for teaching entrepreneurship in higher education. While SGs and gamification enhance students'/youth' capabilities for effective teamwork it is found that all of the studies examined the impact of the methods on individual students'/youth' entrepreneurial learning and capabilities. Therefore, there is a huge gap in our knowledge on the impact of SGs and gamification on the team level entrepreneurial qualities of students.

The gamification, game-based learning and virtual reality educational environment utilizes educational infrastructure and pedagogical approaches that are based on gamification principles, which allows students to study/youth in immersive ways as well as in game-based learning activities on real challenges that can be found in business environments. The scenarios can help students gain the necessary skills, helping them to tackle everyday obstacles on their entrepreneurial pathways. An experimental study was performed to explore the learning efficiency of the environment and the gamified learning activities and assess their learning impact on student's motivation and attitude as well as their overall learning experience. The evaluation study revealed quite interesting results and findings indicate that the framework offers efficient gamified learning activities that increase students' motivation and assist in the formulation of entrepreneurship mentality, skills and competences. The results highlight that gamified learning activities that engage students in realistic situations which require students to put theoretical knowledge into practice have a greater impact on student learning with regard to entrepreneurship concepts and also their comprehension and learning experience. Additionally, gamified learning activities are applicable in the integration, social inclusion and raising capacities of marginalized communities.

## European and Western Balkan Landscape of digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

This chapter covers the background analyses of the Western Balkan countries (Montenegro, Bosnia & Herzegovina, Croatia, and Serbia), Belgium, and Cyprus. For each country, we will focus on the following points:

- ◇ Overview of the existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth;
- ◇ Current trends, challenges and opportunities in using gamification, game-based learning and virtual reality in entrepreneurship education;
- ◇ Good practice examples on gamified digital educational resources, tools and activities that teach and promote social and eco-entrepreneurship to youth in partner countries.

## Bosnia and Herzegovina

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

The term “gamification” is not represented in public discourse in Bosnia and Herzegovina. By entering the terms “gamification” and “gamification and entrepreneurial learning in BiH” in Internet search engines, no sources related to this topic were identified through the research. It can be concluded that gamification as a teaching method is generally not used enough in Bosnia and Herzegovina.

Given that educational institutions have faced a number of challenges in the implementation of curricula in recent years, there has been a greater use of information and communication technologies in schools and faculties. Learning through game(s) could significantly contribute to the quality and diversity of educational content, especially in economic schools and faculties where the simulation of business circumstances and situations is important.

In accordance with the constitution, the jurisdiction for education and training in Bosnia and Herzegovina falls within different levels of governance. At the country-wide level: Ministry of Civil Affairs with its Department for Education; Agency for Pre-primary, Primary and Secondary Education (APOSO) with its VET Department. At the entity/district level, Federation of Bosnia and Herzegovina (FBiH): Ministry for Education and Science; 10 cantonal ministries of education; Republika Srpska: Ministry for Education and Culture; Brčko District: Department for Education. While stakeholders at all levels declare that digital skills and competences (DSC) are of great importance for education and training in Bosnia and Herzegovina, such skills and competences are still in the development phase. The Framework Law on Vocational Education and Training (VET) also includes a reference to the importance of developing DSC. Each level of governance has its own legislation on VET and, to a general extent, they all address DSC as being important for VET.<sup>16</sup>

The state-level working document ‘Priorities in integrating entrepreneurial and digital competence into education systems in Bosnia and Herzegovina 2019–2030 aims to bring DSC in line with the European Digital Competence Framework (DigComp) with a short-term goal of integrating DSC into International Standard Classification of Education (ISCED) levels 1, 2 and 3. The Priorities 2019–2030 should be a basis for the development of policy and reference documents at the different governance levels (Ibidem).

Priorities in the integration of entrepreneurial learning and entrepreneurial key competences in education systems in BiH (2021 - 2030) was adopted - The aim of the document is to harmonize the priorities and next steps in the development of entrepreneurial learning and entrepreneurial competence in accordance with the relevant key EU policies defined in the European Framework for Entrepreneurial Competence. The activities on the drafting of the document were realized with the involvement of the creators of educational policies and educational experts - representatives of the competent ministries, pedagogical institutes, educational institutions, and teachers.<sup>17</sup>

<sup>16</sup> European Training Foundation, DIGITAL FACTSHEET DECEMBER 2019

[https://www.etf.europa.eu/sites/default/files/2020-06/digital\\_factsheet\\_bosnia\\_and\\_herzegovina\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2020-06/digital_factsheet_bosnia_and_herzegovina_0.pdf)

<sup>17</sup> <https://eurydice.eacea.ec.europa.eu/national-education-systems/bosnia-and-herzegovina/ongoing-reforms-and-policy-developments> accessed on 02/12/2022

DOL has been used to varying degrees in different parts of the country, mainly depending on the infrastructure of vocational schools, the financial support available from relevant ministries, and the capacities and competences of VET teachers.<sup>18</sup>

Several online platforms for teachers (eTwinning<sup>19</sup>, EPAL<sup>20</sup> and Moodle) are used in the country. These enable teachers to exchange teaching materials and experiences and to participate in networks of European educators.

At least 44 IVET and technical schools in Bosnia and Herzegovina offer training for ICT-related occupations<sup>21</sup>, and at least 20 schools offer ICT technician as a qualification at ISCED level 3A.<sup>22</sup>

Since 2017 there has been an Online Learning Week in secondary schools (first week of November) in Sarajevo Canton. This is currently implemented in only 18 secondary schools, 11 of them vocational schools, owing to the lack of technological capacities. The schools that participate in the event use online platforms such as Google for Education, Moodle or FileZilla, and some vocational schools have developed their own programmes (Ibidem).

In the 2018/19 school year the FBiH Ministry for Education and Science supported the purchase of interactive whiteboards, which have been used in a number of vocational schools in FBiH from 2019. Interactive whiteboards allow teachers to respond to the needs of contemporary teaching, make lessons interactive and support critical thinking among students. The vocational school in Fojnica uses them for mathematics, while the vocational school in Travnik makes the subject of geometry more interesting and interactive through the GeoGebra digital tool (Ibidem).

One of the interesting and relevant for this study is the survey research that has been conducted on a sample of 180 lectures at several faculties of economics in numerous European countries. The main goal of the paper was to investigate what is the level of usage of simulation games at faculties of economics, with the specific goals of comparing simulation games to the other types of teaching and discuss their advantages as well as barriers towards their usage. 4% of respondents were from Bosnia and Herzegovina. Around half of respondents indicate I do not use simulation games in class, but I intend to start using them soon (54%). Approximately one-fifth of the respondents currently use simulation games in teaching (19%) and 12% of respondents used simulation games previously, but not now. There is also 16% of respondents who do not use simulation games in class and do not intend to start using them at all. Most of the respondents agree that simulation games are very useful in Management (21%) as well as for Marketing (19%), Finance (18%) and Entrepreneurship (17%).<sup>23</sup>

<sup>18</sup> European Training Foundation, DIGITAL FACTSHEET DECEMBER 2019

[https://www.etf.europa.eu/sites/default/files/2020-06/digital\\_factsheet\\_bosnia\\_and\\_herzegovina\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2020-06/digital_factsheet_bosnia_and_herzegovina_0.pdf)

<sup>19</sup> <https://aposo.gov.ba/bs/erasmus/etwinning/>

<sup>20</sup> <https://aposo.gov.ba/bs/erasmus/epale/>

<sup>21</sup> Source: [www.eduinfo.ba/privatne-srednje-skole/sarajevo](http://www.eduinfo.ba/privatne-srednje-skole/sarajevo). The information was not provided by national institutions, so there may be more schools and IT programmes.

<sup>22</sup> European Training Foundation, DIGITAL FACTSHEET DECEMBER 2019

[https://www.etf.europa.eu/sites/default/files/2020-06/digital\\_factsheet\\_bosnia\\_and\\_herzegovina\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2020-06/digital_factsheet_bosnia_and_herzegovina_0.pdf)

<sup>23</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U., Čurlin, T. (2020), *Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business*. ENTRENOVA 10-12, September 2020, Virtual conference, Croatia, available at: <https://hrcak.srce.hr/250935?fbclid=IwAR00E2PSQqjms8Ng-oG6qYF8R-8iNPtM6XaA0sFsDXLJc1FhUWlKqukc-Q>

## Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level

Bearing in mind the positive influence that learning through game can have (presented above), it is necessary to promote possibilities offered by this method of teaching to the wider public in Bosnia and Herzegovina.

It is necessary to work on raising awareness of modern teaching methods, especially in economic schools and faculties, where the simulation of entrepreneurial circumstances is important for quality acquisition of knowledge and development of competences.

Gamification needs to be treated through a systemic approach as part of broader educational reforms and digitalization of the society. It is necessary to work on strengthening the capacity of teaching staff to apply new teaching methods, and to create conditions for equipping educational institutions to implement gamification as a teaching method.

In addition, it is necessary to work on familiarizing civil society organizations with the concept of gamification, because during the research no examples of concrete projects in this area were found within the civil sector in Bosnia and Herzegovina.

## Montenegro

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

The fact that gamification is a rarely mentioned topic in Montenegro is signified by the fact that there is little information that can actually be found on this topic. When using online search tools, results that show up on gamification in Montenegro are scarce. If some can be found, they are not related to entrepreneurship, let alone eco-social entrepreneurship. As such, our analyses will focus on gamification as a concept and the way it had been discussed in Montenegro, as well as projects concerning gamification in other sectors as a possibility to expand gamification into eco-social entrepreneurship.

One of the latest mentions pertaining to gamification in Montenegro was during a Spark.me conference in Podgorica, where gamification was talked about in terms of addressing climate change.<sup>24</sup> This topic was the closest to the topic of this research, and it is important to mention not only because of the topic it discussed but because large events like this have the potential to be agenda-setting, which is crucial for new concepts like the gamification of eco-social entrepreneurship. It was mentioned by Pete Blackshaw,<sup>25</sup> who said that gamification is the future, especially the gamification of climate change. He believes there is a considerable intersection between gaming and climate change, which further solidifies the need and idea of promoting and teaching eco-social entrepreneurship by using gamification tools.

However, when discussing and researching digital models of education in Montenegro, there are some significant strides in making available e-platforms for various courses, albeit not related to entrepreneurship. Such platforms can be used as already set out methodologies and frameworks for

<sup>24</sup> Jovanović N., (2022) Did you hear something was flying at the Spark.me 2022 conference?  
<https://digitalizuj.me/2022/06/da-li-ste-culi-da-je-nesto-letjelo-na-spark-me-2022-konferenciji/>, (accessed on 12/15/2022)

<sup>25</sup> ibid



teaching eco-social entrepreneurship. Some of them are Digital Bee <sup>26</sup>(curricula for adults include digital marketing, life skills and databases), Digital School (platform for learning, teaching, communication, and cooperation in the digital environment for children and adolescents)<sup>27</sup> and ICT Cortex Academy<sup>28</sup> offers over 50 courses mostly concerning information technology.

While gamification, as it is defined, can include various methods, such as rewards, a few examples can be found in Montenegro that can be considered as gamification of teaching eco-social entrepreneurship. Climathon in Podgorica can be used as an example of gamification in eco-social entrepreneurship. Climathon is a hackathon event designed to fight climate change in Montenegro. Climathons' mission is to connect cities, towns, and regions with their citizens to catalyze systemic change and to create climate-resilient communities.<sup>29</sup> The part where entrepreneurship education comes into play is through preparatory training on the explanation of the very hackathon, green transition as a precondition of growth and development of Montenegrin economy, venture capital funds for start-ups which bring solutions for social, economic, and ecological challenges, and as a final part most common mistakes people make in business. However, this hackathon is not simply just training on eco-entrepreneurship. Some element of gamification that this hackathon adopts is the awarding of the best ideas. Of course, this Climathon can't be considered a gamification of entrepreneurial learning because it lacks a connection between gamification models and the adoption of new knowledge, especially concerning entrepreneurial activities. However, it can serve as an example to mobilize people in solving societal and ecological issues in Montenegro, firstly through adopting new skills and raising awareness of the fact that entrepreneurial activities can bring about change. Not only that, but motivation plays a crucial part here in the form of awards and cash incentives to make people interested in this topic.

In some schools, entrepreneurship can be taught as an elective subject. However, there isn't any relevant information that can be found as to what schools teach this subject, but the target audience for the Bar Business Center Handbook<sup>30</sup> for the implementation of entrepreneurial education is students aged from 11 to 14, so we can conclude that it is a subject taught to elementary school students.

Gamification in the tourism sector has been a topic for a research paper that explored the possibilities of using gamification to improve tourist offers. According to the research, paper gamification has multiple benefits. First, gamification will increase the motivation of tourists and employees in tourism to achieve a change in behavior (purchase of a tourist product, efficient work, etc.). Second, gamification will enable tourists and employees in tourism to co-create value and thus encourage internal motivation. Gamification can be applied in tourism through marketing, sales, and encouraging customers (external application) and through human resources, training, productivity improvement, and crowdsourcing (internal application). In the phase of visiting a tourist destination or attraction, a key experience is created. The aim of the carriers of the tourist offer is to influence the formation of a positive experience. The use of gamification can raise the level of satisfaction. <sup>31</sup>

<sup>26</sup> Taken from the platform website: <https://digitalnaakademija.me/po%C4%8Detna> (accessed on 12/15/2022)

<sup>27</sup> Taken from the platform website: [www.digitalnaskola.edu.me/en/index.html](http://www.digitalnaskola.edu.me/en/index.html); (accessed on 12/15/2022)

<sup>28</sup> Taken from the academy website, <https://academy.ictcortex.me/>; (accessed on 12/15/2022)

<sup>29</sup> <https://www.undp.org/montenegro/speeches/climathon-podgorica>, (accessed on 12/14/2022)

<sup>30</sup> Tomašević, I., Vujović, T. (2013) Preduzetnički poduhvati, Business Center Bar, <https://www.bsbar.org/me/category/publikacije-16/preduzetnicki-poduhvati-365> (accessed on 12/13/2022)

<sup>31</sup> Lacmanović D., Pavičević Đ., Tomašević I., Jovanovski S., Raspor A. (2017), Development of innovative tourist offer by using bitcoin technology and the concept of gamification, Business Center Bar, <http://bsbar.org/me/category/publikacije-16/razvoj-inovativnog-turistickog-proizvoda-koriscenjem-bikon-t-362> (accessed on 12/13/2022)

## Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level

To sum up, Montenegro has the potential to use gamification in eco-social entrepreneurship. Firstly, there are many platforms designed for online learning in different segments of information technology. In combination with various resources on entrepreneurship in general mostly by specialized organizations such as the Union of Young Entrepreneurs, Institute for Entrepreneurship and Economic Development, Women's Business platform, Faculty of Economics of the University of Montenegro, Faculty of Polytechnics of the University Donja Gorica, as well as other actors working on entrepreneurship, there is space for making a networking working on the common goal of gamification of eco-social entrepreneurship. A significant role in this process could play examples of good practices that could be used as strategic partners such as Flourish.me<sup>32</sup> platform as well the Climathon Podgorica, which specifically deals with solving ecological issues. Based on our research, we recommend the following:

- Connecting and networking of different actors we mentioned who could work on a common goal or proposal of gamification tools in eco-social entrepreneurship.
- Using existing online platforms for learning for gamification platforms. These platforms already have numerous users, so reaching the target audience would be significantly be made easier.
- Relying not only on ICT for gamification but also expanding eco-social entrepreneurship to sectors that are most developed in Montenegro, most notably tourism, for which a basis and interest already exists.
- Most importantly, gamification itself should be promoted as a useful tool not only in enhancing knowledge and skills in eco-social entrepreneurship but other topics as well.
- Since there are few positive examples and literature concerning the gamification of eco-social entrepreneurship, Montenegro should rely on positive practices from other countries, especially those in the region that may have similar economies or other external factors that may affect its development.

## Croatia

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

Game based learning (GBL) and Gamification as learning and teaching methods can be observed as almost completely new concepts in the Croatian educational context. In order to comprehend the ramifications of the methodologies in this national context, it is necessary to determine their status within various educational sectors. In that sense, GBL has gained the most popularity in the School education sector, where it offers a fresh perspective in engaging young students on various topics. However, these can be observed in a very small number of schools and teaching staff, while the focus remains solely on teaching programming skills to youth through GBL<sup>33</sup>.

<sup>32</sup> <https://flourishapp.me/>, (accessed on 12/14/2022)

<sup>33</sup> Franković, I., Hoić-Božić, N., Holenko Dlab, M., & Ivašić-Kos, M. (2019). Supporting learning programming using educational digital games. In Proceedings of the 13th European Conference on Game Based Learning, Reading, UK:

A study has been made in 2018 by Croatian scholars intending to assess the usage and viewpoints of school education professionals related to gamification usage in school education teaching<sup>34</sup>. Within the study, survey research has been conducted including 6 public schools from 2 different Croatian regions where in total 128 teaching staff answered several questions examining their awareness of the concept and the usability of gamification methodologies in teaching. Only 31,5% of them knew about the term while for the rest of them the notion was completely unknown.<sup>35</sup> For those that were aware of the methodology and even used it themselves two main reasons have been determined regarding the lack of GBL and gamification techniques usability in formal education settings: lack of time to prepare the gamification sessions (43.9 %) and a lack of information on the concept of gamification (29,3%).<sup>36</sup> In May 2020, a group of scholars conducted research on the usage of simulation games in Higher Educational Institutions teaching Economics and Business.<sup>37</sup> The survey was sent by email to professors who are employed at the faculties of economics in Europe and the total number of respondents who participated in the survey regarding the usage of simulation games is 180.<sup>38</sup> Almost all European countries have been included, however, most of the respondents were from Croatia (69%).<sup>39</sup> Around half of respondents indicated that they do not use simulation games in class, but intend to start using them soon (54%). Most of the respondents agree that simulation games are very useful in Management (21%) as well as for Marketing (19%), Finance (18%) and Entrepreneurship (17%).<sup>40</sup> Most of the respondents implicit that lack of finances presents the main barrier regarding the usage of simulation games (79%). Around half of the respondents indicate that it is hard to change the way you have worked for a long time (56%). The same percentage of respondents (39%) indicate the following statements as barriers when using simulation games in education: Lack of understanding by management, Not required in education and It is difficult to adapt to new technologies. Only 3% of respondents have never heard for simulation games.<sup>41</sup> Available sources and the current state of the matter, as confirmed on the Erasmus+ project results platform indicate a lack of tools and resources related to these topics in the national contexts when it comes to non-formal education. There are simply no such projects focusing on GBL and gamification, as well as role model education methodologies in teaching entrepreneurship topics to youth.

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Academic Conferences and Publishing International Limited, 999–1003. Available online:  
<https://doi.org/10.34190/GBL.19.094> Accessed on 3rd November 2022

<sup>34</sup> Plantak Vukovac, D., Škara, M., Hajdin, G.: Korištenje i stavovi nastavnika o igrifikaciji u osnovnim I srednjim školama, Zbornik Veleučilišta u Rijeci, Vol. 6 (2018), No. 1, pp. 181-196 Available online: <https://hrcak.srce.hr/file/294324> Accessed on 3rd November 2022

<sup>35</sup> Plantak Vukovac, D., Škara, M., Hajdin, G.: Korištenje i stavovi nastavnika o igrifikaciji u osnovnim I srednjim školama, Zbornik Veleučilišta u Rijeci, Vol. 6 (2018), No. 1, pp. 181-196 Available online: <https://hrcak.srce.hr/file/294324> Accessed on 3rd November 2022

<sup>36</sup> Plantak Vukovac, D., Škara, M., Hajdin, G.: Korištenje i stavovi nastavnika o igrifikaciji u osnovnim I srednjim školama, Zbornik Veleučilišta u Rijeci, Vol. 6 (2018), No. 1, pp. 181-196 Available online: <https://hrcak.srce.hr/file/294324> (Accessed on 3rd November 2022)

<sup>37</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Čurlin, T. (2020). Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business. ENTRENOVA - ENTERprise REsearch InNOVation, 6 (1), 27-36. Available online: <https://hrcak.srce.hr/250935> (Accessed on 5th November 2022)

<sup>38</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Čurlin, T. (2020). Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business. ENTRENOVA - ENTERprise REsearch InNOVation, 6 (1), 27-36. Available online: <https://hrcak.srce.hr/250935> (Accessed on 5th November 2022)

<sup>39</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Čurlin, T. (2020). Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business. ENTRENOVA - ENTERprise REsearch InNOVation, 6 (1), 27-36. Available online: <https://hrcak.srce.hr/250935> (Accessed on 5th November 2022)

<sup>40</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Čurlin, T. (2020). Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business. ENTRENOVA - ENTERprise REsearch InNOVation, 6 (1), 27-36. Available online: <https://hrcak.srce.hr/250935> (Accessed on 5th November 2022)

<sup>41</sup> Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Čurlin, T. (2020). Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business. ENTRENOVA - ENTERprise REsearch InNOVation, 6 (1), 27-36. Available online: <https://hrcak.srce.hr/250935> (Accessed on 5th November 2022)

Inasmuch, there are no such projects in any of the education fields when it comes to Croatian national context. BC4SEE project comes across as the first such project in this EU area. Even more so, when it comes to eco-social entrepreneurship thematic.

Nevertheless, there are several examples of GBL being used in teaching STEM topics, such as in programming as in CodER KA2 project<sup>42</sup> and in teaching citizenship education through digital escape rooms as with Escape for Democracy KA2 project<sup>43</sup>. When it comes to teaching programming through GBL, it has been indicated that solving a particular problem by creating a computer program involves not only standard program development procedures, but also innovation and entrepreneurship.<sup>44</sup> Learning programming through GBL can actually improve the learners' entrepreneurial competences. The development of entrepreneurial competences related to the design thinking approach can be observed within GBL for programming problems, as students are asked to devise solutions that meet the needs of the community and solve real-world problems in an innovative way.<sup>45</sup>

A small number of scientific articles developed by Croatian authors discuss the theoretical ramifications of GBL, but none of these focus on the general national character itself. Let alone the learning processes that involve the implementation of GBL in teaching entrepreneurship topics of any kind. Therefore, this intellectual output is the first one that focuses on both the theoretical and practical aspects of GBL in the Croatian national context when it comes to entrepreneurship education.

### **Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level**

Based on the discoveries found during the conduction of this research there are several determining conclusions agreed upon by the authors of this study:

- Modern Role-model education methodology hasn't arrived in Croatian educational curricula in any of the educational sectors including both formal and non-formal education areas.
- There is a lack of GBL, gamification, and role-model education tools and resources aimed at teaching any topics to any type of learners.
- There are no projects, resources, or any type of information related to teaching eco-social entrepreneurship topics through GBL and gamification in Croatia.
- The existing available GBL and gamification resources are aimed at the social inclusion of disadvantaged learners and at teaching STEM topics to youth.

<sup>42</sup> <https://coderproject.eu/>

<sup>43</sup> <https://escapefordemocracy.com/>

<sup>44</sup> Franković, I., Hoić-Božić, N., Holenko Dlab, M., & Ivašić-Kos, M. (2019). Supporting learning programming using educational digital games. In Proceedings of the 13th European Conference on Game Based Learning, Reading, UK: Academic Conferences and Publishing International Limited, 999–1003, pp. 6., Available online: <https://doi.org/10.34190/GBL.19.094> (Accessed on 8th November 2022)

<sup>45</sup> Franković, I., Hoić-Božić, N., Holenko Dlab, M., & Ivašić-Kos, M. (2019). Supporting learning programming using educational digital games. In Proceedings of the 13th European Conference on Game Based Learning, Reading, UK: Academic Conferences and Publishing International Limited, 999–1003, pp. 4., Available online: <https://doi.org/10.34190/GBL.19.094> (Accessed on 8th November 2022)

- The few existing GBL and gamification resources should be more promoted in order to raise the awareness of their own existence and also to promote the sole concept in croatian educational context
- STEM learning through GBL though still improves basic entrepreneurial competences in learners, such as problem-solving, decision-making, critical thinking, creativity, time management.
- The existing GBL resources should be promoted to be used for entrepreneurial upskilling seeing as they contribute to that type of skills development
- There is a major interest in GBL methodologies and the implementation of gamification activities to be introduced to educational curricula by education professionals, including teachers, professors, and non-formal educators in Croatia.
- There is a lack of resources aimed at enhancing the skills of education professionals to be able to introduce GBL, Gamification and role-model education methodologies within their teachings
- BC4ESE project is the first attempt in teaching eco-social entrepreneurship, GBL in entrepreneurship education and role-model education within education sector in general.
- Once the teaching resources of BC4ESE project are published there should be a substantial effort from the project team to promote and disseminate the explosion of such project results in the youth and education sectors.

## Serbia

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

Gamification in education refers to the use of game elements, such as points, badges, and leaderboards, in non-game contexts, such as classrooms and online learning platforms, in order to engage and motivate learners. In recent years, gamification has gained popularity in Serbia as a way to improve student engagement and achievement in various subjects, including math, science, and language.

The Serbian gaming industry is represented by 130 companies or teams and employs more than 2,200 people in the sector<sup>46</sup>. However, production mainly focuses on commercial games and outsourcing services, leaving the creation and use of games in the educational process to teachers, schools, and non-governmental organizations. Also, The Ministry of Education has developed guidelines and resources for educators on how to incorporate gamification – digital and interactive educational

<sup>46</sup> Serbian Gaming Industry Report 2021, SGA, 2021 - [http://sga.rs/wp-content/uploads/REPORT\\_2022.pdf](http://sga.rs/wp-content/uploads/REPORT_2022.pdf), 2022

contents in realization of educational activities<sup>47,48</sup>. This shows the growing interest in the country to implement gamification and digital educational resources in the education system.

At the moment, recognition and support of gamification in education in Serbia vary from school to school and depend on the individual preferences and priorities of schools and educators, as well as the availability of resources and support for implementing game-based learning activities.

Based on assessment on available data and information collected by desk research, gamification of education in Serbia can be grouped in five represented categories:

- Game-based learning activities: Some schools in Serbia have started to use game-based learning activities to teach students. These activities may include educational games, simulations, and interactive quizzes that are designed to make learning more engaging and enjoyable.
- Game design elements in traditional classroom activities: Some educators in Serbia have started to incorporate game design elements into traditional classroom activities. For example, they may use points, badges, and leaderboards to motivate students and create a sense of competition.
- Online learning platforms: Some online learning platforms in Serbia are using gamification to engage students. These platforms may include interactive quizzes, simulations, and games that are designed to make learning more engaging and enjoyable.
- Virtual and Augmented Reality in education: There are attempts to incorporate VR and AR technology in schools, the immersive and interactive nature of VR and AR makes it a great tool for gamification in education.
- Gamification of language learning: Language learning apps and websites are popular in Serbia, some of them use gamification elements such as points, badges, leaderboards, and rewards to motivate students to learn and practice.

When we speak about the digital environment, platforms that can be adapted to the curriculum are often used in teaching. One example of gamification in education in Serbia is the use of digital learning platforms that incorporate game-like elements to make learning more interactive and enjoyable. These platforms often feature interactive quizzes, puzzles, and challenges that allow students to earn points, badges, and other rewards as they progress through their coursework. For example, the popular platform Kahoot! has been widely adopted in Serbian schools, where it is used to create interactive quizzes and games that can be used in a variety of subjects. Another way that gamification is being used in education in Serbia is using educational games (e.g. Minecraft in technical and technology classes<sup>49</sup>) and apps (e.g. World wall platform where teachers and students creating educational games connected with curriculum<sup>50</sup>) that are designed specifically to teach specific

<sup>47</sup> Ministry of Education, Science and Technological Development - *Professional Instruction for the organization of educational work in primary schools in the 2021/2022 school year* - <https://zuov.gov.rs/strucno-uputstvo-za-organizaciju-obrazovno-vaspitnog-rada-u-osnovnoj-i-srednjoj-skoli/>, 2021

<sup>48</sup> Ministry of Education, Science and Technological Development - *Professional Instruction for the organization of educational work in high schools in the 2021/2022 school year* <https://zuov.gov.rs/wp-content/uploads/2021/08/Strucno-uputstvo-za-organizaciju-rada-srednjih-skola-2021-2022.pdf>, 2021

<sup>49</sup> "Minecraft" in teaching in technical and technology classes - <https://www.savremena-osnovna.edu.rs/minecraft-u-nastavi-na-casovima-tehnik-i-tehnologije/>, 15.03.2023.

<sup>50</sup> Educational games in the teaching of the Serbian language at the Primary School in Kucura - <https://www.youtube.com/watch?v=Nuwp-YyMYks>, 04 06 2021

concepts or skills. These games often use game-like elements, such as points and rewards, to motivate learners and keep them engaged. For example, the math app Prodigy<sup>51</sup> has been widely used in Serbian classrooms to help students learn and practice math concepts in a fun and interactive way.

Related to topic of this research, it is important to note that the Center for the Promotion of Science (CPN) and the Mathematical Institute of the Serbian Academy of Sciences and Arts, in cooperation with the Nordeus Foundation and the Society of Mathematicians of Serbia, are conducting the "EduGaming" call for teachers of mathematics and informatics in primary and secondary schools.<sup>52</sup> The call invites them to create an educational game for one teaching unit, together with their students, as well as in cooperation with colleagues who teach other subjects, such as biology, physics, geography, arts and humanities, and to recognize the elements of mathematics in their classes.

Comparative analysis with other European countries and trends and situation in Serbia<sup>53</sup> in the field of youth in the digital world analyzed EUROSTAT data “on the use of computers and the internet on a daily basis, as well as on interaction with public authorities and other various forms of internet use for active participation in society and expression of views and opinions. According to Eurostat data for 2017 for 33 countries, 76% of young people aged 16-29 used a computer every day in the EU-27, and 83% did so in Serbia, while in 2017, the internet was used every day by 91% of young people in the EU-27 and 93% of young people in Serbia.” Beside this, Strategy of digital skills development in the Republic of Serbia for the period 2020 to 2024<sup>54</sup> include results of the survey Children on the Internet - Internet and Digital Technology Use among Children and Youth in Serbia which “indicated that the majority of surveyed students from the Republic of Serbia (86%) use the Internet on a daily basis, which almost equates them with children and youth from other countries that participated in this study (Kingdom of Norway, Italian Republic). Two thirds (65%) of the youngest respondents from the sample (9-10 years) and almost all students (98%) from the oldest age group (15-17 years) stated that they access the Internet every day via mobile (smartphone). In terms of time and activities on the Internet, the surveyed students spend on average more than three hours a day on the Internet, but most often they use the Internet for entertainment (watching videos and listening to music), communicating with family and friends and social networks. Almost 40% of students never or almost never use the Internet for school assignments.”

### **Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level**

#### *Conclusions*

Gamification in education is a promising approach to engaging and motivating students and improving learning outcomes in Serbia. By incorporating game design elements and mechanics into educational content, educators can create a more interactive and enjoyable learning experience for students. On the other side, it is important to find the right balance between engagement and learning, and to be aware of the potential challenges that may arise when using gamification in the classroom. With more

<sup>51</sup> Mathematics teaching your child will love - <https://www.savremena-osnovna.edu.rs/nastava-matematike-kakvu-ce-vase-dete-voleti/>, 15.03.2023.

<sup>52</sup> Ministry of Education of Republic of Serbia, Invitation to primary and secondary schools from all over the country - Games as a learning tool – EduGaming, <https://prosveta.gov.rs/vesti/poziv-za-osnovne-i-srednje-skole-iz-cele-zemlje-igre-ka0-sredstvo-za-ucenje-edugejming/>, 04.03.2022

<sup>53</sup> Snezana Klasnja, *Key indicators of the situation of young people in Serbia – Comparative analysis with other European countries and trends*, Ministry of Youth and Sports, 2020

<sup>54</sup> The Strategy of Digital Skills Development in the Republic of Serbia for the period 2020 – 2024, Official Gazette of the RS”, No. 30/18

research and development in this field, the Serbian education system can see the benefits of gamification and adapt it in the educational curriculum.

#### Recommendations

- Ensure that **schools have access to the necessary technology and resources** to implement gamification programs.
- Provide **training and support for teachers** to effectively incorporate gamification into their lessons.
- Increase **flexibility of educational curriculum** and infuse gamification throughout the entire lesson and/or unit of study to maximize participation.
- Develop **metrics and evaluation processes** to improve the gamification program based on feedback from students and teachers.
- Create a collaborative **environment** where schools and educators can share best practices and learn from each other's experiences with gamification.
- **Promote the use of gamification** in education to parents and the wider community.

## Cyprus

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

'Game-based' learning and 'gamification' are terms that are starting to become more popular in the country of Cyprus in the past decade in the context of non-formal and informal education in particular, whereas it is less pursued in formal education settings. Both in the research community as well as in the classrooms, there has been an embrace regarding the learning possibilities that are associated with the new methodologies. This is evident in the recent uptake of relevant European projects, involving Cypriot partners, but also through looking at the work in academia, with published research articles addressing the topic. The aforementioned are discussed below.

The driving force behind a shift towards game-based learning approaches in education in Cyprus, relates to challenges in a post-digital, COVID and post-COVID era. COVID-19 has primarily helped promote game-based learning as well as gamification, in research in Higher Education and to a lesser degree in School Education<sup>55</sup>. At a policy level, gamified approaches and game based learning, are not the subject of guidelines or curriculum from the Ministry of Education<sup>56</sup>. Gamification and game-based learning have been embraced by the private sector, more than the public sector due to the accessibility to funding and training opportunities for the staff.

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<sup>55</sup> HCI International. (2021). T29: Shifting to Digital: Gamification in Course Design | HCI International 2021. HCI International 2021. <https://2021.hci.international/T29.html>

<sup>56</sup> Cyprus Ministry of Education, Sport and Youth. (2023). Department of Primary Education. <http://www.moec.gov.cy/dde/en/index.html>



degree in School Education<sup>57</sup>. At a policy level, gamified approaches and game based learning, are not the subject of guidelines or curriculum from the Ministry of Education<sup>58</sup>. Gamification and game-based learning have been embraced by the private sector, more than the public sector due to the accessibility to funding and training opportunities for the staff.<sup>59</sup>

The vast majority of findings into the subject of game-based learning and gamified methodologies in Cyprus, derives from work in EU projects, as already stated. Such an example is the EU project Gamification of Digital Learning, which included as partner a private school from Cyprus<sup>60</sup>. The project result 2, involved developing a Compendium of methods for gamification in digital learning<sup>61</sup>. Interviews and questionnaires with teachers, educators, and specialists on the topic of Gamification at a local level were conducted, in the partner countries. In the case of Cyprus, research findings suggested that teachers felt game-based learning motivates their students, and they often resort to the use of interactive, online learning, although not consistently. The majority of teachers appeared to be familiar with the concept of gamified learning in classroom practices and that they are willing to incorporate the latter in their daily teaching. These teachers perceived that introducing game-based learning would be an asset, but they don't currently use them as much.

Another recent study into barriers to the use of games-based learning in pre-school settings in Cyprus<sup>62</sup>, investigated how private and public pre-school teachers perceive the barriers that limit the adoption and implementation of games-based learning in early childhood education on Cyprus. Factor analysis revealed three types of barriers to the use of games-based learning in early childhood classroom: lack of confidence, lack of support, and lack of equipment. The higher the teachers' self-efficacy in using digital games was, the lower the level of teachers' perception regarding the barrier lack of confidence became. Teachers with no frequent use of computer and digital games in the classroom perceived lack of confidence as a major barrier. Public pre-schools teachers had significantly more positive attitudes toward the usefulness of GBL than private pre-schools teachers.

There is evidence of use of game-based learning in Cyprus in informal education settings, such as museums. For instance, Ioannou and Kyza discuss the findings from fieldwork involving the role of gamification in activating primary school students' intrinsic and extrinsic motivation at a museum<sup>63</sup>. Results showed that the gamified approach contributed to the increase of students' extrinsic motivation, as well as to the improvement of their historical knowledge, but did not modify their intrinsic motivation with the exception of their interest. Other researchers at the Cyprus University of Technology, Department of Internet and Communication Studies, work on augmented reality games to promote immersion and feelings of presence, which could support students' engagement with the learning process<sup>64</sup>. These ideas are reflected in the design of the TraceReaders, a platform for enabling

<sup>57</sup> HCI International. (2021). T29: Shifting to Digital: Gamification in Course Design | HCI International 2021. HCI International 2021. <https://2021.hci.international/T29.html>

<sup>58</sup> Cyprus Ministry of Education, Sport and Youth. (2023). Department of Primary Education. <http://www.moec.gov.cy/dde/en/index.html>

<sup>59</sup> Kalli, A., 2021. Management of generation Z: gamification technique in learning and development practices. Cyprus: Πανεπιστήμιο Κύπρου, Σχολή Οικονομικών Επιστημών και Διοίκησης / University of Cyprus, Faculty of Economics and Management.

<sup>60</sup> Gamification of Digital Learning. (2020). Gamification of Digital Learning. <https://gdl-project.eu/>

<sup>61</sup> LogoPsyCom, CTMB, IMS Private School, EUphoria Net, & Szkolny Edukacji Innowacyjnej. (2020). Gamification of Digital Learning- Compendium. <https://gdl-project.eu/wp-content/uploads/2022/11/Compendium-of-methods-for-gamification-in-digital-learning.pdf>

<sup>62</sup> Manesis, D. (2020). Barriers to the Use of Games-Based Learning in Pre-School Settings. *International Journal of Game-Based Learning*, 10(3), 47–61. <https://doi.org/10.4018/ijgbl.2020070103>

<sup>63</sup> Ioannou, I., & Kyza, E. A. (2017). The role of gamification in activating primary school students' intrinsic and extrinsic motivation at a museum. *Proceedings of the 16th World Conference on Mobile and Contextual Learning*. <https://doi.org/10.1145/3136907.3136925>

<sup>64</sup> Georgiou, Y., & Kyza, E. A. (2018). Relations between student motivation, immersion and learning outcomes in location-based augmented reality settings. *Computers in Human Behavior*, 89, 173–181. <https://doi.org/10.1016/j.chb.2018.08.011>

location-based mobile learning using augmented reality (AR) technologies.<sup>65</sup> TraceReaders supports the authoring of inquiry-based AR apps, to engage students in evidence-driven reflective inquiry in situ.

Organisations like STANDOUT LTD that are based in Cyprus have the capabilities to introduce teachers to concepts and tools that focus on the pedagogical use of games which can significantly enhance the good quality and effectiveness of education<sup>66</sup>. Other institutions, like SYNTHESIS Center for Research and Education<sup>67</sup>, CARDET<sup>68</sup> and CITIZENS IN POWER<sup>69</sup>, have continually engaged in projects related to the topic of gamification, game-based learning and eco-social entrepreneurship.

### Eco-social entrepreneurship

The research carried out, specifically in Cyprus, lacks in the field of eco-social entrepreneurship, as eco-entrepreneurship is mainly practiced at a practical level, with local and transnational initiatives, in the context of EU projects from NGOs, social enterprises, and other organisations, active in the field of social entrepreneurship. As stated in the 2019 National Report on Social entrepreneurship in local communities, the typologies that qualify as social enterprises in Cyprus are Limited liability companies, Cooperatives, and Associations<sup>70</sup>. According to the Eco-Innovation Observatory report for 2018-2019, policy and funding measures and mechanisms for promoting eco-innovation in Cyprus highly depend on co-financing through the EU structural funds.

One interesting take on eco-social entrepreneurship is the GreenEnter4Future project.<sup>71</sup> The project aims to improve global environmental standards, stresses the need to empower youth workers who will then empower youth in ecofriendly entrepreneurship, fast track to transition in the green economy not only to restore after the pandemic but to provide new opportunities to the younger generations, with more collaborative business models. Green startups find their natural outlet in different sectors. Another very successful programme which run until 2017, Recyward, implemented by the University of Cyprus and its students, was based on the method of gamification every time someone recycles glass, plastic, aluminium or/and paper is rewarded with points which can be exchanged from various offers<sup>72</sup>. Offers come from companies affiliated with recyward. Points are also exchangeable with seeds for tree plantations or for donations. Another noteworthy example, the STOMP CY youth entrepreneurship pilot programme, implemented in 2019 CyprusInno and the Center for Social Innovation (CSI), helped Cypriot youth develop entrepreneurial skills through gamification and interactive learning while exploring their city<sup>73</sup>. In this programme, young Cypriots from all over Cyprus between the ages of 15-17 apply for the programme to join us to learn more about entrepreneurship. Of relevance is also how a Cypriot start-up created the world's first biodegradable

<sup>65</sup> Kyza, E. A., & Georgiou, Y. (2018). Scaffolding augmented reality inquiry learning: the design and investigation of the TraceReaders location-based, augmented reality platform. *Interactive Learning Environments*, 27(2), 211–225. <https://doi.org/10.1080/10494820.2018.1458039>

<sup>66</sup> StandOutEdu. (2023, January 26). Game-Based Learning in Education - StandOutEdu. StandOutEdu - StandOutEdu. <https://standoutedu.com/game-based-learning-in-education-2/>

<sup>67</sup> Synthesis. (2022). PROJECTS. <https://www.synthesis-center.org/projects>

<sup>68</sup> CARDET. (2023). CARDET - Gamification. <https://www.cardet.org/tags/gamification?start=40>

<sup>69</sup> Citizens In Power. (2023). Activities – Citizens In Power. <https://citizensinpower.org/activity/>

<sup>70</sup> Synthesis, Energap, EcoLogic, & National Agency for European Educational Programmes and Mobility. (2022). POLICIES FOR SOCIAL ENTREPRENEURSHIP IN CYPRUS. <https://green-entrepreneur.net/wp-content/uploads/2021/11/polices-cyprus.pdf>

<sup>71</sup> CCIF. (2023). GreenEnter4Future. CCIF CYPRUS YOUTH NGO. <https://www.ccifcyprus.com/greenenter4future.html>

<sup>72</sup> CyprusInno. (2016, October 20). Recyward. <https://cyprusinno.com/places/startups/recyward/>

<sup>73</sup> CyprusInno. (2022, August 14). STOMP CY. <https://cyprusinno.com/stompcy/>

PCB substrate, and has won the National ClimateLaunchPad competition, in which new companies compete for the best green business idea<sup>74</sup>.

The ‘Go Social: Supporting employability through social entrepreneurship’ project, was another successful example that was launched in August 2018 and was completed by July 2021<sup>75</sup>. The project aimed at enhancing the participation of individuals in society by providing new skills and learning opportunities in social entrepreneurship, thus supporting employability in Cyprus. The project encouraged the development of social enterprises in Cyprus by identifying and supporting new innovative ideas and initiatives that can meet social, economic and environmental needs, while developing inclusive growth and sustainable economy. All events and activities are promoted through traditional and social media tools and those who are interested are strongly encouraged to seize the opportunity to “go social”!

In a recent development in February 2022, The Cyprus Chamber of Commerce and Industry (KEVE) and the Cyprus International Institute of Management (CIIM) on Wednesday signed a Memorandum of Cooperation, seeking to deepen their partnership, promote sustainable entrepreneurship and support businesses.<sup>76</sup>

It is evident that there is a growing interest in the field of game-based learning and eco-social entrepreneurship in a Cypriot context. However, at the moment, game-based learning is addressed mainly in the context of academic research and EU projects, involving institutions from Cyprus as partners. It is imperative that more work is done on practical terms in formal education settings, whereas the concept of eco-social entrepreneurship is less evident in research articles, compared to that of game-based learning. This should not come as a surprise, since the term is rather new and has only recently been introduced into the work of social enterprises and other relevant organizations active in the subject matter in Cyprus.

Nevertheless, there are numerous examples of EU projects with Cypriot partners, combining game-based learning for social entrepreneurship and even ecological approaches to social entrepreneurship to educate youth. It seems that this trend will continue strong as organisations focus to empower young people and introduce them to sustainable development goals and the EU Green Deal.

Some examples include:

- “INSPIRE- Innovative Serious Play for Identifying your Role in a Social Entrepreneurship” The project aims to inspire young people between the ages of 18-24 to engage with Social Entrepreneurship, create teams to found their companies, through an innovative toolkit a psychometric serious game.
- Project CO-ART addresses entrepreneurial and digital competence development of young unemployed, self employed CCS workers and aspiring art entrepreneurs through Online Escape Rooms. Moreover, CO-ART will provide an adequate training programme to equip youth workers with these new working environments and tools and enable them to support digital and entrepreneurial competence development.

<sup>74</sup> Cyprus Mail. (2020). Cypriot start-ups in the running for best green business idea. <https://cyprus-mail.com/2020/08/25/cypriot-start-ups-in-the-running-for-best-green-business-idea/>

<sup>75</sup> Famagusta Walled City Association (MASDER), AKTI Project and Research Centre (AKTI), and the Famagusta Women Centre Association (MAKAMER). (2023). GoSocialCY |. <https://gosocialcy.eu/>

<sup>76</sup> Cyprus Mail. (2022). Partnership aims to promote green entrepreneurship. <https://cyprus-mail.com/2022/02/17/partnership-aims-to-promote-green-entrepreneurship/>

- The Green STEAM Incubator board game aims to recall several soft skills such as management, self-organization, and time management. The game will also help develop observation and reasoning skills in mathematical logic, analytical, and critical skills.
- Escape rooms for Social Entrepreneurship through the ERSE Project. This project primarily aims at the education of the next generation of entrepreneurs who are concerned with the sociological ramifications of entrepreneurship.

Our suggestion would be that more academic research is pursued on the topic of eco-social entrepreneurship and gamified methodologies, drawing on the projects taking place in the island.

### **Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level**

- Integrate social and eco-entrepreneurship topics into the national curriculum across different subjects and grade levels. This ensures that students receive exposure to these concepts throughout their education
- Collaboration between relevant NGOs and businesses in Cyprus that are involved in social and eco-entrepreneurship initiatives. These partnerships can provide valuable insights, resources, and real-life examples for educators to incorporate into their teaching.
- Develop digital resources, such as online platforms, mobile applications, and gamified learning experiences, that engage and motivate youth in learning about social and eco-entrepreneurship. These resources should be interactive, user-friendly, and aligned with the specific learning objectives.
- Conduct awareness campaigns to promote social and eco-entrepreneurship among youth in Cyprus. This can involve organizing workshops, seminars, or conferences to raise awareness about the importance of these topics and inspire young people to get involved.
- Provide professional development and training opportunities for teachers to enhance their knowledge and skills in teaching social and eco-entrepreneurship topics. This training should focus on pedagogical approaches, innovative teaching methods, and the effective use of educational technology.
- Establish mentorship programs that connect experienced social and eco-entrepreneurs with aspiring youth who are interested in these fields. Mentors can provide guidance, support, and practical advice to help young entrepreneurs develop their ideas and initiatives.
- Regularly evaluate the effectiveness of the educational resources, tools, and activities implemented. Collect feedback from students, teachers, and stakeholders to assess the impact of these initiatives and make necessary improvements.

By implementing these recommendations, Cyprus can create a robust educational ecosystem that fosters social and eco-entrepreneurship among youth, equipping them with the necessary knowledge, skills, and motivation to make a positive impact in their communities and the environment.

## Belgium

### Existing state of matter regarding digital gamification methodology and digital role model education methodology in teaching entrepreneurship topics to youth

Belgium was the second country among the EU states that officially recognised the value of video games and included it into the curriculum as a tool for educational purposes. This has also spurred the support fund from the Flemish Government and cooperation with video games producers<sup>77</sup>. Video games seem to be an excellent tool to complement the curriculum and add value by engaging with pupils and make learning more attractive. In a European Schoolnet survey<sup>78</sup> it appeared that motivation to learn rose close to 90% when using video games in the classroom.

Belgium is significantly advanced in comparison with other EU countries in including gamification in education and learning process. This could result from various initiatives that started to appear in the last 2 years. This literary research gave way to identify a few of them, which should be taken under consideration while looking at the development of gamification in different countries.

One of the reason could be an advancement in national strategies covering measures for ICT schools, e-learning, e-inclusion<sup>79</sup>.

Especially in the Flemish Community, using a computer, searching for information, and using multimedia, at primary education level is high. According to official steering documents, both students and teachers at both primary and secondary level are expected to use ICT in class in all subjects<sup>80</sup>.

Admittedly, the pandemic has accelerated the trend. The coronavirus made pupils, students and teachers totally reliant on digital tools. In this context the Flemish Department of Education and Training created a KlasCement<sup>81</sup>, the educational resources network<sup>82</sup>, which supported a number of initiatives to give support to teachers in their online teaching activities and professional learning. The teachers could share and exchange the resources. At the onset of the pandemic in March 2020 the KlasCement started creating specific sections on its website that were devoted to distance teaching and learning, and asked commercial and non-commercial partners (e.g. start-up companies providing tools to create online exercises, game-based learning platforms) to upload new content on relevant topics to support teachers (e.g. use of digital tools, video learning). As a result, between mid-March and the end of April 2020, there were more than 3000 new contributions on the platform, shared by almost 2000 members, with an average of 500 new learning resources every week<sup>83</sup>.

KlasCement also plans on further enhancing its adaptability to each teacher's needs and profile, using technologies such as artificial intelligence.

<sup>77</sup> <https://www.isfe.eu/news/belgiums-flanders-is-second-european-government-to-integrate-video-games-into-mainstream-education/> (accessed on 20/02/2023)

<sup>78</sup> University of Liege, Psychology and Education; European Schoolnet, Survey of Schools, ICT in Education, Country profile: Belgium ( November 2012 ), <http://files.eun.org/ESSIE/Belgium%20country%20profile.pdf> (accessed 08/02/2023)

<sup>79</sup> Eurydice's Key Data on Learning and Innovation through ICT at school in Europe: <https://op.europa.eu/en/publication-detail/-/publication/8f864668-0211-4a40-bc14-65bf1a97b6a8>

( 2011) specifically the following tables and associated commentaries: A6, B6, B7, C2, C3, C4, C12 and E10

<sup>80</sup> University of Liege, Psychology and Education; European Schoolnet, Survey of Schools, ICT in Education, Country profile: Belgium ( November 2012 )

<http://files.eun.org/ESSIE/Belgium%20country%20profile.pdf> ( accesses 08/02/2023)

<sup>81</sup> <https://www.klascement.net/> ( accessed 18/02/2023)

<sup>82</sup> <https://www.oecd-ilibrary.org/sites/9a09dc2a-en/index.html?itemId=/content/component/9a09dc2a-en> ( accessed 18/02/2023)

<sup>83</sup> <https://www.klascement.net/> ( accessed 18/02/2023)

Such initiative, on setting the network can serve as an example how the platform can act both as:

- a source of inspiration for teachers and as a tool for professional learning
- a platform where teachers can learn from the materials shared by their peers and the network includes a number of training activities for teachers.

Lastly, the survey that was conducted by *Logopsycom, an education Innovation Centre* <sup>84</sup>, demonstrates that Belgium is somehow ahead in terms of mindset shift toward gamification in education. Out of the eighteen teachers and experts interviewed in Belgium, most (seven) reported using interactive methods most of the time. Five said having done so some of the time, four seldom, and the remaining two never. This place Belgium on top of the list with the average answer from other countries ( Italy, Poland,Cyprus) of “ using most of the time”, thus 55% <sup>85</sup>.

In the same survey, on the other hand the students were asked, to what extent they are motivated to use e-learning. Once more Belgium scored the best out of interviewed countries, where 6 teachers out of 18 said their students were motivated. Other half scored “somewhat motivated”. The latter scored the most in other countries such as Italy, Romania or Poland.

Results of the survey demonstrated that Belgium is more advanced in comparison with other EU countries in incorporating gamification into education, and there is a significant motivation among teachers and students, however in the same survey , the existing barriers and challenges were emphasized as well.

#### Challenges & opportunities

While conducting the literary review and looking at results of the projects that have been implemented in Belgium the main challenges were identified with regards to including game-based learning into education.

In the same survey as above, when teachers were asked what are the benefits and barriers to introduce gamification in digital learning, four out of eighteen teachers/experts in Belgium listed only benefits <sup>86</sup>. The reason was that the students are more motivated. Then eight out of eighteen teachers recorded only obstacles to the introduction of Gamification in digital learning. Most of the obstacles were related with:

- slow progress of the programme
- slow preparation of the programme

Among other challenges , there were the key points mentioned<sup>87</sup>:

- lack of material and training, tools and lack of skills
- lack of a good IT infrastructure at schools and educational institutions

<sup>84</sup> <https://logopsycom.com/about/> ( accessed 20/02/2023)

<sup>85</sup> <https://gdl-project.eu/wp-content/uploads/2022/11/Compendium-of-methods-for-gamification-in-digital-learning.pdf>

<sup>86</sup> <https://gdl-project.eu/wp-content/uploads/2022/11/Compendium-of-methods-for-gamification-in-digital-learning.pdf> ( accessed on 20/02/2023)

<sup>87</sup> <https://www.isfe.eu/learning-by-playing-benefits/> ( accessed on 20/02/2023)

- lack of confidence amongst teachers to use video games and digital content.

There are plenty opportunities that may appear from including them into curriculum such as:

- Can become enablers to level the playing field of education <sup>88</sup>
- Modern technology can support students even further by allowing them to express themselves digitally
- Universal digital literacy, supporting teachers to use the exciting and appealing medium of video games to help make education in Europe fit for the digital age.

### Gamification, Game-Based Learning and Virtual Reality in Entrepreneurship Education

Social Entrepreneurs have restricted time to keep up with training opportunities, therefore it is essential to provide them with smart, accessible and engaging tools. It is important to keep their attention high for the best results. Gamification or game-based learning tools could become the right tool to attract the attention of especially young (social) entrepreneurs. Game-based tools can provide the right amount of theoretical knowledge (in the indirect way) but also give the possibility to simulate the challenging scenarios and find solutions that could be applied in reality. Game-based learning also gives the opportunity to create a network of “game-players”. Creating online games, where entrepreneurs can interact with other peers and compete, stimulates innovation, builds the network and at the end contributes to creation of possible durable and scalable products. Furthermore, the element of competition, scoring, challenges and teamwork will increase the involvement along the game.

As it appeared from the interviews conducted with young people within the frame of BC4ESE project aspiring Social Entrepreneurs experience a high degree of uncertainty while embarking onto the entrepreneurial path. Gamification could be a very useful tool to conduct simulations and scenarios on their future entrepreneurial endeavors. The simulations of the scenarios could help them in estimation of risks and developing resilience, while setting up their real social enterprise. Further, at the first place, game-based learning could contribute to minimize risks and percentage of failed Social Enterprises (SEs) in the start-up phase, by examining the business case versus sustainability criteria etc.

### **Recommendations for the development of the educational resources, tools and activities that teach and promote social and eco-entrepreneurship topics to youth at the national level**

Based on the discoveries found during this research there are several conclusions agreed upon by the authors of this study:

- Belgium is one of the leading countries to include GBL into education, however it is developing very strongly in the Flemish Region, which might create disparities.
- There are single projects related to teaching eco-social entrepreneurship topics through GBL and gamification in Belgium.

<sup>88</sup> <https://www.isfe.eu/learning-by-playing-benefits/> (accessed on 20/02/2023)

- Majority of the projects are focused on methodology and guides for teachers on how to incorporate the GBL in education.
- The existing available GBL and gamification resources are aimed at teaching STEM topics to youth.
- There has been a significant initiatives introduced on the ministerial level to encourage the GBL in education
- It is evident that creating networks that allows peers-teachers to connect and exchange the practices can help in embracing the concept of GBL in education as an innovative tool for student engagement in knowledge absorption.



## Conclusion

From the above literary review undertaken for the research in the context of the majority of countries involved, it is evident that Game-based learning (GBL) and Gamification as learning and teaching methods can be observed as almost completely new concepts. In the countries of the Western Balkans, there is generally not much information about the application of Game-based learning and Gamification, besides the fact that in recent years, gamification has gained popularity within various educational sectors with the aim of improving student engagement and achievement on various topics. Game-based learning and gamification are starting to become more popular in the country of Cyprus in the past decade in the context of non-formal and informal education in particular, whereas it is less pursued in formal education settings, while Belgium is significantly advanced in comparison with other EU countries in including gamification in education and learning process due to advancement in national strategies covering measures for ICT schools, e-learning, e-inclusion.

However, Game-based Learning and Gamification need to be treated through a systemic approach as part of broader educational reforms and the digitalization of society.

In most countries included in the research, there was a strong emphasis put on:

- lack of GBL, gamification, and role-model education tools and resources aimed at teaching any topics to any type of learners;
- lack of projects, resources, or any type of information related to teaching eco-social entrepreneurship topics through GBL and gamification in project partners' countries;
- lack of legal framework;
- lack of resources aimed at enhancing the skills of education professionals to be able to introduce GBL, Gamification and role-model education methodologies within their teachings
- low awareness of modern teaching methods, especially the acquisition of entrepreneurial skills.

Furthermore, gamification in education is a promising approach to engaging and motivating youth and improving learning outcomes. By incorporating game design elements and mechanics into educational content, educators can create a more interactive and enjoyable learning experience for youth. GBL improves and practices vital skills necessary for entrepreneurship education such as: critical thinking, problem solving, decision making, creativity, time management, teamwork in collaborative games and many more skills, all crucial for the development of an entrepreneurial mindset.

On the other side, it is important to find the right balance between engagement and learning, and to be aware of the potential challenges that may arise when using gamification. With more research and development in this field, the education system can see the benefits of gamification and adapt it to the educational curriculum. BC4ESE project is the first attempt in teaching eco-social entrepreneurship, GBL in entrepreneurship education and role-model education within the education sector in general, in the context of the majority of the partner countries involved, with the exception of Cyprus and Belgium where such efforts have been undertaken on a small scale.

Once the teaching resources of the BC4ESE project are published there should be a substantial effort from the project team to promote and disseminate the explosion of such project results in the youth and education sectors.

Gamified digital educational resources, tools and activities that teach and promote social and eco entrepreneurship to youth in partner countries

Bosnia and Herzegovina

Environment	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
<p><a href="#">The environment of the Business Academy consists of halls and classrooms, equipped business laboratories with computers, digital services, a constantly active Distance Learning platform for participants who learn at a distance, administrative offices, a library, etc.</a></p>	<p><a href="#">Capstone is a computer simulation of company management designed so that, through the game, the participant learns top management skills.</a>  <a href="https://www.biznis-akademija.com/capstone-uloga-generalnog-direktora-stvorite-svetsku-kompaniju">https://www.biznis-akademija.com/capstone-uloga-generalnog-direktora-stvorite-svetsku-kompaniju</a></p>	Simulation	Business simulations are interesting and educational games that teach how to successfully navigate the world of business in a fun and innovative way. They include a multitude of daily activities in order to successfully run or complete a job.	Individuals, companies and institutions	<p>To master business skills, they use the "Knowledge Architecture" process, which properly uses all modern media to transfer knowledge. The result is faster information retrieval.</p> <p>This new methodology enables three to four times greater engagement during lectures and learning, so it is possible to acquire business skills within 12 months that previously required two to four years. Regardless of type of studying traditionally or through distance learning.</p>

					High quality education is guaranteed by memberships and partnerships with international organizations and institutions, including Cambridge University.
Coding Giants/ Scratch, Minecraft		<p><a href="#">Scratch. It is an educational language that was made as a tool to teach children the basics of programming. Part of the class is intended for programming three-dimensional applications on the KODU</a></p>			From September 2021 until today, more than 1000 children from Bosnia and Herzegovina have participated in various activities of the Coding Giants school.
Coding Giants /Tynker	<p>Scratch: interactive stories, animations or games; - language elements are shaped like puzzles that, if arranged correctly, form a functional program or game <a href="https://scratch.mit.edu">https://scratch.mit.edu</a></p>		Getting to know the world of programming and its basic concepts. Learners can demonstrate their skills in the Scratch environment and Minecraft Education Edition	Children	

		<p><a href="#">platform and programming using special electronic components - Makey Makey.</a></p> <p><a href="#">Thanks to the Tynker environment, students will learn how to create multi-stage platformer games, and in the second part of the semester Scratch is used to</a></p>			
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		<a href="#">create advanced games such as Pokemon Go.</a>			
Online courses	<p>Campster platform  <a href="https://www.thecampster.com/ba/?gclid=Cj0KCQjwslejBhDOARIsANYqkD2Jb_QUbw8ArG6RZEmppJinYsbYKK4r9pcWJr1pK7FGTZDFAWh5HvEaAk4BEALw_wcB">https://www.thecampster.com/ba/?gclid=Cj0KCQjwslejBhDOARIsANYqkD2Jb_QUbw8ArG6RZEmppJinYsbYKK4r9pcWJr1pK7FGTZDFAWh5HvEaAk4BEALw_wcB</a></p>	<p>Online lectures, games, tests, etc.</p>	<p><a href="#">Online programming courses:</a></p> <ul style="list-style-type: none"> <li>- <a href="#">Introduction to programming</a></li> <li>- <a href="#">Basics of Python programming</a></li> <li>- <a href="#">Backend programming MYSQL AND PHP</a></li> <li>- <a href="#">Development of mobile applications</a></li> <li>- <a href="#">Web development</a></li> <li>- <a href="#">R programming language for data science</a></li> <li>- <a href="#">QA manual software testing</a></li> </ul> <p><a href="#">Business online courses</a></p> <ul style="list-style-type: none"> <li>- Writing a business plan</li> <li>- Time management etc.</li> </ul>	<p>Not specified - open to interested</p>	<p>Acquaintance with basic theoretical and practical knowledge in the field of business plan writing, etc.</p>
Distance learning/Virtual education center of the International Association of "Interactive Open Schools" (MIOS)	<ul style="list-style-type: none"> <li>- Google classroom</li> <li>- IDroo  <a href="https://app.idroo.com/">https://app.idroo.com/</a></li> </ul>	<p>Lectures, tests, quizzes, questionnaires,</p>	<p>The goal of the network is to connect teachers in communities and facilitate their access and</p>	<p>The webinar is intended for the teaching staff of</p>	<p>Support for teaching staff to build professional competencies in the community of teachers and schools ready to live the paradigm of integral</p>

	<p>- Moodle  <a href="https://moodle.org/">https://moodle.org/</a></p>	<p>multimedia files, etc.</p>	<p>sharing of materials and knowledge.          It enables collaboration in smaller groups (class simulation) between teacher and student. It also provides access parents. Teachers create groups and enroll their students in them. Within each group, it is possible to create subgroups and distribute them members.</p> <p><u><a href="#">Google classroom is a tool that can be used for almost any activity carried out in a traditional classroom.</a></u>  <u><a href="#">Teachers have the possibility to create, organize and arrange their lessons in such a way that they are adapted to the school curriculum and program. Also, it is possible to create lists of recommended literature as well as other resources that will help students with homework</a></u></p>	<p>several schools or one school.</p>	<p>development of each child in the educational process.</p>
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			<p><a href="#">and additional reading of the material. At the same time, it is possible to create and directly evaluate tests in Google Classroom.</a></p> <p><a href="#">IDroo is a virtual whiteboard suitable for distance learning.</a></p> <p><a href="#">Moodle is a unified set of tools that enables access to common sources of knowledge, exchange of educational material, as well as the use of additional modules that provide functionality expansion. It is primarily intended for institutions that deal with education. For educational purposes, Moodle offers: monitoring of student work, testing and evaluation, mutual interaction and communication between students, that is, students and lecturers, as well as other practical matters.<sup>89</sup></a></p>		
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<sup>89</sup> Interactive tools are also presented on the website: BoogWidgets, Classroom screen, Linoit, Mentimeter, Mindmeister, Mindomo, Pixton, Popplet, Slido, Wizer i drugi sadržaji

<p>Online course “New Digital Enterprise Start-ups”</p>	<p>Animated videos, videos of experienced trainers and participants of training courses</p>	<p>Quizzes, etc.</p>	<p><u><a href="#">The online course "New Digital Enterprise Start-ups" has the following goals:</a></u></p> <ul style="list-style-type: none"> <li>- <u><a href="#">Empower young workers and build their competences for the development of informal education / youth work programs to start digital entrepreneurship among young people (young women), users in communities</a></u></li> <li>- <u><a href="#">To share the real situation and experiences with the (non)employment situation and the NFE and vocational programs that exist for entrepreneurship among young people and young women, especially in different European countries</a></u></li> <li>- <u><a href="#">Increase knowledge about new era entrepreneurship</a></u></li> <li>- <u><a href="#">Increase knowledge and competences about the IT sector and competences for promoting digital entrepreneurship among young people in our countries</a></u></li> <li>- <u><a href="#">Develop competencies to further empower young people</a></u></li> </ul>	<ul style="list-style-type: none"> <li>- Youth workers</li> <li>- Young people</li> <li>- Young women</li> </ul>	<p>Improving entrepreneurial skills and competences, including digital capabilities</p>
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			<p><u>in communities for digital entrepreneurship</u>  <u>- To increase the competences of participants to create (IT / digital) entrepreneurial learning environments in work with young people.</u></p> <p><u>„Quality Entrepreneurial Learning“</u>  <u>“Adapting existing enterprises to Digital Revolution”</u></p>		
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## Montenegro

Environment	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
In-class gamification	<a href="#">Handbook for the implementation of entrepreneurial education for students aged 11 to 14</a>	Storytelling, rules	Business management competencies, Accounting skills, sales skills and profit calculation	Students aged 11-14	Students have the opportunity to learn how to apply economic principles in real life. The theoretical part refers to familiarizing students with the basic terms, relationships and results of the entrepreneurial process  as well as with the emergence and development of entrepreneurship. A special focus of this program is the practical part that relates to gaining experience in running a business as an independent entrepreneur or in partnership.
Software developed using gamification tools	<a href="#">Flourish the app</a>	quiz, points, level	Socio-emotional skills	Employed or self-employed people	Tool for increasing emotional intelligence as an alternative to existing complex, expensive and time-consuming solutions. Flourish first measures the current coefficient of emotional intelligence and shows how developed each of the aspects that make it up is. Then, he proposes a program to improve areas where there is room for growth
Online gamification	<a href="#">Human rights in the palm of your hand.</a>	quiz, points, leaderboard	Knowledge about human rights	No predefined target audience	The goal of the online game is to introduce players to the concept of human rights, to people who have made a significant contribution to their greater respect, as well as to the work of important institutions in this area.

Online gamification	<a href="#">Europe – Question of values</a>	quiz, points, leaderboard	Knowledge about human rights	Students	<p>Online game "Europe - A question of values" It allows the class to engage in a joint recreational activity, while at the same time it helps to reflect on the key values that allow people to live together in society.</p> <p>Although the game can be adapted to small groups of two or more players, it is mainly designed for use in school classrooms, under the guidance of teachers.</p>
Online learning platform	<a href="#">zenskibiznis.me</a>	online learning platform	Business management competencies, Personal entrepreneurial competencies	Female entrepreneurs	<p>The national digital platform for the economic empowerment of women in Montenegro was created to support women in business and everyone who wants to implement a business idea. All information about current support for female entrepreneurship in Montenegro, education in key areas for business development, free advisory services, and the possibility of business promotion are available on the platform. The platform enables the connection of women in business in order to support and establish business contacts, as well as communication with all institutions and organizations that provide support to women in business.</p>

## Croatia

Environment	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
In-class gamification	<a href="#">THOR board game</a>	Board game for reflection methods in education	GB tool for reflection of learning	Pupils, student, youth	Assessing learning achievements in a creative way while it has multiple applicability for all types of users
In-class gamification, online gamification	<a href="#">SEE Toolkit</a>	Storytelling, escape room, puzzles, card game, audio quiz	Game based tools and activities aimed at enhancing the soft skills of disabled youth.	Youth	Hands-on tools and resources for inclusive youth work that aims to include youth with disabilities in youth work
In-class gamification, digital gamification	<a href="#">CodER Scenarios handbook</a>	Storytelling, escape rooms, role-model education	Virtual Escape rooms that improve entrepreneurship skills while using role model education methodologies through character storytelling.	Youth	Improves programming skills of young people and teaches them the basics of robotics. Game can be used for improving entrepreneurial competences as well.
Digital gamification	<a href="#">Escape for Democracy e-platform</a>	Virtual educational escape rooms	Virtual Escape rooms that improve entrepreneurship skills of learners through teaching citizenship education	Youth	Improving entrepreneurship competences while teaching citizenship education topics to youth
In-class game-based learning activity	Skills for entrepreneurs live action board game (Activity from FEMP KA1 training implemented internally by CEDRA staff)	Live-action board game	Live-action board game is set in a physical environment and is used to teach various entrepreneurship topics to youth	Youth	Players play in teams, solving a bunch of simple tasks in order to reach the final level and achieve all the entrepreneurship skills game teaches.

## Serbia

ENVIRONMENT	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
Mobile app (Andrioid)	<a href="#">Vučilo</a>	Quiz	The goal of the game is to provide support in teaching and practicing Serbian. The game is designed as an innovative method of learning and will be most effective for those who have already learned spelling in school. It provides an interesting way to practice. All areas of Serbian language spelling are covered, and all examples are presented in context within sentences.	Users who have already learned the spelling of Serbian language in school – focused on youth.	Application provides over 2,000 unique examples covering all parts of spelling which helps to users in their Serbian language education
Online - web application	<a href="#">Bezbedni na internetu</a>	Storytelling	This game was developed with the aim of informing children and young people about the dangers lurking on the internet, as well as advising them on ways to protect themselves from them.	Children and young people.	Children and young people are encouraged to use the internet in a correct and safe manner - to raise awareness.
Online games on website	<a href="#">Razvojne igre – učimo reči</a>	Quiz	Games as a speech and attention therapy.	Children	Games as therapy.
Online course	<a href="#">Kampster – socijalno preduzetni štvo</a>	Online education – lectures and quiz	Education related to social entrepreneurship	General audience	Introducing social entrepreneurship in Serbia.
In-class gamification	<a href="#">FT1P</a>	Board game, Storytelling	Tax education for beginners – funders of SMEs.	General audience	Introducing the tax regulation for new SMEs in Serbia.

### Cyprus

Environment	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
Digital gamification	<a href="#">Online Escape Rooms</a> <a href="#">Co-Art-hub</a>	Compendium of challenge-based resources (24 online escape rooms)	Challenge-based Online tools to develop entrepreneurial and digital competences among young ARTpreneurs	Young, unemployed, CCS workers and aspiring (art) entrepreneurs	Enhance specific entrepreneurial and digital skills and competences.
Online gamification	<a href="#">Innovative psychometric Serious Game “INSPIRE”</a> .	“INSPIRE- Innovative Serious Play for Identifying your Role in a Social Entrepreneurship” (INSPIRE) project	Find solutions to challenges addressing SDGs, and deal with everyday activities and processes in a small social enterprise.	Young people (age 18-24)	The scope is for players to become aware of themselves and identify the role they can play in a team of a Social Enterprise, and deal with the challenges.
Gamification, In-class game-based learning activity	<a href="#">The “Green STEAM Incubator”</a>	The game consists of 85 cards of different categories of animals, plants, cereals, fruits, vegetables, and function cards that illustrate the usage of STEM-interrelated concepts with the scope of permaculture and environment education.	The aim is to find cards that match each other, see the beneficial associations in permaculture, and understand the links between different categories of plants/animals/cereals. The principles of permaculture being developed throughout the game participants can acquire a systemic	Youth interested in science	The Green STEAM Incubator board game aims to recall several soft skills such as management, self-organization, and time management. The game will also help develop observation and reasoning skills in mathematical logic, analytical, and critical skills.

			vision of the earth, permaculture, consumption, farming.		
Digital gamification, In-class game-based learning activity	<a href="#">Agro EduGames: IO2- Module: Escape Rooms/Break-out Boxes on Agro-Entrepreneurship</a>	The players would assume specific roles, which will present them with more clues while playing and will attempt to search scenes, people, and objects in order to solve the mystery and escape. The players will collaborate together to beat the game. They will either escape all together or not.	AgroEduGames; An array of contemporary game-based learning methodologies towards the amelioration of Agro-entrepreneurship. For example, the <a href="#">Escape Card Game</a> teaches youth how to overcome various daily AE challenges through an innovative, playful and portable way	Youth organisations, Rural municipalities, Agricultural associations, etc. –to develop and implement their Educational Escape Rooms.	An escape card cooperative game which will empower youth to cultivate their competences in AE and tackle challenges encountered in the daily routines of agro-enterprises.
In-class gamification, Digital gamification	<a href="#">Escape rooms for Social Entrepreneurship; A COMPREHENSIVE MODULE PACK WITH SCENARIOS</a>	Website with 12 ready to play escape games	12 “Escape rooms scenarios on Social Entrepreneurship” (4 languages), including all the materials, a thoroughly-analysed curriculum, blueprint, multimedia and a digital toolkit containing Virtual Reality	Youth organizations and Youth centers, Young people	i) creation of educative escape rooms with a clear inclusive aspect to allow an equal participation for the learners with a specific learning disorder, and other marginalized groups, such as NEET, long-term unemployed and migrants and refugees.

<p>Digital gamification</p>	<p><a href="#">AgriCharisma Digital serious game</a></p>	<p>Applying innovative non-formal game-based learning methods, developing innovative activities and creating innovative tangible digital tools</p>	<p>Promoting open education and innovative practices in agro-entrepreneurship in a digital era ; on assessing personality characteristics and developing skills on Agro-entrepreneurship</p>	<p>Young people (age 18-30) especially from rural areas</p>	<p>The aim of the game is to enable young people to reflect on their skills and personality traits to identify which role they can play in founding a team for agro-entrepreneurship.</p>
<p>Web and mobile gamification</p>	<p><a href="#">EntriNNO Interactive digital game application</a></p>	<p>Interactive digital game, which will be accessible online and offline, and can be adapted to fit various contexts.</p>	<p>An interactive online game is being developed, its main focus is to enhance the skills of young EU citizens, a crucial population of a progressive, entrepreneurial and market-based economy and society.</p>	<p>Youth</p>	<p>Equip adult learners with entrepreneurship and innovation, decision making, digital literacy, problem solving and communication</p>



## Belgium

Environment	TOOLS	GAME ELEMENTS	PURPOSE	USERS	IMPACT/KEY FINDINGS
<p>Mcnsura</p> <p>Learn&amp; connect</p>	<p><a href="https://www.mensura.be/en/learn-and-connect/training-courses/play-it-safe-game-based-learning-on-well-being-and-safety-at-work">https://www.mensura.be/en/learn-and-connect/training-courses/play-it-safe-game-based-learning-on-well-being-and-safety-at-work</a></p>	<p>Online game</p>	<p>Game-based learning by PLAY. IT teaches practical skills with interactive simulations. They use gaming techniques to quickly get you up to speed on prevention and safety procedures. Learning becomes fun which ensures quicker knowledge uptake. The users learn how to act in the event of fire, provide first aid or handle psychosocial risk situations at work.</p>	<p>employees</p>	<p>Via games on a tablet, desktop or even in virtual reality. All available in more than 20 languages and adapted to your sector and environment.</p>
<p>Way2Play</p>	<p><a href="https://way2play.eu/over-ons/">https://way2play.eu/over-ons/</a></p>	<p>Toolbox business games</p>	<p>In this informative and interactive workshop you will gain insight into the basic principles</p>	<p>companies, organisations</p>	

			and pedagogical structure of game-based learning in half a day.		
Gamification of Digital Learning	<a href="https://gdl-project.eu/resources/">https://gdl-project.eu/resources/</a>	e-modules,	methodology for teachers to use gamified online practices  free online course for teachers, trainers and educators, in particular of secondary school. It aims to enhance their understanding and confidence on using gamification in digital learning, in a simple and practical way	teachers	toolbox for teachers to encourage game-based learning
MOOC for teachers	<a href="https://www.pok.polimi.it/courses">https://www.pok.polimi.it/courses</a>	learning through a mix of video, interactive activities and discussions as well as sharing of resources.	integration of games into our teaching and learning	teachers	Activity includes the creation of a lesson plan including elements of game-based learning, and the final peer review activity at the end of modules.
Escape rooms (Speaker, EU project)	<a href="https://speakerproject.eu/search-resources/?jsf=jet-engine&amp;tax=search">https://speakerproject.eu/search-resources/?jsf=jet-engine&amp;tax=search</a>	scenarios, solving riddles, decoding	Students will develop their reading, writing,	students	Language learning is a discipline that calls for regular practice and immersion, therefore escape rooms are a

	<a href="#">-resource-languages-sr:112</a>		listening and speaking skills in the foreign language by solving riddles and challenges to escape the room.		perfect environment to challenge that.
Escape rooms (Steamer- EU project)	<a href="https://steamerproject.eu/escape-rooms/">https://steamerproject.eu/escape-rooms/</a>	decoding, riddles, challenges, hints	pedagogical resources for the STEAM learning in secondary schools	teachers, students	Youngsters in Europe are not equipped with basic skills necessary for numerous valuable jobs in our current economy. It is therefore essential to work on improving the level of EU pupils in STEAM. This project encourages student engagement and motivation by offering innovative ways of learning and introduces the concept of educative escape rooms/games that can play a very positive role in improving education in general and the learning of STEAM in particular.
online game (Di-TO, E+ project)	<a href="https://sites.google.com/view/di-to">https://sites.google.com/view/di-to</a>	role play, simulations, experiments	students take part in a serious game which includes elements of role play, simulations and framed economic experiments, focusing on circular	students	Students will go through the scenarios where the circular economy model can be applied. In this way there is a better understanding on how to include the Circular economy model into concrete examples.

<p>8 Synopsis for inspiration &amp; 12 Escape Rooms scenarios (E+, ER-SE project)</p>	<p><a href="https://er-se.eu/en/resources/">https://er-se.eu/en/resources/</a></p>	<p>role play, scenarios, experiments</p>	<p>Student go through module pack with scenarios</p>	<p>students, prospective social entrepreneurs</p>	<p>The resource provides sNGO and other youth organizations' educators with appropriate and up-to date educational tools on social entrepreneurship, which in parallel take into consideration all the synchronous digital possibilities and innovative educational processes that are able to reinforce the absorption of relevant knowledge, therefore operating as the main catalyst in inspiring people to apply social entrepreneurship.</p>
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## Collection of the scenarios for the development of the gamified-educational resources tools and activities that teach and promote social and eco-entrepreneurship to youth

### **Name: Calculate the break-even point**

**Type:** Digital Educational resource & activity

**Format:** Excel exercise or similar table; Moodle platform

**Methods:** Game based learning, Data processing, Analyzing, Brainstorming

#### **Pedagogical objective:**

Understanding of marketing planning on the example of examining the market potential of a certain product in relation with the business circumstances from the example.

#### **Inspiration from European Heritage (O1 good practices):**

##### [Humana Nova](#)

Organization works in the scope of 3 areas: environment, social environment and economy. They employ persons with disabilities and other socially excluded persons. The company produces clothing and textiles through reusing, repurposing, recycling and other sustainable techniques.

#### **SYNOPSIS:**

The participants are given to calculate the break-even point based on the given numbers/amounts.

When entering a certain market, it is of great importance to assess the sales potential of a new product, that is, the assessment of the possible market realization of the new product, more precisely, whether the product is profitable. Although it is a demanding phase of marketing planning, with the help of the given indicators, you can easily access the online educational game.

Some of the main explanations:

Fixed costs are costs that do not react to increase or decrease in business volume, such as:

- lease of business premises,
- bookkeeping services,
- advertising and promotion,
- gross wages of employees, etc.

Variable costs are costs which change in proportion to the changes volume of business, and per unit of performance remain same, such as:

- raw materials and packaging,
- energy sources (electricity, fuel, water, etc),
- profit tax.

The break-even point of sales is the volume of sales at which the total revenue equals the total costs. Profitable business, i.e. profit, is realized above this volume of sales. The volume of sales up to the

break-even point results in a loss-making business because the total costs are greater than the total income. The break-even point is often referred to as the break-even point. This analysis is especially useful for entrepreneurs - beginners in business (start-ups).

**Requirements:**

- Prepare a table or similar space with the given data;
- Enable participants with clear instructions what they need to do;
- Leave enough time for the participants to prepare, 5-10 minutes;
- Create online game based on given data.

**Competences gained:**

- Understanding the importance of marketing planning so that when the participant enters a certain number of pieces /quantities, the profit (amount) changes (Excel table with formulas can be provided);
- Understanding of sales volume planning in relation to testing market potential (relation between prices, costs and volume of sales);
- Mastery with one specific market /business planning examination technique.

**Number of participants:**

The game can be played individually or in pairs/teams (3-5 participants).

**Duration:**

5-10 minutes for preparation

20-30 minutes for exercise

10-15 minutes for discussion (if in pairs).

**Sources:**

This example was created on the basis of exercises that CDP "Globus" used to prepare its educational programs, and on the basis of available data from real social enterprise, in this case a workshop in which people with disabilities are engaged on making didactic material from recycled paper.

1. Sales volume	0	100	400	600	850	1000
2. Selling price	12	12	12	12	12	12
3. Total income <b>(1X2)</b>	0	1200	4800	7200	10200	12000
4. Variable costs per unit of product	2	2	2	2	2	2
5. Total variable costs <b>(1X4)</b>	0	200	800	1200	1700	2000
6. Total fixed costs	10000	10000	10000	10000	10000	10000
7. Total costs <b>(5+6)</b>	10000	10200	10800	11200	11700	12000
<b>8. Profit (3-7)</b>	-10000	-9000	-6000	-4000	-1500	<b>0</b>

Break-even analysis results:

The quantitative threshold of profitability is 1,000 products.

The workshop needs to produce 83.3 products per month.  
In one day, the workshop needs to make an average of 3.7 products.

### Name: Leadership in eco-social entrepreneurship

**Type:** Digital educational tool – online

**Format:** JCloze

**Methods:** Creating an exercise to fill in the gaps in the text/ Learning about the topic of leadership through mastering the text

**Pedagogical objective:**

Understanding the role of leadership within the broader scope of organizational management, with specific focus on waste management, based on an example in which the participants need to fill in the blanks in the text (easily recognizable words).

**Inspiration from European Heritage (O1 good practices):**

[Ekopak d.o.o.](#) The mission of Ekopak is to enable the fulfilment of legal obligations in accordance with the Rulebook for the management of packaging and packaging waste at the lowest sustainable costs for all its clients and with the greatest environmental benefits for the Federation of Bosnia and Herzegovina.

**SYNOPSIS:**

The task consists of 2 parts:

First task for participant/s is to watch two videos the first of which refers to organizational management in order to become more familiar with the broader concept of management.

Proposal for video watching: <https://www.youtube.com/watch?v=q6LMjurECZM>

The second video is on Proper Waste Management | How waste reduction and recycling help our environment, proposal for video: <https://www.youtube.com/watch?v=Qyu-fZ8BOnI>

2) Participants get a text with empty fields that they need to fill in. The missing words are not difficult to bring into connection to the given text, and minor and appropriate deviations could be acceptable. Based on the given words, participants need to recognize which goes where and arrange them properly: environment, social, data, companies, in accordance, entities, experiences, types, establishment, distributed, activities, before, mark, company, countries, amount, prescribed.

In Bosnia and Herzegovina, there is no official data on the amount of packaging that is placed on the market, so we cannot talk about exact data and precise statistics on the amount of packaging that ends up as waste, its disposal or recycling, except for the part that is dealt with by management system operators packaging and packaging waste.

"Ekopak" is a company that was founded by leading local, regional and multinational companies operating in Bosnia and Herzegovina, in accordance with the provisions of the Rulebook on packaging and packaging waste management adopted by the Federal Ministry of Environment and Tourism. Their mission is to fulfill the recycling goals prescribed by the Federal Ministry of Environment and Tourism on behalf of business entities, manufacturers, importers, and distributors of packaged products. „Ekopak“ works on behalf of these business entities according to the principle of extended producer responsibility.

Ekopak strategy is based on:

- Application of legislation on packaging and packaging waste in accordance with the best experiences and knowledge from Europe and the world;
- Establishment and development of an efficient integrated system for managing packaging and packaging waste for all types of packaging waste: glass, paper, metal, plastic, wood;
- The use of existing communal capacities for the establishment of the system and their further development with the development of the system.

One of the principles of Ekopak is operating on a non-profit basis, which means that the owner's intention is not to make a profit through the company's activities. The profit made at the end of the business year is not distributed to the owners, but will be reinvested in the operator's activities.

Ekopak is the only one in Bosnia and Herzegovina that has the right to award the internationally protected mark "Green Dot" to companies that treat their packaging waste responsibly.

Responsibility towards the environment is also expressed through taking care of the packaging of the products we buy every day. That is why it is important to check whether the product is marked with the "Green dot" sign before purchasing.

"Green Dot" is an internationally protected symbol used to mark product packaging. It is a symbol that shows that the company using it is involved in the packaging waste recycling system. It is an indicator of the social responsibility of companies that contribute financially to the establishment and development of an efficient, transparent and sustainable system of collection and recycling of packaging waste.

"Green Dot" trademark is registered in more than 170 countries and it's considered as the most protected trademark in the world.

#### Requirements:

- Prepare a table or similar space with the given text;
- Create online game based on given data;
- Enable participants with clear instructions what they need to do;
- Leave enough time for the participants to prepare, 5-10 minutes.

#### Competences gained:

- Familiarizing with key features of organizational management;
- Understanding the significance of waste management in environment;
- Learning about eco-social leadership through text mastery on this topic.

#### Number of participants:

The game can be played individually or in pairs/teams.

#### Duration:

5-10 minutes for preparation

10 minutes for video watching



30-45 minutes for exercise/game

10-15 minutes for discussion (if in pairs).

**Sources:**

<https://www.ekopak.ba/>

<https://www.zelenatacka.ba/>

**Name: PR for social enterprise**

**Type:** Digital Educational resource & activity

**Format:** JQuiz or Kahoot

**Methods:** Game based learning based on quiz; Adoption of information; Brainstorming

**Pedagogical objective:**

Participants acquire knowledge about public relations, with a special focus on social and environmental impact, based on prepared materials and quiz.

**Inspiration:**

[Yulu PR](https://yulupr.com/melissa-orozco/) is a social and environmental impact relations agency using the tools of communications to drive positive change. An award-winning social and environmental impact communications firm founded on the principle of leading with impact to tell stories that matter. Web: <https://yulupr.com/melissa-orozco/>

**SYNOPSIS:**

1. Step: Through the content of the ppt presentation, participants are introduced to the concept and characteristics of public relations within the framework of socially and environmentally responsible business. Proposed content (partially or in whole): <https://www.slideshare.net/yulupr/impact-storytelling-pr-for-social-enterprises>
2. Afterwards, participants access a quiz on their device or computer using an access link or code, and they can approach quiz (marked correct answers):

**1. Public relations are related to:**

- a) Non-profit organizations
- b) Profit organizations
- c) All types of organizations who want to develop positive relationships between businesses and the public.

**2. Public relations refer to communication and relations with:**

- a) Government institutions
- b) Private companies
- c) Wider public, including listed above.

**3. What is the main purpose of public relationship?**

- a) Selling the product
- b) Communication with all stakeholders
- c) Development of a strategic plan.

**4. Analysis of public relations often includes:**

- a) Communication audit
- b) Communication strategy
- c) List of media contacts.

**5. Which criterion you expect to be most important in public relations messages distributed?**

- a) Timeliness
- b) Impact
- c) Expiration.

**6. Two most important features of public relations are:**

- a) Company's mission and vision
- b) Speaking and writing skills
- c) Credibility and competency.

**7. Publicity is based on sponsorship:**

- a) True
- b) False
- c) Sometimes.

**8) Which of the following is not a part of the core values of public relations, especially in social enterprise:**

- a) Knowledge
- b) Honesty
- c) Profit.

**9) The process of identifying publics who are involved and affected by a public relation is:**

- a) Stakeholders' analysis
- b) Focus groups
- c) Survey.

**10) The most important phase in developing a communication plan is:**

- a) Budget
- b) Message

### c) Research.

#### Requirements:

- Provide introductory content to familiarize participants with the topic;
- Create a quiz easily accessible;
- Ensure access to the quiz.

#### Competences gained:

- Acquired/improved knowledge of public relations in the social business context;
- Recognizing the social role of public relations;
- Understanding the purpose and tools in public relations planning.

#### Number of participants:

The game can be played individually.

#### Duration:

10 minutes for introductory ppt

20-30 minutes for game.

#### Sources:

Motivated by [https://www2.tesu.edu/tecep\\_desc/COM-210.pdf](https://www2.tesu.edu/tecep_desc/COM-210.pdf) and some articles on the topic.

#### Name: “Time is money”

**Type:** Digital educational tool – online

**Format:** JCross

**Methods:** Game-based learning, information gathering, solving the crossword puzzle

#### **Pedagogical objective:**

Based on certain hints, participants recognize the basic characteristics and elements of time management. The whole process is carried out in an interesting way through a crossword puzzle.

#### **Inspiration:**

[Cluster for eco-social innovations and development CEDRA Split](#) is an association founded in 2013, which operates in the field of promoting social entrepreneurship, sustainable development and social innovations. The association has experience with the preparation, mentoring, implementation and administrative management of projects financed from national, EU and other sources, and the projects are implemented through the cooperation of the public, private and civil sectors.

#### **SYNOPSIS:**

Step 1 is for the participants to look at a picture that illustrates all the key words of the crossword puzzle.

The second step - participants approach the crossword puzzle with hints that can help them solve the crossword puzzle.

#### Proposals for hints:

One of the main goals metrics says that goals should be time-bound. What matrix is it about? SMART

A list of items planned or to be covered at the meeting is? AGENDA

Doing more than one thing at a time is called? MULTI-TASKING

A written list that serves as a kind of guideline of what you have to do over the next 24 hours. TO DO LIST

The process of determining the importance of tasks, comparing them to one another, and arranging them in order to achieve goals in the most effective manner is? PRIORITIZATION

Assigning responsibilities to other people who are specialized for these tasks in order to get the job done in the most efficient and productive way is? DELEGATION

Free puzzle templates: [https://wordmint.com/public\\_puzzles](https://wordmint.com/public_puzzles)

Example: [https://www.educaplay.com/printablegame/5484995-puzzle\\_time\\_management.html](https://www.educaplay.com/printablegame/5484995-puzzle_time_management.html)

#### **Requirements:**

- Prepare appropriate instructions for participants;
- Prepare appropriate photo with illustrations;
- Create a network of interconnected words;
- Prepare crossword puzzle;
- Enable participants with access and hints leading to appropriate word.

#### **Competences gained:**

- Participants familiar with the basic characteristics and elements of time management;
- Encouraging participants to think about and study time management.

#### **Number of participants:**

The game can be played individually or in teams /pairs (2-3 persons).

#### **Duration:**

5 minutes for preparation

30-45 minutes for playing

10 minutes for discussion (optional).

#### **Sources:**

Idea motivated by examples like: [https://www.educaplay.com/printablegame/5484995-puzzle\\_time\\_management.html](https://www.educaplay.com/printablegame/5484995-puzzle_time_management.html)

## Name: Business through ethical lens

**Type:** Digital educational tool – digital educational escape room

**Format:** PowerPoint

**Methods:** Game based learning through digital gamification, educational escape room, brainstorming, role-play education, analyzing, problem-solving, critical thinking

### **Pedagogical objective:**

The participants are given 3 concrete scenarios of business situations (3 rooms) to examine ethical thinking. They should consider their potential role as responsible person in specific cases. Afterwards, they need to go through quick ethical tests in order to get out of the rooms.

The main goal is to understand basic ethical issues in concrete situations and to become aware of significance of doing business in an ethical way.

### **Inspiration from European Heritage (O1 good practices):**

Ekonest - Help customers contribute to a clean and healthy planet. They conduct their 49 business in an environmentally responsible, socially responsible and ethical manner, putting the environment at the core of everything.

### **SYNOPSIS:**

Three young people want to become entrepreneurs. They applied to the program, which includes, among other things, financial support. Whether they will receive financial support depends on whether they attended all the modules and completed the knowledge verification tests. It remains for them to pass tests on business ethics. Their task is to enter a room through an online game where they will take into consideration specific business cases.

Business case 1: A worker in a company that has been operating successfully for 10 years discovers that a new product - milk - has a negative impact on the health of a part of customers. This product has recently been the most wanted. The worker reports this to the director. If the director decides to withdraw the product in order to review and possibly solve problems related to the product, this will have a negative impact on the company's profit and endanger the business.

Business case 2: The company wants to start a new type of production in an area where such production could lead to the destruction of an animal species. As the company is in financial difficulties, the analyzes showed that there is a great demand for the product on the market and that precisely such production could lead to new income and business improvement.

Business case 3: A long-time employee suffers an injury at work, which is why he has to take sick leave. During the tests, it is established that the worker's health is seriously threatened, and the cause is most likely work with substances that have a negative impact on human health. As time passes, it becomes clear that the recovery will be long. The director has to make a decision whether to continue with the contractual relationship because another worker is needed in that position who can perform the necessary tasks.

After familiarizing themselves with the scenarios, the participants think for 5 minutes each about how they would act in specific situations if they were in the position of managers/directors. To get out of the room they have to pass quick ethics tests.

At the end, participants can discuss certain situations, that is, actions and what they learned during the game.

**Requirements:**

- To prepare a scene with business cases;
- To enable participant to enter the rooms;
- To ensure enough time to familiarize the participants with business cases;
- To prepare fast ethical tests.

**Competences gained:**

- General understanding of ethics in business;
- Knowledge about making ethical decisions in the context of specific business situations.

**Number of participants:**

The game is intended for three people.

**Duration:**

5-10 minutes for introduction of scenarios

20-30 minutes for game

10-15 minutes for discussion

**Sources:**

Original idea (CDP “Globus”).

**Name: Carbon Offset** [Ecological Responsibility + Resource Management]

**Type:** Digital educational tool – Data gathering and competition game based on statistical **differences which encourage progress in green technologies and policies.**

**Format:** Web / Mobile based app

**Methods:** Game like based learning using application techniques similar to fitness or statistics tracking app. Encourages users to perform „Green” actions using system of reward points which can be later redeemed for real-life compensations.

**Pedagogical objective:**

The pedagogical objective for carbon offsets is to raise awareness and understanding of the impact of human activities on the environment and the importance of reducing carbon emissions to mitigate the effects of climate change. Carbon offsets can be used as a tool to educate people on the concept of carbon footprint and the ways to offset the emissions that cannot be avoided. The objective is to encourage individuals, organizations, and governments to take responsibility for their carbon emissions and take steps to reduce their impact on the environment.

By teaching about carbon offsets, people can learn how to calculate their carbon footprint, understand the benefits of carbon offsets, and become more environmentally conscious. The pedagogical objective is to provide information and resources that can help people make informed decisions about their actions and contribute to the global effort to reduce greenhouse gas emissions.

The pedagogical objective for carbon offsets is to empower individuals to take action to reduce their carbon footprint and make sustainable choices that help protect the planet for future generations.

**Inspiration from European Heritage (O1 good practices):**

[Fietspunten](#) - Association with social activity in Belgium. Bicycle points encourage the use of bicycles in combination with public transport, such as train stations. They are run by their members who are responsible for the maintenance of the bicycles at the train stations and for bicycle leasing for companies, local authorities or private individuals. They are social enterprises with a focus on sustainable bicycle mobility.

[EkoNest](#) – SME (family-owned, female-led company) in Cyprus that help customers contribute to a clean and healthy planet. They conduct their business in an environmentally responsible, socially responsible and ethical manner, putting the environment at the core of everything.

[Ecosia](#) - Social enterprise, a green start-up from Berlin, founded in 2009. The company donates 80% or more of its profits to non-profit organisations that focus on reforestation. It uses the generated money from advertisements to plant trees for the environment. So far, they have planted over 100 million trees and currently have around 7 million users.

[European Climate Pact](#) - The European Climate Pact for Green Buildings is an initiative launched by the European Commission to support the renovation of buildings in the European Union (EU) to make them more energy-efficient and environmentally friendly. The goal of the pact is to reduce the carbon footprint of buildings and to contribute to the EU's climate neutrality objective by 2050.

[World Economic Forum](#) - The World Economic Forum (WEF) is a non-profit organization that brings together leaders from business, government, and civil society to address global challenges. One of the main ideas promoted by the WEF is the concept of "net-zero living," which involves reducing one's carbon footprint as much as possible and then offsetting any remaining emissions through carbon offsetting schemes

**SYNOPSIS:**

**Step 1:** Calculate Your Carbon Footprint

In this step, the player calculates their current carbon footprint. This can be done through an online calculator or by answering a series of questions about their daily habits. The player should aim to answer honestly to get an accurate estimate of their carbon emissions.

**Step 2:** Set a Target Reduction Goal

In this step, the player sets a target reduction goal for their carbon footprint. The goal should be challenging but achievable. The player should aim to reduce their carbon emissions by a specific percentage within a given timeframe.

**Step 3:** Identify Areas to Reduce Carbon Emissions

In this step, the player identifies areas where they can reduce their carbon emissions. This could include changing their diet, reducing energy consumption, or using more sustainable transportation options. The player should aim to identify at least three areas where they can make changes.

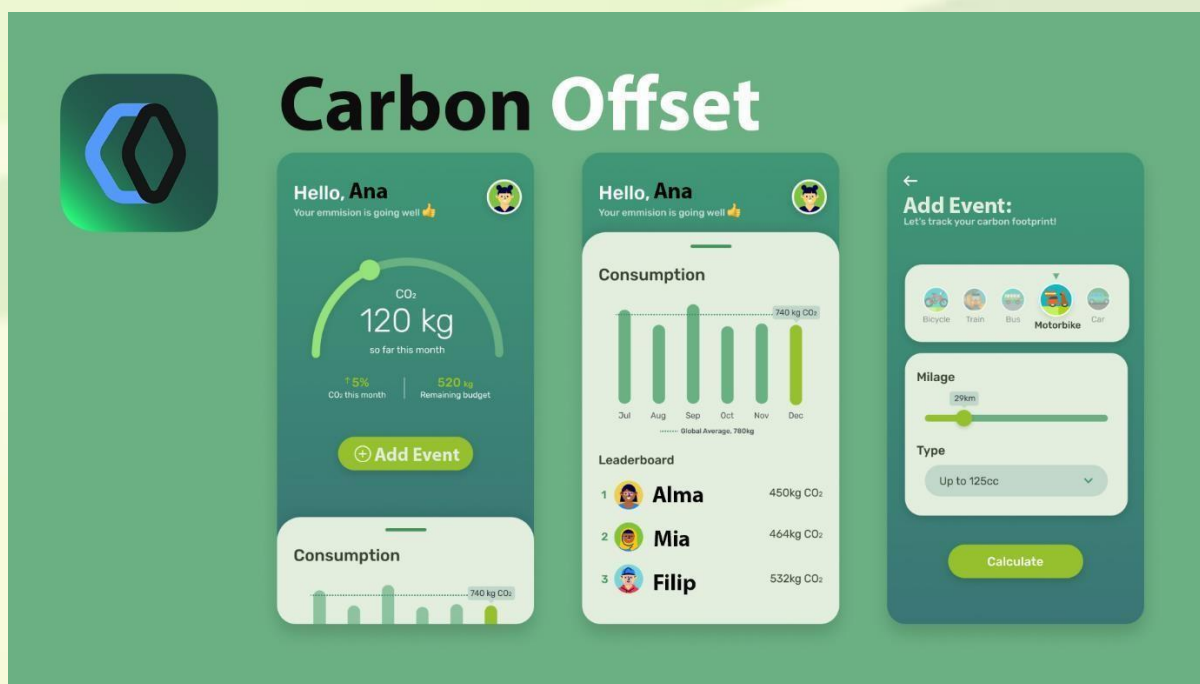
**Step 4: Take Action**

In this step, the player takes action to reduce their carbon emissions. This could include switching to a vegetarian diet, using public transportation, or installing energy-efficient appliances. The player should aim to make changes that align with their lifestyle and budget.

**Step 5: Track Progress and Celebrate Success**

In this final step, the player tracks their progress towards their carbon reduction goal. They can use a carbon tracking app or a spreadsheet to monitor their emissions. If the player reaches their target reduction goal, they can celebrate their success and set a new, more ambitious goal.

Overall, the game encourages players to take action to reduce their carbon emissions and make a positive impact on the environment. It also helps raise awareness about the importance of individual action in combating climate change.



**Requirements:**

1. Accurately Calculate Carbon Footprint: The app user should accurately calculate their carbon footprint using the app's carbon footprint calculator or by entering accurate information about their daily habits.
2. Set Realistic Carbon Reduction Goals: The app user should set realistic carbon reduction goals that are challenging but achievable within a given timeframe.



3. Identify Areas to Reduce Carbon Emissions: The app user should identify areas where they can reduce their carbon emissions, such as transportation, energy consumption, and food choices.

4. Take Action to Reduce Carbon Emissions: The app user should take action to reduce their carbon emissions, such as using public transportation, switching to a plant-based diet, and reducing energy consumption in their home.

5. Track Progress and Celebrate Success: The app user should track their progress towards their carbon reduction goals and celebrate their successes along the way.

6. Share Progress with Others and Compete: The app user can share their progress with friends and family to encourage and compete with others to make change and reduce their carbon output.

#### **Competences gained:**

1. Environmental Awareness: Players can gain a deeper understanding of the environmental impacts of their daily habits and learn about sustainable practices that can help reduce their carbon footprint.

2. Problem-Solving: Players can learn how to identify areas where they can reduce their carbon emissions and develop strategies to implement these changes.

3. Goal-Setting: Players can learn how to set realistic carbon reduction goals and develop a plan to achieve them.

4. Data Analysis: Players can learn how to use data to track their carbon footprint and monitor their progress towards their carbon reduction goals.

5. Collaboration and Communication: Players can learn how to work collaboratively with others, share ideas, and communicate their progress towards reducing their carbon footprint.

Overall, playing a carbon reduction game can help players develop a range of competencies that are valuable in both personal and professional settings.

#### **Number of participants:**

One singular participant plays and collects data which is later compared to annual progress, as well as having a leaderboard with their friends.

#### **Duration:**

5 - 10 minutes for App setup,

30 minutes for Carbon reduction and offset research,

10 - 15 minutes for further planning and implementing new found data and techniques. Data is collected by direct user input and with that the user choses the input frequency.

**Sources:** All resources for the application are creator made and manufactured. Logotype and graphics presentations are produced using Adobe Creative Cloud suite as well as Microsoft Power Point for presentational capabilities.

**Name: CarboNation (Carbon Nation)** [Ecological Responsibility + Resource Management + Finance Management]

**Type:** Competitive single player game – User is given a country to run and is in charge of doing its own research, which encourages resourcefulness and data analytics.

**Format:** Data gathering/Comparison – Both Offline and Online formats

**Methods:** Game like based learning using research techniques similar to standardised data collection and statistics tracking framework. Encourages users to achieve „Green” status as a country by balancing expenses, benefits and trade-offs.

**Pedagogical objective:**

By requiring the user to gather and analyse data about a specific country, the game encourages the user to think critically about different aspects of that country, such as its geography, culture, and economy. The user must also practice effective research skills, such as identifying credible sources, organizing information, and synthesizing data.

Additionally, the game could aim to enhance the user's cross-cultural understanding and awareness. By exploring different countries and their unique characteristics, the user can gain a better understanding of the diversity of the world and develop a more nuanced perspective on global issues.

Resourcefulness refers to the ability to effectively and efficiently locate, obtain, and utilize resources. In the context of the game, this would involve the user being able to identify credible and relevant sources of information about the country, including primary sources like government reports and statistics, as well as secondary sources like news articles and academic papers. The user would then need to evaluate and synthesize this information to make informed decisions about how to best run the country.

Overall, the pedagogical objective of the game would be to help the user develop valuable research, critical thinking, and cross-cultural skills that are applicable in many different contexts.

**Inspiration from European Heritage (O1 good practices):**

[Fietspunten](#) - Association with social activity in Belgium. Bicycle points encourage the use of bicycles in combination with public transport, such as train stations. They are run by their members who are responsible for the maintenance of the bicycles at the train stations and for bicycle leasing for companies, local authorities or private individuals. They are social enterprises with a focus on sustainable bicycle mobility.

[EkoNest](#) – SME (family-owned, female-led company) in Cyprus that help customers contribute to a clean and healthy planet. They conduct their business in an environmentally responsible, socially responsible and ethical manner, putting the environment at the core of everything.

[Model United Nations](#) - In Model UN, participants research and prepare for the conference by learning about the country they are representing, its foreign policy, and its position on various global issues. During the conference, participants engage in debates and negotiations with other delegates in order to draft and pass resolutions that address the challenges facing the world.

[United Nations COP 27](#) - The COP is a yearly conference where representatives from nearly 200 countries come together to discuss global climate action and progress towards reducing greenhouse

gas emissions. The COP serves as a platform for negotiating and implementing international agreements on climate change, including the Paris Agreement.

#### SYNOPSIS:

The objective of the game is to challenge the user to implement environmentally sustainable policies and practices in different countries with the aim of making it more green. Having in mind that the Western Balkans region is greatly affected by climate change and accompanying environmental challenges such as the ecological crisis, the game will enable users to develop valuable research, critical thinking and intercultural skills that are applicable in many different contexts, as well as applying good practices from EU countries - Belgium, Cyprus in the countries of the Western Balkans.

Here are 6 possible synopsis points for the game's objectives:

**Step 1.** Environmental awareness: The game seeks to promote awareness of the importance of environmental sustainability and the role that individuals and governments can play in reducing carbon emissions and protecting the planet.

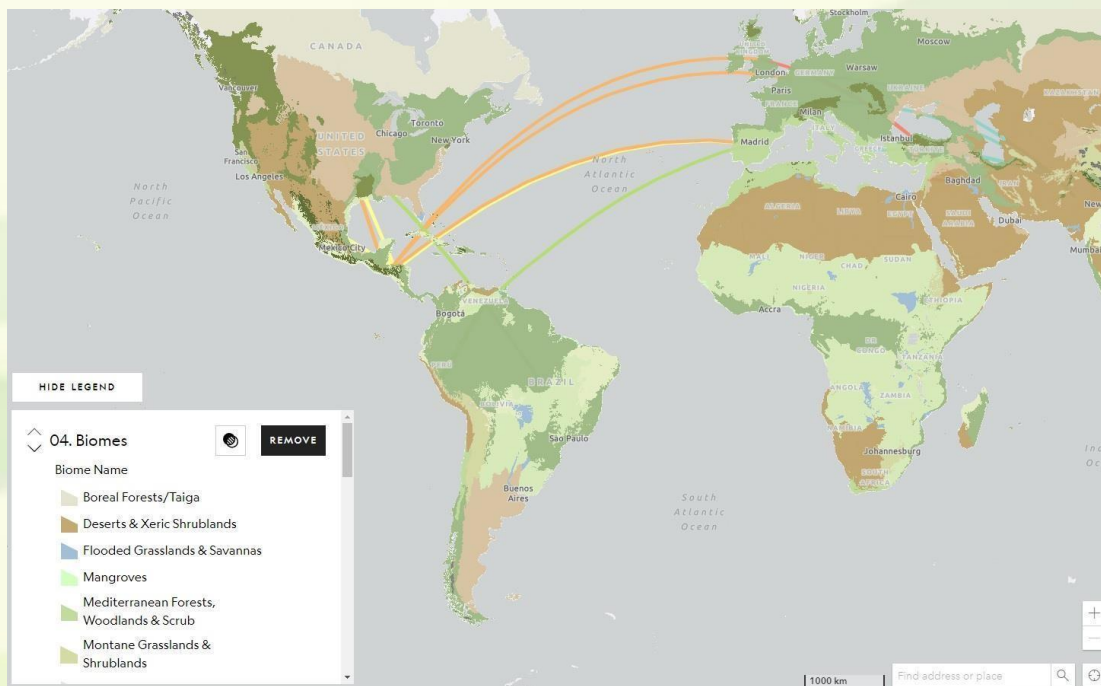
**Step 2.** Strategic decision-making: Through the game, users will need to make strategic decisions to address environmental issues in their assigned country, such as reducing carbon emissions, protecting biodiversity, and promoting renewable energy sources.

**Step 3.** Resource management: Users will need to manage resources effectively, such as water, energy, and land use, in order to make the country more environmentally sustainable.

**Step 4.** Collaboration and diplomacy: Users may need to collaborate with other countries, organizations, or stakeholders to address environmental issues that go beyond national borders. The game encourages diplomacy and negotiation skills to achieve collective solutions.

**Step 5.** Impact assessment: Users will need to assess the impact of their policies and actions on the environment and track their progress over time, using data analytics and feedback mechanisms.

**Step 6.** Education and engagement: The game aims to educate and engage users in the challenges and opportunities of environmental sustainability, by providing a fun and interactive learning experience that promotes long-term behaviour change.



### Requirements:

- 1. Realistic simulation:** The game should simulate the complexities of managing a country, including the social, economic, and political factors that affect environmental sustainability. The simulation should be based on real-world data and models, providing users with an accurate representation of the country they are managing.
- 2. Data analytics:** The game should require users to gather, analyze, and interpret data to make informed decisions about environmental policies and practices. The game should provide users with access to a range of environmental data, including carbon emissions, energy consumption, land use, and biodiversity.
- 3. Customization:** The game should allow users to customize their policies and practices based on their own priorities and values. This may include setting targets for reducing carbon emissions, investing in renewable energy, or protecting endangered species.
- 4. Feedback mechanisms:** The game should provide users with feedback on the impact of their policies and practices, allowing them to see how their decisions affect the environment and the country they are managing. The game should provide users with visualizations and data analytics to help them track their progress over time.
- 5. Collaboration and competition:** The game should encourage users to collaborate with other players to address environmental challenges and share best practices. The game may also include a competitive element, such as a leaderboard or scoring system, to motivate users to achieve their goals.
- 6. Educational resources:** The game should provide users with educational resources, such as articles, videos, and quizzes, to help them learn more about environmental sustainability and the challenges

facing the world today. The game should also provide users with tips and resources to help them make more sustainable choices in their own lives.

### Competences gained:

1. Strategic thinking and decision-making: Users will need to make informed decisions about environmental policies and practices based on available data and limited resources. This will require them to think strategically, weighing the costs and benefits of different options.
2. Data analytics: Users will need to gather, analyse, and interpret data to make informed decisions about environmental sustainability. This will require them to develop skills in data collection, statistical analysis, and data visualization.
3. Resource management: Users will need to manage resources effectively to make their country more environmentally sustainable. This will require them to develop skills in resource allocation, energy management, and waste reduction.
4. Collaboration and diplomacy: Users may need to collaborate with other countries, organizations, or stakeholders to address environmental issues that go beyond national borders. This will require them to develop skills in diplomacy, negotiation, and consensus-building.
5. Environmental awareness: The game aims to promote awareness of the importance of environmental sustainability and the role that individuals and governments can play in reducing carbon emissions and protecting the planet. This will help users to develop a deeper understanding of environmental issues and their impact on society.
6. Communication skills: Users will need to communicate their policies and practices effectively to stakeholders, including citizens, businesses, and other countries. This will require them to develop skills in public speaking, writing, and media relations. Overall, playing a carbon reduction game can help players develop a range of competencies that are valuable in both personal and professional settings.

### Number of participants:

One singular participant, score can later be compared with other competition/participants.

### Duration:

5 minutes for App setup,

25 minutes for active gameplay,

10 - 15 minutes for data analysis and possible comparison points for future improvements. Overall length: 45 Minutes

### Sources:

1. [National Geographic Map Maker](#) – Map Created and provided by NG Map Maker.
2. [Eurostat](#) – Comparison data provided by Eurostat

## Name: A healthy mindset - A Successful Workplace [Human resource relations and wellness management]

**Type:** Digital educational tool

**Format:** Video game

**Methods:** Game based learning through digital gamification, critical thinking, analysing, problem-solving, time management, organising, team management, communication.

### **Pedagogical objective:**

Our game has two modes: Office employee POV and Manager POV.

As an office employee, our player is presented with a list of tasks that need to be finished within a certain time period. While doing those tasks, the player has to maintain his stress levels, by doing stress management techniques.

As a manager, our player is tasked with observing and controlling the office environment. The player will have to handle the events that happen in the office accordingly. He is responsible for his employee's performance, motivation, attendance and well being. He will also have to invest in the office, with limited resources that were provided to him, to make sure the employee's needs and wants are met.

### **Inspiration from European Heritage (O1 good practices):**

[SYNTHESIS Center for research and education](#) - The leading organisation in Cyprus, in the fields of social entrepreneurship and social innovation. Pioneering organisation that initiates and implements projects of social impact, with a focus on social inclusion.

### **SYNOPSIS:**

Our game puts the player in two different kinds of roles (game modes). The first role is of an office employee working in SYNTHESIS, where the player will have to do a list of designated tasks, while trying to manage and regulate himself. The second role is of an office manager in SYNTHESIS, where the player will have to observe and manage the whole office environment. The aim of this approach is to convey the importance of viewing the office as a multifaceted environment, comprising of many individual components while also functioning as a cohesive unit.

The first game mode, where the player is an office employee, is presented as a set of short mini games. Each mini game has a list of activities/tasks that must be finished. Besides the task list, our player would also be presented with a time limit and a stress bar.

The stress bar is constantly rising. In the beginning, the rate at which it rises is slow. Spikes of stress will happen due to mistakes the player makes, or by the random events that will happen in the environment the player is in (the manager walks in as our player is working...). As the stress bar rises, our player will start doing self harming activities such as nail biting. The severity of these activities rise as the stress bar gets closer to 100%.

The player will counter the stress bar by doing stress management techniques - breathing exercises, playing with fidget toys, talking with a friend, taking a break...

Each mini-game would have a time by which all tasks should be finished. If the player has not finished his tasks within the time limit, the game would not stop, but it would rather increase the speed at

which the stress bar is rising. After all of the tasks have been finished, a new mini-game starts, and the time bar resets. The stress bar gets lowered by 20%. If the player finishes before the time limit, the player has the ability to relax and do stress relieving activities, until the time runs out and a new mini-game starts.

True game over is if the stress bar reaches 100%, and not if the player fails to finish a task, or finish before the time limit. The intention behind this is to teach our players that the most important thing in our lives is our health, and not some goal or deadline. We accept those mistakes and move on, while trying to stay healthy.

The second game mode, where the player is an office manager, is presented as a management game, where the player has to observe and control the office environment. The player will be presented with three bars - an atmosphere, productivity and resource bar.

The atmosphere bar serves as an indicator of the collective well-being of all employees. It encompasses mental and physical health, mood, motivation and general satisfaction of being in the office.

The productivity bar encompasses performance, attendance and timeliness of employees.

The resource bar shows how much resources are available for the player to invest in improving the office environment.

The values of the bars are interdependent. A decrease in atmosphere will lead to a corresponding decrease in performance and resources, while an increase in atmosphere will result in an increase in performance and productivity. In a special case, where the player uses force to coerce his employees to work harder, it is possible to increase performance and resources, even if the atmosphere bar is low.

The player will be faced with different kinds of employee states and events - an office quarrel between employees, high/low performance of employees, high/low motivation of employees, high/low attendance, great/bad performance, high/low motivation, good/bad employee requests.

The player can implement two different kinds of solutions to all of these states - positive or negative. Depending on the choice the player makes, the bar's values will increase or decrease.

The end goal is for the bars to reach 100%. An alternative good ending will happen if the player manages to keep all bars at 90% or above. If the atmosphere bar reaches 30% or lower, the player loses. It does not matter if the productivity and resource bars are above 70%, it will still be a game over. The intention behind this is to teach our players that high performance and profit can be attained without having an inhumane work environment and that we should take care of our employees, providing a healthy work environment.

#### Requirements:

- Design character sprites, environments, game screens and mini - games
- Make visual assets in Aseprite and other drawing programs (Canva, Photoshop, Procreate...)
- Make game soundtrack and sound effects in sfxr or other music making software; download free creative commons soundtracks from orangefreesounds or pixabay
- Write dialogue and events
- Make the game in Unity (using C#)

- Publish game on Steam

### Competences gained:

- Improved time - management and planning skills
- Improved ability to resolve conflict in an assertive and productive way
- Deepened empathy and understanding towards office employees and employees in general
- Improved problem solving, critical thinking, analysing and information gathering
- Heightened awareness of one's well being

### Number of participants:

This is a singleplayer game (with the possibility of making it a multiplayer game in the far future).

### Duration:

Both games don't have a set time of playing, they can be played as long as the player wishes to.

In the first game mode, Office employee POV, the goal is to avoid game over and survive as long as possible. Mini-games can last from 3 - 10 minutes.

In the second game mode, Office manager POV, the goal is to play and reach the goal as fast as possible.

### Sources:

Game inspiration: [Stardew Valley](#), [Papers Please](#)

Software: [Aseprite](#), [Photoshop](#), [Procreate](#), [Sfxr](#), [Unity](#)

Publishing: [Steam](#)

### Name: Umiri.me

**Type:** Digital Education tool and hybrid methodology

**Format:** Mobile application

**Methods:** game based learning through digital gamification, guided exercises and activities in nature reserves, national parks, ecological sites and rural communities.

### **Pedagogical objective:**

The player is given recommendations for “green” places he can visit in his country both alone and or with a group. At those places he is given different tasks and exercises he can do through which he can learn how to handle his own stress better, learn more about the nature surrounding him (both the flora and fauna and how the ecosystem works), how to better take care of that nature (recycling, planting, using sustainable sourced materials....) and similar concepts.

After each completed exercise or activity, the players profile is updated with the experience points in each skill the activity or exercise is relevant to.

### **Inspiration from European Heritage (O1 good practices):**



[Seljak.me](#) - The first internet platform that provides the fastest and most efficient way for farmers to sell their products, featuring the biggest offer of homemade products for customers. The portal has a blog with informational-educational articles that provide farmers with important information necessary to upgrade their knowledge and improve their production. The same team of five young people who created this platform also implemented a direct digitization project in farm production, installing devices such as calving sensors, GPS collars for cattle and bee sensors

[Održivo d.o.o.](#) - Održivo d.o.o. is a social enterprise that provides living environment solutions for clients based on permaculture, architecture, and urban design. Their work puts emphasis on the sustainability and efficiency of buildings, as well as the regenerative effect on the environment.

[Move On Wood Recycling](#) - Move On Wood Recycling is a social enterprise in Edinburgh that collects waste wood, sells quality timber and provides work experience, training and volunteering opportunities for disadvantaged persons, especially NEETs.

[Eko korijen](#) - The first platform for creating and publishing approachable, applicable, and understandable environmental content online and in-person, aimed at the wider audience in the Balkans. Responsibilities include environmental education, digital content creation (courses, eworkbooks, social media posts), green event organization, etc.

#### **SYNOPSIS:**

Welcome to our stress management game, where you can embrace your environment and surroundings to reduce stress. When you first enter the game, you will be presented with two options: "Start" and "Notes". This is the starting point of the game. Once you click on "Start", you will be prompted to create a profile that includes your location.

Based on your profile, a map of Montenegro will appear, with your city highlighted. Clicking on your city will bring up a new map that shows several highlighted pinpoints. These pinpoints represent places where you can go and have a stress-reducing experience.

The map will show the walkable distance, distance by bike, and distance by car to each location from your current position. When you arrive at your destination, you will receive information about the place and have several options to choose from. For example, you can choose to meditate, exercise, breathe, or learn more about the place's ecology and eco-friendliness.

All locations are chosen for their eco-friendliness, such as green spaces and eco-friendly businesses. If you choose meditation or breathing exercises, a separate panel will appear with audio and visual guidance to improve your experience. If you choose exercises related to ecology, you will have a panel of specific exercises that you can do, such as making art out of broken wood or taking photographs of certain areas. Throughout these exercises you will be given different mini-games and quizzes that will help you learn more about nature and ecology.

#### Some mini-game examples:

Eco Trivia - A game where you answer questions about ecology, conservation, and sustainability.

Eco Explorer - A game where you explore different ecosystems and learn about the plants and animals that live there.

Eco Puzzle - A game where you solve puzzles related to environmental issues such as recycling, water conservation, and renewable energy.

Birdwatcher - A game where you identify and learn about different bird species in your local area.

Environmental Memory - A game where you match pairs of cards featuring environmental themes such as endangered animals, renewable energy sources, and conservation practices.

Outdoor cook – A game where you learn which plants are edible and learn some simple recipes you can cook while outdoors

If you visit an eco-friendly place like national parks or family run local businesses, you will receive instructions for a tour of the area with information about the reasons why the place is eco-friendly. You can also take notes to describe your experience and share it on social media.

Once you have completed the tour and exercise, you will receive statistics about your stress levels before and after visiting the place. You will also be asked to fill out fields about your knowledge before visiting the location and general statistics about the improvements you gained through the exercises.

Additionally, you will have a place for notes about the place you visited, giving you a memory in a calendar for each location you visit. With our stress management app, you can reduce your stress levels while learning about eco-friendliness and embracing your surroundings.

#### Requirements:

- Two developers experienced in mobile app/game development
- Access to a development platform, such as Android Studio or Unity
- A server to store and manage user data
- Access to mapping APIs, such as Google Maps API
- Access to social media APIs, such as Facebook or Twitter
- Research - The content team should conduct extensive research on stress management techniques, eco-friendly locations, and related topics. This research will inform the content strategy and ensure that the information presented in the app is accurate and helpful.

#### Competences gained:

- The importance of eco-friendliness and how to identify eco-friendly businesses and green spaces.
- Stress management techniques, including meditation, breathing exercises, and outdoor activities, that they can use in their daily lives.
- How to incorporate eco-friendliness and stress management techniques into their daily routines.
- About the local history, culture, and ecology of their area.
- About the benefits of spending time in nature, and how to do so in an environmentally friendly way.
- And how to be more fulfilled by the environment in which they lived in.

#### Number of participants:

You can have a solo experience or you can do tasks and exercises in groups.

#### Duration:

Exercises and activities can vary in length from 5 minutes to multiple hours.

## Sources:

**The American Institute of Stress**: This website offers a collection of relaxation techniques and breathing exercises to help reduce stress and anxiety. They also offer articles and resources on stress management.

**Yoga Journal**: This website offers a variety of yoga poses and breathing exercises to help reduce stress and promote relaxation. They also offer articles and resources on yoga and mindfulness.

**The Calm Clinic**: This website offers a range of anxiety-reducing techniques, including breathing exercises, mindfulness practices, and relaxation techniques. They also offer articles and resources on anxiety and stress management.

**Mindful.org**: This website offers a variety of mindfulness practices and exercises, including breathing exercises and guided meditations, to help reduce stress and promote relaxation. They also offer articles and resources on mindfulness and meditation.

**"Crnogorsko društvo ekologa" (Montenegrin Ecologists Society)**: offers efficient and effective models in addressing challenges related to nature conservation and environmental protection, through their activities."

## Name: Code Red [Crisis management]

**Type:** Digital educational game

**Format:** RPG Maker Game Format

**Methods:** Simulation-based learning through digital gamification, storytelling, analytical thinking and problem solving.

**Pedagogical objective:** The pedagogical objective of a game that teaches players how to act in emergency situations in an office is to test and improve their knowledge, skills, and attitudes related to emergency preparedness and response. It's mostly aimed for company employees, so that, based on results, employers can decide whether they need to organize official training in these fields.

## **Inspiration from European Heritage (O1 good practices):**

**Laboratorio Cartiera** – Social enterprise in Italy that offers concrete responses to the challenges of our time: the creation of new employment opportunities, the economic integration of migrants and asylum seekers, the rediscovery of qualified artisanship, the repopulation of former industrial areas, the recovery of primary materials otherwise destined for disposal, and a production which has a minimal environmental impact.

**The International Association of Emergency Managers (IAEM)** - IAEM is a global organization that promotes the principles of emergency management and provides a platform for professionals to exchange ideas and best practices. They offer a range of training and educational programs, including courses on disaster response and recovery.

**The European Environment Agency (EEA)** - EEA is an agency of the European Union that provides information and data on the environment in Europe. They offer a range of educational resources and tools, including information on natural hazards and disaster risk management.

[The Red Cross EU Office](#) is a membership office representing the 27 National Red Cross Societies in the EU, the Norwegian Red Cross, the Icelandic Red Cross and the International Federation of Red Cross and Red Crescent Societies (IFRC). The Red Cross EU Office has developed a new publication, Red Alert, showcasing good practices, challenges and lessons learned by National Red Cross Societies in Europe and the IFRC on reducing and managing disaster risks across the region.

**SYNOPSIS:**

Code Red is an innovative and engaging video game designed to teach players the basics of first aid and emergency response in the event of an earthquake or fire in the office of the Laboratorio Cartiera. The game is designed to simulate real-life scenarios in a fun and interactive way that will help players learn how to act quickly and effectively in high-stress situations.

The game is divided into two main parts: the first part consists of multiple levels, each with multiple-choice questions that players must answer based on the given scenario. After choosing an answer, a pop-up window will explain why that answer is correct or incorrect and what best practices are in a given situation. This way, players can learn from their mistakes and make more informed decisions in the future. This part of the game is considered as an educational part, while the second part is competitive and sort of a test.

Educational part will cover crisis in case of fire, earthquake and basic first aid training:

First aid:	Fire:	Earthquake:
<ul style="list-style-type: none"> <li>• choking</li> <li>• cuts</li> <li>• CPR</li> <li>• seizure</li> <li>• fracture</li> </ul>	<ul style="list-style-type: none"> <li>• composure</li> <li>• evacuation</li> <li>• types of fire and how to extinguish</li> <li>• fire extinguishers</li> <li>• burns</li> </ul>	<ul style="list-style-type: none"> <li>• first steps</li> <li>• choosing appropriate response</li> <li>• things to avoid</li> <li>• what to do in case you're trapped</li> </ul>

The second part of the game introduces players to more complex scenarios, where they must put their knowledge to the test in a high-pressure situation with a time limit. This final challenge includes all learned matter, combined in bigger problems, and it will give players the opportunity to apply what they have learned throughout the game and see how well they can handle a real-life emergency.

Overall, Code Red is an excellent video game that provides players with the tools they need to respond quickly and effectively in case of an emergency. By playing the game, players will learn valuable skills and knowledge that could one day save someone's life.

**Requirements:**

- **Research:** The game should have well-researched and accurate educational content on first aid and natural disaster preparedness that is appropriate for the target audience. The content should be organized into modules or levels that progressively build upon each other, allowing players to gradually learn and practice new skills.

- Planning: Creating a gameplay that incorporates the learning objectives and the subject matter. Considering what types of scenarios and challenges will be included in the game and how they will be presented to the player.
- Implementation: Creating simple, interactive and easy user interface that reinforces learning. Creating a full game layout using RPG Maker.

#### Competences gained:

- Players will learn about different types of emergencies that can occur in an office environment, as well as the appropriate procedures for responding to them. This includes understanding the roles and responsibilities of each individual, knowing how to evacuate the building safely, and understanding how to use emergency equipment such as fire extinguishers.
- Players will be able to apply their knowledge to real-life situations by practicing decision-making and problem-solving skills. This includes being able to assess the situation quickly and make decisions under pressure.
- Players will develop a positive attitude towards emergency preparedness and response, recognizing the importance of being proactive and prepared in case of an emergency. They should also understand the consequences of not following proper emergency procedures and the potential impact on themselves and others.
- Players will learn about different types of injuries and medical emergencies, as well as the appropriate first aid procedures for treating them. This includes understanding how to assess the situation, recognize symptoms, and provide the appropriate care.

**Number of participants:** The game is designed for one player.

**Duration:** Final version with official full training has a planned duration of one hour.

#### Sources:

- Basic first aid procedures: [Verywell Health - Know More. Feel Better.](https://www.verywellhealth.com/know-more-feel-better/)
- Fire emergency response: <https://fireblockplans.com/>
- Earthquake emergency response: <https://safeworkmethodofstatement.com/>
- Graphic design: <https://www.canva.com>
- Graphic design: <https://www.gimp.org/>

Program for development of role-playing video games: <https://www.rpgmakerweb.com/>

#### Name: Save the Green zone

**Type:** Digital educational tool – digital educational escape room

**Format:** PowerPoint Show

**Methods:** game based learning through digital gamification, educational escape room, brainstorming, information gathering, critical thinking, analysing, problem-solving, group building (for cooperative gameplay only)

**Pedagogical objective:**

The player is given various company documents that he/she should investigate and understand to solve the game's final riddle, which is to help stop ecological catastrophe. The main goal is for them to exercise their entrepreneurial skills while learning about eco-social entrepreneurship operations.

### **Inspiration from European Heritage (O1 good practices):**

[Humana Nova](#) (Social enterprise) works in the scope of 3 areas: environment, social environment and economy. They employ persons with disabilities and other socially excluded persons. The company produces clothing and textiles through reusing, repurposing, recycling and other sustainable techniques.

### **SYNOPSIS:**

Humana Nova that runs as a social enterprise is situated in one of the biggest EU's green zones. One day the staff discovers a secret room at the facility during a lunch break. The room is full of posters, writings, notes, empty snack boxes and similar. Suddenly someone locks them in, and a clock is heard ticking. Pretty soon they realize somebody has infiltrated the organization and tinkered with production facilities, programming the recycling machine to explode and release devastating gasses in the atmosphere. If the player does not resolve the riddles a recycling machine will cause a huge environmental catastrophe and drastically increase the carbon footprint of the green zone area. A timer is set for 1 hour!

They must research the room and find the code that deactivates the programming.

There is writing on the wall "the code is here" and the group has to search the room and find the 4-digit code that deactivates the programme.

During their investigation, the players encounter 4 puzzles designed as locked boxes, each of them containing a number that when put in the right order makes up a code to deactivate the programme. They find various company documents in terms of clues, such as SWOT analysis, CVs of employees, motivational letters, and the story about a person responsible for their captivation.

During the game, participants will have to deal with:

- Rearranging SWOT analysis of Humana Nova as an eco-social enterprise
- Sustainable development goals aims and main aspects
- Examples of CVs of social enterprise staff

### **Requirements:**

- Create an interactive presentation consisting of 4 puzzles according to the synopsis and save it as PowerPoint Show format
- Create short instructions for the players according to the storyline of the game
- Start the presentation on the computer or a tablet
- Discuss the gameplay with the participants after they finish the game

### **Competences gained:**

- A deeper understanding of eco-social entrepreneurship
- Understand the basic elements of a SWOT analysis specific to eco-social enterprises

- Get inspired by the real eco-social enterprise Humana Nova from Croatia
- Improvement of several entrepreneurial skills through gameplay: brainstorming, information gathering, critical thinking, analysing, problem-solving, and group building (if played cooperatively)

### Number of participants:

The game can be played individually or in pairs/teams. For efficiency, it is recommended implementing in groups of no more than 16 persons (divided in pairs or teams)

### Duration:

5 minutes for preparation

15-30 minutes for playing

10 minutes for discussion

Total duration: 30-45 minutes

### Sources:

ER scenario inspiration: <https://er-se.eu/download/18-synopsis-to-inspire-you-%e2%80%8b/>

European eco-social enterprises heritage: <https://humananova.org/>

Swot analysis materials: <https://www.canva.com/graphs/swot-analysis/>

Europass CV examples: <https://europa.eu/europass/en/create-europass-cv>

### Name: Strategize

**Type:** Digital educational tool – online game

**Format:** GDevelop game format (json)

**Methods:** game based learning through digital gamification, educational puzzle, brainstorming, information gathering, critical thinking, analysing, problem-solving

### **Pedagogical objective:**

The player is given basic information about three different social enterprises and simple instructions on brainstorming a SWOT analysis. Player should carefully examine the materials in order to identify which aspects of the businesses belong to their strengths, weaknesses, opportunities and threats.

The main goal is for them to understand strategic planning method in entrepreneurship and to be able to strategically plan their own business ventures.

### **Inspiration from European Heritage (O1 good practices):**

**Sfera Visia** (Croatia): A social enterprise developed as a centre of ideas that recognizes the virtues and advantages of all the team members in order to create better conditions for the employment of blind and visually impaired persons. The main product of the company is an all-natural liquid soap made by their disadvantaged staff.

**Brigadadomar** (Portugal): The association's main purpose is to decontaminate the coastline. They develop and implement actions and events aimed at protecting biodiversity, activities related to recycling and awareness campaigns, in order to alert society in general to the scourge that is marine litter, encouraging citizens to join individually, or through their own organisation.

**Various Coop** (South Korea): A Cooperative that uses useless natural tree parts left over from wood industry to produce toys for children.

**SYNOPSIS:**

Game consists of 3 parts.

First part is the explanatory scene that explains the basics of SWOT analysis and main aim of the game. This scene can also be reached at any point of the game as a tip for the player.

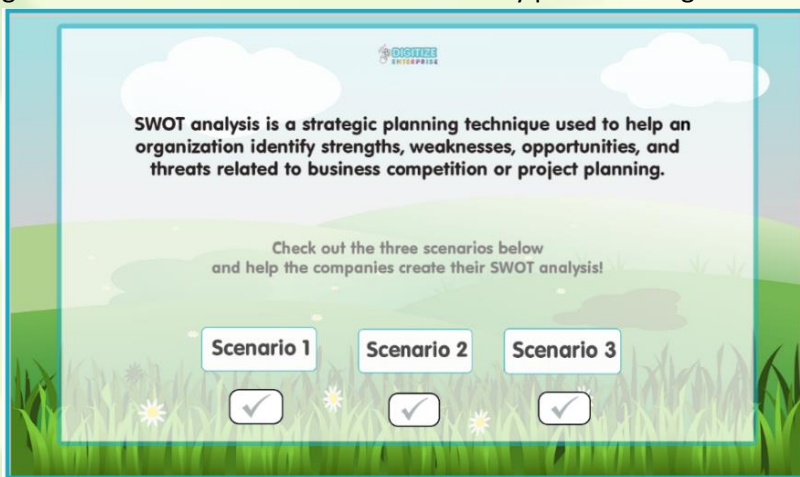


Image source: <http://www.digitizeenterprise.org/swot-analysis/>

The second part of the game consists of 3 profiles of real eco-social companies: Sfera Visia from Croatia, Brigadadomar from Portugal and Various Coop from South Korea.

Example of one profile:

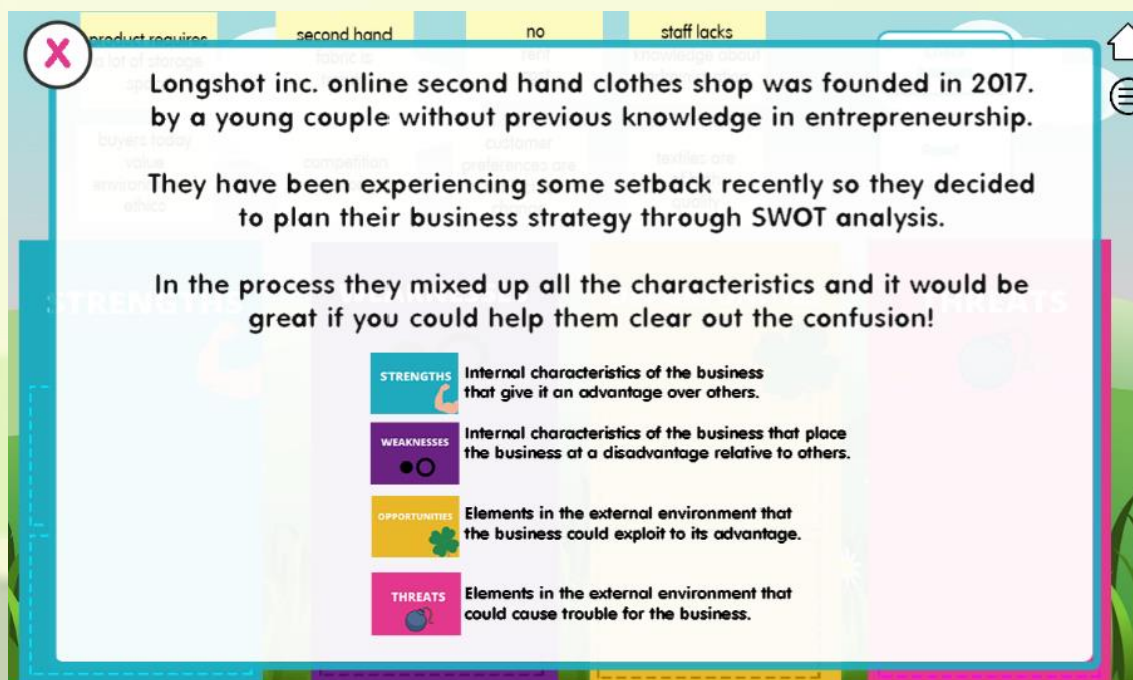




Image source: <http://www.digitizeenterprise.org/swot-analysis/>

The third part of the game consists of various facts about each specific company that should be rearranged in order to develop their SWOT analysis.

Example of the puzzle:



Image source: <http://www.digitizeenterprise.org/swot-analysis/>

Player should arrange the facts in the corresponding categories of SWOT. There are indefinite number of tries until the player arranges them in the correct order. Once the player finishes all three SWOT analyses the game is considered won!

During the game, participants will have to deal with:

- Rearranging SWOT analysis elements of three real-life eco-social enterprises
- Understand the difference between internal and external factors necessary for developing a strategy for a business
- Examples of real eco-social enterprises in Europe and Asia.

**Requirements:**

- Create in Canva or any other designing programme one visual scene that explains the basics of strategic planning, specifically internal and external factors and definitions of strengths, weaknesses, opportunities and threats in entrepreneurial planning.
- Create three separate scenes explaining the profiles of the three companies and purpose of the gameplay
  - Example: *Sfera visia is a social enterprise developed as a centre of ideas that recognizes the virtues and advantages of all the team members in order to create*

*better conditions for the employment of blind and visually impaired persons. The main product of the company is an all-natural liquid soap made by disadvantaged staff. Help Sfera Visia organize its strategic planning elements in order to increase the chances of their business success.*

- Investigate all three companies and create 8 short facts related to each of the companies, 2 for each SWOT category. Specifically, you should come up with 2 internal strengths, 2 internal weaknesses, 2 external opportunities and 2 external threats.
- Develop each of the facts as a separate image.
- Download [GDevelop](#) Open source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.

#### **Competences gained:**

- A deeper understanding of eco-social entrepreneurship
- Understand the basic elements of a SWOT analysis specific for eco-social enterprises
- Get inspired by the real eco-social enterprises
- Understand the difference between internal and external factors necessary for developing a strategy for a business
- Improvement of several entrepreneurial skills through gameplay: brainstorming, information gathering, critical thinking, analysing, problem-solving

#### **Number of participants:**

Game can be played individually or in pairs/teams.

#### **Duration:**

5 minutes for preparation

30-45 minutes for playing

10 minutes for discussion (optional)

Total duration: 50-60 minutes

#### **Sources:**

Game type and design inspiration: <http://www.digitizeenterprise.org/swot-analysis/>

European eco-social enterprises heritage:

<https://sferavisia.hr/>

<http://www.brigadadomar.org/>

<https://www.variouscoop.com/>

Swot analysis materials: <https://www.canva.com/graphs/swot-analysis/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

GDevelop software & tutorials for use: <https://gdevelop.io/>

**Name: Business dates**

**Type:** Digital Educational resource & activity

**Format:** infographics for a storytelling activity based on business networking (blended learning)

**Methods:** digital storytelling, role-play education, role model education, networking, information gathering, critical thinking, analysing, problem-solving, group building

**Pedagogical objective:**

A team of 6 players are given 6 different company profiles in a format of infographics based on real eco-social companies, they are given instructions to role play in a networking activity in order to understand the main rules of successful networking in business.

**Inspiration from European Heritage (O1 good practices):**

[GREENS d.o.o. \(B&H\)](#) - Company for the production of micro vegetables, herbs and edible flowers.

[Seljak.me](#) (MNE) - The first internet platform that provides the fastest and most efficient way for farmers to sell their products, featuring the biggest offer of homemade products for customers.

[ROUM \(CRO\)](#) is a discarded objects rescue centre, where Roma and artists come together to make interior design pieces out of discarded objects.

[NewPen \(SRB\)](#)- Produces graphite pencils and crayons made of recycled newsprint, aimed primarily at protecting the environment in many ways.

[Paysans-artisans \(BE\)](#) – Cooperative’s economic activity is focused on the marketing of artisanal and local food products.

[C.I.P. Citizens in Power \(CY\)](#) – A social enterprise focusing on education implements an international project that supports CCS professionals and artists with developing the necessary digital and entrepreneurial skills that will allow them to ensure their sustainability.

**SYNOPSIS:**

Step 1: The facilitator explains the main rules of networking in business by showing a video on youtube. What it is. Why it is used. What to look for in building networks (basic business area, needs, joint goals, similar values, practicalities of business cooperation a.k.a if it makes practical sense for 2 companies to work together).

Step 2: Players are given 6 QR codes. One code for each player. They are instructed to scan their code in order to retrieve an infographics containing a profile of the company they will be presenting. Each player is given 15 minutes to study carefully the infographic in order to be able to role-play as a member of this company.

Step 3: Players are seated in a room and instructed how to network through a speed dating method. 3 persons are sitting and 3 persons are standing. One by one they have to visit each of the other persons and initiate a short (3 minute) meeting where they should present each other’s main work, future goals and values. The aim is that each player gets to communicate with every other player for 3 minutes.

Step 4: Once all players communicated to each other they are given a google form to grade the company representatives that they would like to establish a business relationship.

Step 5: The facilitator analyses their answers and they all meet together in the plenary to discuss their choices.

The game is set specifically so that each profile corresponds to the values, needs and goals of only one other company out of 6. In this way there is only one perfect business match for each participant, they just have to read carefully the infographic, listen to the storytelling of other participants and through creative thinking realize their true business match.

The best matches are:

Greens d.o.o. -> Seljak.me (one produces organic foods in Bosnia and the other offers an internet platform solution for marketing and selling such products in Montenegro. These companies could initiate a joint alliance in order for Greens to expand to neighbouring country while Seljak.me can get an additional supplier and also expand regionally)

Roum -> NeWPen (One uses discarded objects to create new value from them but mostly for furniture and other design pieces, the other found creates pencils and crayons made of recycled newsprint. Companies can join forces and contribute to each other's production, marketing and overall sales reach.)

Payasans-artisans -> CIP Citizens in Power (One is focused on marketing artisanal products and other creates learning programmes and educational resources for artists in order to help them increase their entrepreneurial skills to ensure sustainability in the artistic sector. They can build an alliance in order to work together and create a comprehensive aid strategy for the purpose of benefiting the arts sector both through education and marketing.

During the game, participants will have to deal with:

- Understanding the values, needs and future goals as main business elements
- Understanding the basics of networking and gaining networking skills
- Making business decisions based on storytelling and role-play activity

#### Requirements:

- Create a short presentation or a video that explains the main rules of business networking
- Create 6 different infographics for each European Heritage eco-enterprises
- Generate QR codes for each infographics
- Create a google form for players to evaluate potential business matches

#### Competences gained:

- A deeper understanding of the purpose of networking
- Knowledge about main areas of focus when it comes to building networks in business (values, needs, goals)
- Understanding the speed networking concept and its usability in business
- Learn about and get inspired by the real eco-social enterprises from Croatia, Bosnia, Serbia, Montenegro, Belgium and Cyprus.

- Improvement of several entrepreneurial skills through gameplay: creativity, information gathering, memory, critical thinking, analysing, problem-solving, networking and group building

### Number of participants:

The game should be played with 6 participants total. One participant per infographic.

It is also possible to increase the number of players to 12 or 24 so that pairs or groups represent one infographic each.

### Duration:

10 minutes for preparation

40 minutes for playing

10 minutes for evaluation

15 minutes for results and discussion

Total duration: 60-75 minutes

### Sources:

Networking in business as educational activity: <http://www.digitizeenterprise.org/toolkit/m7-building-networks/>

Business Speed dating methodology: <https://advancednetworking.me/2015/05/14/business-speed-dating/>

European eco-social enterprises heritage:

<https://greens.ba/>

<https://roumupdesign.com/>

<https://roumupdesign.com/>

<http://www.newpen.rs/>

<https://paysans-artisans.be/>

<https://citizensinpower.org/activity/digiport-digital-pop-up-shop-platform-for-ccs-professionals-and-artists/>

Free infographic creator: <https://www.canva.com/infographics/templates/>

Free QR code generator: <https://www.qr-code-generator.com/>

Evaluation questionnaire example: <http://www.digitizeenterprise.org/toolkit/m7-building-networks/>  
(see step 7.4)

Evaluation questionnaire tool: <https://docs.google.com/forms/>

## Name: “Free Sea”

**Type:** Digital educational tool – online games

**Format:** On-line games and collaboration in teams

**Methods:** game-based learning through digital gamification, educational puzzle, information gathering, critical thinking, analysing, pitching

### **Pedagogical objective:**

The players are provided with info about sea pollution, overfishing and problems for local communities connected to that.

The main goal is to understand how eco-social enterprises can help with saving local ecosystems in coastal areas and keep the sea clean.

### **Inspiration from O1 good practices:**

[AKTI Project and Research Center](#) creators of an extensive network of collaborators and volunteers for raising environmental awareness and promoting sustainable development.

[Enaleia](#) is a non-profit social enterprise tackling two directly related problems for the marine environment: reduction of fish stocks and plastic sea pollution.

[Brigadadomar](#) develops and implements actions and events aimed at protecting biodiversity, activities related to recycling and awareness campaigns, in order to alert society in general to the scourge that is marine litter, encouraging citizens to join individually, or through their own organisation.

### **SYNOPSIS:**

The game consists of 3 parts:

**1)** The first part explains the importance of maritime ecosystem perseverance and the main aim of the game. Players search online and try to find connections with UN Agenda 2030.

**2)** The second part of the game consists of 3 profiles of real eco-social companies that relate to maritime engagement:

- AKTI Project and Research Center (Cyprus)
- Enaleia: (Greece)
- Brigadadomar: (Portugal)

**3)** The third part of the game consists of various games

- **Jigsaw puzzles** (5 images connected to maritime) <https://puzel.org/en/features/create-jigsaw-puzzle>
  - Each puzzle contains the keyword for problem solving. All 5 words (*The Plastic Bank Recycling Corporation*) together are the clue to finding 4<sup>th</sup> example of good practice which is **Plastic Bank (Canada)** <https://plasticbank.com>

- **Google form quiz** <https://docs.google.com/forms>
  - Players have 5 minutes to go through Plastic Bank website and they need to answer 10 questions regarding ESE and 4<sup>th</sup> example of good practice
  - The winner of the game is a team that solves puzzles first and has the most correct answers to questions (points are awarded for best times and number of correct answers)
  - Teams present 4<sup>th</sup> example of good practice

During the game, participants will have to deal with:

- Searching for blue and green ESE information and connected UN Agenda 2030 goals
- The team works in finding solutions for games
- Examples of real eco-social enterprises in Europe

#### Requirements:

- Create in Canva (or similar) programme 5 visual images for jigsaw puzzles
- Make jigsaw puzzles on Puzzle.org
- In Google Form write a questionnaire with 10 questions about ESE connected to the maritime ecosystem and about 4<sup>th</sup> example of good practice

#### Competences gained:

- A better understanding of eco-social entrepreneurship through the examples
- Understanding the importance maritime ecosystem and how can ESE contribute to its perseverance
- Get inspired by the real eco-social enterprises
- Improvement of several entrepreneurial skills through gameplay: information gathering, team working, critical thinking, analysing, brainstorming, presentation skills

#### Number of participants:

A game can be played individually or in pairs/teams.

#### Duration:

- 5 minutes for preparation
- 30-45 minutes for playing and pitching
- 10 minutes for discussion
- Total duration: 50-60 minutes

#### Sources:

Social Enterprises examples:

- AKTI Project and Research Center <http://www.akti.org.cy/marine-litter-database/>
- Enaleia: [www.enaleia.com](http://www.enaleia.com)
- Brigadadomar: <http://www.brigadadomar.org>

Game-based educational tool:

- Jigsaw puzzles <https://puzel.org/en/features/create-jigsaw-puzzle>
- Google form <https://docs.google.com/forms>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

### Name: “The Rs”

**Type:** Digital educational tool – online games and pitching

**Format:** On-line games and collaboration in teams

**Methods:** game-based learning through digital gamification, educational puzzle, information gathering, critical thinking, analysing, pitching

**Pedagogical objective:**

The players are provided with basic information about Rs and instructions on finding different Rs on the internet. The task for players is to find different Rs and get basic ideas about each R they find and why are they important in eco sustainability in local systems.

The main goal is to understand how eco-social enterprises can implement some of the Rs (Rethink, Refuse, Reduce, Repair, Reuse, Recycle, Rot, etc.) in their work and the importance of Rs.

**Inspiration from O1 good practices:**

[Humana nova](#) works in the scope of 3 areas: environment, social environment and economy. They employ persons with disabilities and other socially excluded persons. The company produces clothing and textiles through reusing, repurposing, recycling and other sustainable techniques.

[NewPen](#) is a social enterprise producing graphite pencils and crayons made of recycled newsprint, aiming primarily at protecting the environment in many ways.

[Move On Wood Recycling](#) is a social enterprise in Edinburgh that collects waste wood, sells quality timber and provides work experience, training and volunteering opportunities for disadvantaged persons, especially NEETs.

**SYNOPSIS:**

The game consists of 4 parts:



1) The first part explains different Rs and main the aim of the game. Players search online for the Rs and get an idea of what are they about

2) The second part of the game consists of 3 profiles of real eco-social companies and what Rs are they implementing in their enterprises:

- Humana nova (Croatia)
- NewPen (Serbia)
- Move On Wood Recycling (Scotland)

3) The third part of the game consists of various games:

- **Memory game** (connecting images and Rs words)  
<https://puzzel.org/en/features/create-memory>
  - In memory game players connect images with words (different Rs). Idea is to make at least 7Rs pairs. Once all pairs are matched game is finished. The team with the most pairs wins.
- **Word search (Rs)** <https://puzzlemaker.discoveryeducation.com/word-search>
  - In the word search game players need to find 7R words and the winner is the team with the quickest time.
- **Mirror image** and finding Rs in text <https://www.resizepixel.com/mirror-image/>
  - In the mirror image game, there will be a short story about the importance of Rs and players need to find all R words in the text. There will be also 3 questions regarding text. The winner is a team that finds all Rs and provides the right answers to 3 questions in the shortest time.

4) The fourth part is **pitching**:

- “Our R is the best R!” – teams choose 1 R and explain its benefits of it
- Provide basic pitch instructions

During the game, participants will have to deal with:

- Searching for Rs and understanding why each R is important
- The team works in finding solutions for games
- Examples of real eco-social enterprises in Europe
- Pitching and presentation skills

#### Requirements:

- Create in Canva (or similar) programme visual images for every 7 Rs that you will use in the memory game, then make a memory game in Puzzle.org
- In puzzlemaker.discoveryeducation.com make a word search game that consists of 7R words

- Write a short text about Rs and put it in a mirror image (resizepixel.com) and write 3 questions regarding the text
- Write short instructions about pitching Rs (for example each team has 45 seconds to pitch their R).

#### Competences gained:

- A better understanding of eco-social entrepreneurship through the examples
- Understanding the importance of Rs
- Get inspired by the real eco-social enterprises
- Improvement of several entrepreneurial skills through gameplay: information gathering, team working, critical thinking, analysing, brainstorming, pitching

#### Number of participants:

A game can be played individually or in pairs/teams.

#### Duration:

- 5 minutes for preparation
- 30-45 minutes for playing and pitching
- 10 minutes for discussion
- Total duration: 50-60 minutes

#### Sources:

Social Enterprises examples:

- Humana nova: <https://humananova.org/>
- NewPen: [www.newpen.rs](http://www.newpen.rs)
- Move On Wood Recycling: <https://moveonwood.org.uk/>

Game-based educational tool:

- Memory game <https://puzel.org/en/features/create-memory>
- Word search (Rs) <https://puzzlemaker.discoveryeducation.com/word-search>
- Mirror image and finding Rs in text <https://www.resizepixel.com/mirror-image>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

Pitch videos: [https://www.ted.com/talks/one\\_minute\\_idea\\_pitchers\\_one\\_minute\\_idea\\_pitches](https://www.ted.com/talks/one_minute_idea_pitchers_one_minute_idea_pitches)

## **Name: Digital labyrinth**

**Type:** Digital educational tool – digital educational labyrinth (online game)

**Format:** PowerPoint Show

**Methods:** game-based learning through digital gamification, educational labyrinth, information gathering, critical thinking, analysing and problem-solving

### **Pedagogical objective:**

In order to get out of the maze, the player needs to answer correctly the questions about eco-social entrepreneurship, through which he will gain knowledge in that field.

### **Inspiration from European Heritage (O1 good practices):**

[C.I.P. Citizens In Power](#) is an independent non-profit, non-governmental organization. CIP constitutes one of the leading organizations in Cyprus in the fields of global education, social innovation, entrepreneurship, STEM and sustainable growth.

### **SYNOPSIS:**

This game is intended for beginners, who do not have basic knowledge about social entrepreneurship and for those who want to start their own social enterprise.

The player controls a character who is in a maze. Each time a question will be asked, and the player can see three different roads with three different answers (The number of answers doesn't need to be constant). The player must answer correctly, in order to take the right road. The task of the character is to find the way out of the labyrinth. The character has 3 lives, so if he chooses a wrong answer, he will lose one life and have a chance to choose the correct answer again. When a character loses all 3 lives, the game ends.

### **Requirements:**

- Create an interactive presentation consisting of 4 puzzles according to the synopsis and save it as PowerPoint Show format
- Create short instructions for the players according to the storyline of the game
- Start the presentation on the computer or a tablet
- Discuss the game play with the participants after they finish the game

### **Competences gained:**

- A deeper understanding of eco-social entrepreneurship
- Improvement of several entrepreneurial skills through game play: information gathering, critical thinking, analysing, problem-solving

### **Number of participants:**

The game can be played individually.

### **Duration:**

5 minutes for preparation

10-30 minutes for playing

10 minutes for discussion

Total duration: 25-45 minutes

**Sources:**

ER scenario inspiration: <https://er-se.eu/download/18-synopsis-to-inspire-you-%e2%80%8b/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

**Name: Starting a business**

**Type:** Digital educational tool – online game

**Format:** GDevelop game format (json)

**Methods:** game-based learning through digital gamification, information gathering, role-play education, role model education, critical thinking, analysing and problem-solving

**Pedagogical objective:**

The player gets acquainted with the basic things that await him when he establishes a business and for each step, he gets the opportunity to choose an environmentally friendly option. After each choice, he receives an explanation of whether the choice is right or not, which helps him learn a lot about eco-social entrepreneurship on a concrete example.

**Inspiration from European Heritage (O1 good practices):**

[Algramo](#) aims to empower everyone to radically change consumption habits and secure a thriving future for current and next generations. It's the most innovative company of 2015 and 2020 in Latin America.

**SYNOPSIS:**

This game is intended for beginners, who do not have basic knowledge about social entrepreneurship and for those who want to start their own social enterprise.

The player controls a character that is in the city and walks through a street full of different shops. His task is to establish his business in one of these stores. When the character chooses what his business will be, he should choose the best possible options. He will be given 3 options for each situation. When he successfully chooses an option, he will receive information on how it can be good for his eco-business and how that decision affects society.

**Requirements:**

- Create short instructions for the players according to the storyline of the game
- Prepare questions and answers for the game
- Download [GDevelop](#) Open source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.

- Discuss the gameplay with the participants after they finish the game

### Competences gained:

- A deeper understanding of eco-social entrepreneurship
- Improvement of several entrepreneurial skills through gameplay: information gathering, critical thinking, analysing, problem-solving

### Number of participants:

The game can be played individually.

### Duration:

5 minutes for preparation

10-30 minutes for playing

10 minutes for discussion

Total duration: 25-45 minutes

### Sources:

Digitize enterprise: <http://www.digitizeenterprise.org/toolkit/m7-building-networks/>

GDevelop software & tutorials for use: <https://gdevelop.io/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

### Name: Eco building

**Type:** Digital educational tool – online game

**Format:** GDevelop game format (json)

**Methods:** game-based learning through digital gamification, brainstorming, analysing and problem-solving

### **Pedagogical objective:**

Through two stages - simulations of the production of green blocks and the construction of eco-friendly buildings, the player will get to know eco-construction in the right way.

### **Inspiration from European Heritage (O1 good practices):**

[Boodla](#) works innovatively to care for and develop cities' green values. They started with urban farming as a tool to create security in neighborhoods and spread knowledge about biodiversity, cultivation and sustainable food systems, and now they work broadly with many new ideas on how to make available and activate green spaces in the city.

[ECODOME](#) wants to collaborate in the transformation of the planet. Together with the University of Granada, they have developed a truly revolutionary bioconstruction system with earth.

## SYNOPSIS:

The first stage of the game should simulate the process of producing green blocks and provide useful information about the environmental benefits of using them. The production of the block should be realistic and described through the game. The next stage in the game is the use of those blocks. The amount of blocks that is produced can be now used for building. More precisely, a limited number of buildings can be built with a certain number of blocks, which would aim for a more realistic construction process. The goal is to conquer the polluted city by building eco-friendly constructions. The game aims to build an entire ECO city. Through further construction in the game, space is opened to present some more models and parts of green construction.

## Requirements:

- Create short instructions for the players according to the storyline of the game.
- Download [GDevelop](#) Open source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.
- Discuss the gameplay with the participants after they finish the game.

## Competences gained:

- A deeper understanding of eco-social entrepreneurship
- Acquired knowledge in the field of green construction
- Improvement of several entrepreneurial skills through gameplay: information gathering, critical thinking, analysing, problem-solving

## Number of participants:

The game can be played individually.

## Duration:

5 minutes for preparation

30-60 minutes for playing

10 minutes for discussion

Total duration: 45-75 minutes

## Sources:

GDevelop software & tutorials for use: <https://gdevelop.io/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

### Name: PR quiz

**Type:** Digital educational tool – Quiz

**Format:** On-line game, Google form

**Methods:** game-based learning through the quiz, information gathering and analysing.

### **Pedagogical objective:**

Considering that many social enterprises have weak marketing and not many people know about them, the main goal of the quiz is for such enterprises to get advice on how to get the word out about them. The quiz would help eco-social enterprises to develop contact with their consumers through marketing and PR knowledge.

### **Inspiration from European Heritage (O1 good practices):**

Vinted - is a Lithuanian online marketplace for buying, selling and exchanging new or secondhand items, mainly clothing and accessories - <https://www.vinted.lt/Vinted>

The Lexi - It is London's only social enterprise cinema, a volunteer-run picture palace with strong links not just to their local community, but to a unique charity project thousands of miles away in South Africa. Enterprise gives 100% of its profits to charity, providing vital support to the pioneering Sustainability Institute in South Africa - a sustainable living and learning center based in rural Stellenbosch, South Africa with educational and food programmes and ecological research initiatives.

<https://thelexicinema.co.uk/TheLexiCinema.dll/Home>

### **SYNOPSIS:**

The quiz would not be the same for users with different levels of knowledge, before the quiz itself it would be possible to do a knowledge assessment test on business, marketing, and social entrepreneurship.

The questions in the main quiz would be from different areas, for example – website, visual identity, specific social network, public relations and similar. The questions are closed type with the answers offered and whether the user answers correctly or not, after each question there will be an explanation of the answer and why their answer is correct or not. At the end of the quiz, there would be an assessment in which segment the user made the most mistakes, with a more detailed explanation and feedback. Also, the user could create an account on the platform to connect with other users more easily.

This would solve the problems of eco-social enterprises in connecting with potential customers/clients.

### **Requirements:**

- Create short instructions for the players.
- Prepare questions and answers for the quiz.
- Discuss the quiz with the participants after they finish it.

### Competences gained:

- A deeper understanding of eco-social entrepreneurship
- Acquired knowledge in the field of marketing and PR
- Improvement of several entrepreneurial skills through gameplay: information gathering, critical thinking and analysing.

### Number of participants:

The game can be played individually.

### Duration:

5 minutes for preparation

10-30 minutes for playing

10 minutes for discussion

Total duration: 25-45 minutes

### Sources:

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

Google form: [www.google.com](http://www.google.com)

### Name: Saving the world

**Type:** Digital educational tool –online game

**Format:** GDevelop game format (json)

**Methods:** game-based learning through digital gamification, information gathering, critical thinking, analysing and problem-solving

### **Pedagogical objective:**

The task of the player is to research and improve the level of available technology so that they can prevent the volcano before it erupts, without endangering the world too much due to resource exploitation or pollution.

### **Inspiration from European Heritage (O1 good practices):**

[Ecosia](http://Ecosia) uses the profit they make from our searches to plant trees where they are needed most.

[Enaleia](http://Enaleia) is an organisation with a vision to make the marine ecosystem sustainable through circular and social economy solutions. Enaleia runs several projects worldwide.

### **SYNOPSIS:**

The world of our game is threatened by an upcoming volcanic eruption. The game world is similar to Earth, and there are different biomes such as forests, plains, and rivers, as well as several types of plants to harvest and animals to hunt. The game is a multiplayer and survival game that allows players to interact with both the world and each other. The game encourages players to imitate a sustainable lifestyle. Players must take care of a balanced diet and control the collection of natural resources,



otherwise they will negatively affect or destroy the environment. For example, cutting down too many trees reduces the amount of air pollution that can be abated, and creating too much pollution by using high-tech machinery can raise sea levels and some species of plants or animals can become extinct if players harvest or hunt too much. The main goal is for the player to learn how to use natural resources.

#### Requirements:

- Create short instructions for the players according to the storyline of the game
- Download [GDevelop](#) Open source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.
- Discuss the game play with the participants after they finish the game

#### Competences gained:

- learning how to use natural resources
- Improvement of several entrepreneurial skills through gameplay: information gathering, critical thinking, analysing, problem-solving

#### Number of participants:

The game is a multiplayer and survival game that allows players to interact with both the world and each other, but it can also be played individually.

#### Duration:

5 minutes for preparation

10-30 minutes for playing

10 minutes for discussion

Total duration: 25-45 minutes

#### Sources:

GDevelop software & tutorials for use: <https://gdevelop.io/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

**Name:** Move Green [ecological responsibility + customer relationship]

**Type:** Digital educational tool - digital educational escape room

**Format:** PowerPoint Slideshow

**Methods:** Game based learning through digital gamification, educational escape room, brainstorming, information gathering, critical thinking, analysing, problem-solving, group building (for cooperative gameplay only)

**Pedagogical Objective:** The group of players encounter a range of challenges whilst running the zero waste shop in order to encounter different ways in which they can build trustworthy relationships with their clients. The aim of the game is to achieve customer satisfaction and create demand for their goods.

### Inspiration from European Heritage (o1 good practices):

[Agno Zero Waste Grocery](#) is a sustainable and social enterprise or otherwise known as a low-impact store. Their aim is to reduce household waste going to landfill and provide really amazing food and goods in bulk. They offer a selection of non-GMO foods, plastic free accessories and refill stations for cleaning products and personal hygiene. Agno grocery store also educate their audiences on recycling techniques and take part in community activation on environmental issues such as cleanups.

### SYNOPSIS:

Agno grocery store is the first zero waste store running in Limassol, Cyprus. They recently had an open call for apprentices and today is the first day for the group of selected eco-enthusiast apprentices. The apprentices enter the store's premises and are surrounded by their different products, refill stations and the staff only room. Soon after the store manager appears to greet the apprentices and tells them the challenge of the day which is to make sure they act upon the various sustainable reasons as to why their clients choose them. If the players do not tend to the 4 interactions with customers and/or product management then the grocery store will be exposed in a bad publicity scandal that will depreciate their value in the market. They have 1 hour to complete their tasks by researching the room and seeing what needs their attention.

The first clue is a leaflet on the notice board of the store which is the weekly packaging pickup schedule of a cleaning product supplier. This is how the quest is initiated, according to the schedule the supplier arrives in 15 minutes after the leaflet has been picked up by the apprentice. So the task now will be to locate the packaging to be picked up or refilled. Next clue is on the refill station identifying which products need bulk refilling. The next task will be to set up the station with reused glass jars that have been donated by the store's community. Where is the donation and reusing station? The apprentice has to clean the labels off the jars and place them back on the refilling station. That's when the delivery operator of the cleaning supplier arrives and the apprentice needs to do the whole process without receiving any packaging from this supplier that is only gaining eco-consciousness now. Once this level is completed the apprentice is faced with the last challenge of interacting with a customer. After shopping at the desk the customer asks for a plastic carrier bag. The apprentice is given 3 options, to give them a plastic bag, to offer them a bag with longer durability or to offer them a bag with longer durability and referring them to the board of the store where there are leaflets outlining what a zero waste policy entails and the impact of plastic packaging on a local level hence promoting the mission of the store also.

### Requirements:

- Create in Canva or any other designing programme one visual scene that explains the basics of who agro grocery is and what the apprentices trial is all about by the store manager.
- Create three separate scenes showcasing the locations in the store that are necessary for the game, i.e. backdoor for deliveries, reusing station, refilling station and noticeboard.

### Competences gained:

- A deeper understanding of eco-social entrepreneurship
- Improvement of several entrepreneurial skills through gameplay: brainstorming, information gathering, critical thinking, analysing, problem-solving, and group building (if played cooperatively)

#### Number of participants:

The game is designed for 1 player however players can make teams up to 4 people that will play together from one computer.

#### Duration:

5 minutes for preparation

30-45 minutes for playing

10 minutes for discussion (optional)

Total duration: 50-60 minutes

#### Sources:

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

GDevelop software & tutorials for use: <https://gdevelop.io/>

A helpbook toolkit [How to run a green escape room](#)

Examples of hybrid escape rooms [Serious escape game](#)

Customer relationship building [Customer relationship management](#)

#### Name: Running an Ecological Research Centre [Ecological responsibility]

**Type:** Digital Education tool and hybrid methodology

**Format:** GDevelop game format (json)

**Methods:** game based learning through digital gamification, educational puzzle, brainstorming, information gathering, critical thinking, analysing, problem-solving.

#### **Pedagogical Objective:**

The player is given background information about the AKTI project and research centre and simple instructions to brainstorm the different main sustainability drivers that the organisation started from. Then the player is taken into the first tasks that arise from the challenges the organisation has taken to test their critical thinking and help them develop sustainable strategies.

#### **Inspiration from European Heritage (O1 good practices):**

[AKTI Project and Research centre](#) - AKTI Project and Research Center is a non-governmental, non-profit organisation based in Nicosia, Cyprus. It was established in 2000 by a group of experts in environmental issues and has succeeded today to create an extensive network of collaborators and volunteers for raising environmental awareness and promoting sustainable development.

## SYNOPSIS:

The player is asked to become a managing member of AKTI Project and Research centre. The game consists of 4 stages. The goal the players are trying to reach by the end of the game is to follow the right paths in the game that will lead to an extensive network of collaborators and volunteers and to reach some goals of raising environmental awareness and promoting sustainable development. The first stage of the game is an introduction to the organisation and an introduction to the three head experts of the organisation and their backgrounds. Another introductory slide will have some facts on where Cyprus could be placed in terms of ecological responsibility for context.

The 2nd stage consists of multiple choice format activities and educational puzzles asking questions in regards to how will the research centre fund itself and which are the primary areas of research interest for the particular centre. The 3rd stage is a brainstorming step in which the player starts thinking about different ways in which they could go about raising awareness for the environment in the first round and how to promote sustainable development in the 2nd round. In the 4th stage the groups will be picking a combination of 2 ideas they came up with in the 2 rounds of the previous stage to develop further and get more specific in terms of what tasks they will have to do to implement these, which departments to activate and a rough idea of how long it will take to reach different phases of their ideas.

## Requirements:

- Create in Canva or any other designing programme one visual scene that gives the background information to the players on the Research Centre, the experts and the Cypriot context.
- Investigate the company and create a profile with some facts about the company that will fit in one frame of the game
- Create a staff profile for each of the experts, outlining their areas of professional expertise and areas of research.
- Create another frame depicting some facts on Cyprus and different ways to measure where the country is at in terms of sustainable development.
- Create a document with all the clear instructions that will come up on the screen for the in real life group discussions of the team.
- Create a separate image for each instruction
- Download [GDevelop](#) Open source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.

## Competences gained:

- A deeper understanding of eco-entrepreneurship
- An introduction to what is resource management
- Understanding the range of what could be considered as initiatives for environmental responsibility.

- Introduction to project management
- Improvement of several entrepreneurial skills through group brainstorm: brainstorming, information gathering, critical thinking, analysing, problem-solving, teamwork.

**Number of participants:**

This game needs to be played in groups. Minimum groups of two maximum groups of three.

**Duration:**

5 minutes for preparation

10 minutes for intro reading

10 minutes for questions

20 minutes for group brainstorm

40 minutes for developing a chosen idea within the group

Total duration: 85 minutes

**Sources:**

[AKTI Project and Research centre](#) - AKTI Project and Research Center is a non-governmental, non-profit organization based in Nicosia, Cyprus. It was established in 2000 by a group of experts in environmental issues and has succeeded today to create an extensive network of collaborators and volunteers for raising environmental awareness and promoting sustainable development.

Design thinking processes [Design thinking association](#)

Crazy 8's brainstorming exercise [Design Sprint Kit](#)

**Name:** [Are you ready to handle your first budget?](#) [Financial Management and Quiz]

**Type:** Digital educational quiz

**Format:** GDevelop game format (json), google forms.

**Methods:** game based learning, educational puzzles, critical thinking, hypothesis based problem solving.

**Pedagogical objectives:**

The player is given the role of a young entrepreneur who has just successfully received a grant to kickstart her company in the eco-social entrepreneurship field. The main goal is for the player to contemplate, answer and subsequently learn about some important questions of finance and budgeting for the initial steps of a company.

**Inspiration from European Heritage (O1 good practices):**

**EkoNest** Help customers contribute to a clean and healthy planet. They conduct their business in an environmentally responsible, socially responsible and ethical manner, putting the environment at the core of everything

**A Good Company** Truly Sustainable Swedish Lifestyle Brand. They design the best everyday products, without compromising on design or sustainability.

### SYNOPSIS:

Step 0: The game starts and the player gets the context. They enter the world of having to build an e-commerce site with a curated catalogue of ecological products. Some details about the grant they received are given in the form of a confirmation letter from the institution that rewarded them with funding. The player calls a financial advisor and books a meeting. The game starts at their office.

#### Level 1:

The whole game will be taking place at a financial advisor's office where questions are asked on a multiple choice basis. Regardless of whether the player gets the answer right or wrong the financial advisor will take the time after each question to mirror the response by the player and explain the rationale of the wrong or correct answer. Then the financial advisor goes into another frame where they are giving some extra information about the topic at hand.

The first question is about budgets. What needs to be considered in a budget? How can this be predicted? The Second question is about what fixed assets are. The third question is about variable costs and the fourth about fixed costs. The fifth question is on how profit is calculated. The sixth question is about the actual cost and the seventh about the unit costs.

#### Level 2:

This level is all about records. 1 week after the company website is live the player is asked to arrange the records that show up on the screen on the different types of books: cash books, salary books, day books and ledgers.

#### Level 3:

The third step will be an interactive level where the player will have to fill in the balance sheet of the company for the first three month period. Before having a go the financial advisor will give them a virtual tour around the sheet and all the different sections that make it up as well as showcase for them how to enter 1 debit and 1 credit transaction. The point here isn't for the player to be 100% precise even though that would be great but it is more about getting a first interaction with the finance and accounting language.

Once level 1 is passed the player receives the **101 € Glossary** badge ( designed in the scouts badge style).

Level 2 achievement is the **Finance librarian** badge

And finally Level 3 is the **Accounting Savvy** badge.

### Requirements:

- Make google form with questions and multiple choice answers

- Create 3 infographic frames on Canva or indesign introducing the player to 1. The scenario of their company, 2. The letter of finances and 3. The next steps
- Create a virtual room of the financial advisor’s space and desk on gdevelop.
- Create frames for the descriptions and explanations that the financial advisor gives to the player.
- Create educational puzzle for record keeping
- Create an educational puzzle for the balance sheet.
- Create the badge designs on canva or photoshop.
- Create the frame that will be the end scene of the game with the results and progress of the player on gdevelop.

**Competences gained:**

- Financial literacy
- Skills to calculate real life costs
- an introduction to the relationship between entrepreneur and financial advisor
- Learning the basics of accounting and budgeting.

**Number of participants:**

This game is designed to be one player but two people can do the game together to help each other out.

**Duration:**

Introduction 5 minutes

Level 1 - multiple choice and lessons 20 minutes

Level 2 - Records arrangement 5 minutes

Level 3 - Balance sheet - 15 minutes

Total duration: 45 - 50 minutes.

**Sources:**

[Rescuedbox](#) Our mission is to tackle food waste and become part of the solution. We aim to do that by rescuing 500 tones by 2025. We work closely with the local farmers’ cooperatives to deliver only the freshest produce to your door. All of the farmers are certified and use approved biological pesticides as per the EU directives. From our recyclable boxes to the recyclable tape we use to wrap them, we do our best to avoid plastic\*. Each week we optimise our delivery routes away from traffic to reduce our carbon footprint. We donate 10% of our rescued boxes to charity every week in order to fight hunger in Cyprus whilst reducing waste. We aim to create strong partnerships with like minded

local organisations to help us spread the message of food waste in general and healthy eating habits, to all households and schools in Cyprus.

Managing social enterprise finances [Social Enterprise toolkit](#)

**Name:** The three tiers of problem solving [ Ecological Responsibility + Resource Management + Finance Management ]

**Type:** digital educational source and activity

**Format:** infographics for a brainstorming, ideation and idea development activity

**Methods:** design thinking, ideation, design development, strategy design, brainstorming, information gathering, critical thinking, analysing, problem-solving, group building

**Pedagogical objectives:**

The players of this game on each round of the game are given a brief outlining ecological or social crises. The team is made up of the Dreamer, the builder and the critic so each player has to pick their character. In doing so as a team they have to come up with an idea of how they could create any type of initiative to tackle the issue at hand in an imaginative, feasible and ethical way.

**Inspiration from European Heritage (O1 good practices):**

**[AKTI Project and Research centre \(Cyprus\)](#)** - AKTI Project and Research Center is a non-governmental, non-profit organization based in Nicosia, Cyprus. It was established in 2000 by a group of experts in environmental issues and has succeeded today to create an extensive network of collaborators and volunteers for raising environmental awareness and promoting sustainable development.

**[Garmin, Danilovgrad \(Montenegro\)](#)** - Production and distribution of biodegradable bags.

**[ROUM \(Croatia\)](#)** - ROUM is a project under the Roma Youth Organisation of Croatia – ROM HR. The concept is based on learning from Roma communities which have a long tradition of reusing, rethinking and upcycling discarded objects, preserving traditional crafts and trades, showing great entrepreneurship skills and as a community reducing the amount of waste in our societies. ROUM is a discarded objects rescue centre, where Roma and artists come together to make interior design pieces out of discarded objects.

**SYNOPSIS:**

This game is played in repeating a round with the same instructions but a different brief each time. Rounds are made up of 2 parts each. The first part is the brainstorming session of the team and the 2nd part is the building session. Here are the steps to be repeated in each round.

**Part 1:**

Step 1: Team is given a brief outlining facts on one topic of ecological or social crisis in Europe.

Step 2: The group has five minutes to come up with as many ideas that could tackle the crisis as possible.

Step 3: The group picks one of their favourite ideas.



## **Part 2:**

Step 4: Each player on their device is randomly given the role of either the Dreamer, the Builder or the Critic. The dreamer corresponds to the person who develops the concept, idea and expands the vision. The builder corresponds to the jobs of a project manager or producer who have to oversee what is feasible in reality according to the resources available. The critic is the Financial advisor of the company or of a person who has expertise in the field and can pick apart any project for the idea, ethics, implementation etc.

Each player sees an information card on their device about their role in this game. Then another frame shows up which gives some guidelines and suggestions on how they can play their role better.

Step 5: The Dreamer based on the idea that the group chose in part 1 has five minutes to develop the idea and expand it, making it as imaginative as possible and as impactful as possible.

Step 6: The builder has 5 minutes to bring to life a project management plan of what is feasible and what isn't, flagging some of the ideas that the dreamer expressed that might be too difficult to implement.

Step 7: The critic has 5 minutes to question the idea and its integrity. Financial, conceptual, strategic and ethical questioning.

Step 8: Group reflection.

Step 9: Team decides whether they want to continue working on the same brief for another round to develop the idea further or if they want to start a new round with a fresh brief and newly assigned roles.

## **Requirements:**

- Develop characters: 1. Builder, 2. Dreamer, 3. Critic. On Canva or photoshop or on character development assisting software.
- Finalise instructions for each different character
- Finalise suggestion sheet for each of 3 character
- Design these infographics frames on adobe or canva.
- Design frame for a stopwatch, one for initial brainstorming, one for the dreamer round, one for the builder round and one for the critic round.
- Come up and finalise 15 different brief scripts on ecological and social crises for the game.
- Design different brief templates for visuals and create all 15 different briefs. Add the in the game
- Design “ How do you want to continue” frame. Add buttons for ‘same brief another round’ and ‘new game’.
- Develop script for the group reflection prompts
- Design the group reflection frame.

### Competences gained:

- Brainstorming and design thinking competencies to come up with a lot of ideas
- Problem solving and critical thinking whilst assessing the feasibility of the ideas
- Communication and trust building in the abilities of your team. Also growing in ability to work in a team.
- Strategic thinking for management of resources.
- Learning how to start going about an Implementation plan.
- Learning how to take initiative on ecological responsibility.

**Number of participants:** This is a game designed for teams with a minimum of 3 team players.

### Duration:

Duration of the game depends on how many rounds the participants choose to play. The minimum required to finish the game and gain competencies are 3 rounds.

Study brief: 3 minutes

Brainstorming: 5 minutes

Deciding best idea: 2 minutes

Part 2 role briefing: 3 minutes

Dreamer round: 5 minutes

Builder round: 5 minutes

Critic round: 5 minutes

Group reflection: 5 minutes

Each round varies from 20 - 33 minutes depending on the team's choices. The minimum running time of the game is 73 minutes.

### Sources:

<https://www.designorate.com/disneys-creative-strategy/> The methodology used for this game is inspired by Disney's creative strategy where each player takes on various roles to tap into their interdisciplinary nature.

<https://designsprintkit.withgoogle.com/methodology/phase3-sketch/crazy-8s> . Crazy 8's is a creative exercise that informs the activities in part 1 of this game.

**Name: Relaying information** [ Communication + Resource Management ]

**Type:** Digital educational tool - digital educational escape room

**Format:** Powerpoint show

**Methods:** game based learning, problem solving, critical thinking, IT, Financial resources, inventory, human skills, production resources, natural resources

**Pedagogical objective:**

The player is briefed into the company ‘Citizens in Power’ as a Senior project Manager. This escape room is built around the scenario that they are organising a kick-off event they are running with a focus on Waste Management. The player will be asked to make a range of decisions for the preparation of the event that will take them through Chaos mode if they miss out on any critical details to reflect the swift problem solving that Officers need to face. If they make it out of this process successfully then they earn the ready-made project manager score. If they do not save themselves from chaos mode the event never goes live and becomes a loss to the organisation.

**Inspiration from European Heritage (O1 good practices):**

**Citizens in Power C.I.P.** Citizens In Power (CIP) is an independent non-profit, non-governmental organisation. CIP constitutes one of the leading organisations in Cyprus in the fields of global education, social innovation, entrepreneurship, STEM and sustainable growth. Their team designs and implements cross-sectoral, interdisciplinary approaches, as a response to fundamental social, educational and environmental challenges and policy gaps, mainly by employing technology transfer and operationalizing the research findings.

**SYNOPSIS:**

The player enters the escape room which is the entrance of the organisation’s conference room. An information frame comes up to give them background information about the organisation (C.I.P). Another frame comes up to brief them on the Waste Management event they are about to plan in the duration of this game. The brief consists of short text and quantifiable deliverables of the task ( Event production, research, social media campaign + outreach strategy ).

The **first** activity is multiple choice. The player is shown a gantt chart of the time period until the selected date of the event which showcases the different streams of work that should be activated. They are asked to select from a list of departments all the departments that should directly be involved in the implementation of the event. Each correct option that they leave behind takes them 10% closer to chaos mode. This is a feature of the game that will be carried on throughout all the tasks. If questions are answered incorrectly, the player loses 10%. If they reach 0% then the operation fails.

The research, production, communications and outreach departments are the primary stakeholders. Once this is established the **next** activity is for the player to match each department with what they are responsible for. The **3rd** activity is for the player to locate which section of the gantt chart corresponds to each department. The **fourth** activity asks the player to identify which secondary departments are activated from this event, for example the production department will not be able to carry out their plans if they don’t have an agreed budget from the finance department.

Crisis mode:

Scenario: The PR department needs to start reaching out to organisations 1 month and a half before the event. In order to do so a press pack with key information needs to be researched, designed and communicated. The communications department and its designers however are still waiting for golden nugget insights and key information from the research department. The schedule for the PR dissemination is scheduled to start in 2 days. What went wrong?

Here the player enters a virtual room with all the heads of departments involved in this chaos and the player has to find out what went wrong. The answer is that the research department was never given a harsh deadline from the producers hence the delay in their deliverables. The player needs to deduct this information from the text bubbles that the different heads of departments have showing up above them as their point of view of what happened. The second task is for the player to rearrange the gantt chart deadlines to provide the resources needed for all departments to do their job in. In the previous conversation each character states the minimum amount of time they need to deliver the best possible deliverable. The player should have an option to look at the transcript of their conversation to decide the new timeline. If they get this correctly then the game takes them straight to the Waste Management event showcasing that they have successfully finished the game.

#### Requirements:

- A powerpoint presentation with all the slides that will correspond to the frames shown in the escape room. Infographics needed:
  - 1 slide background information for the organisation
  - 1 slide for the brief of what needs to be done for the Waste Management event to happen
  - 1 slide for the first activity + a gantt chart
  - 1 slide for the 2nd activity
  - 1 slide for the 3rd activity
  - 1 slide for the 4th activity.
- A google forms link for the questions and multiple choice answers or it might be better to use gdevelop for the activities as there is one question that asks the player to shift the gantt chart into new slots. Maybe a jigsaw puzzle type of exercise can be used.
- A bar and symbol that will depict the score the player has in regards to where they are on a scale of 0 - 100% of Crisis mode.
- 1 design of the virtual conference room
- Design of 4 head of department characters ( PR, Production, Communications, Research)
- Finalising the script of their conversation outlining the clues for Crisis mode activity 1 and Crisis mode activity 2.
- Create the animation of the different text bubbles showing up for the conversation
- Create symbols that will clarify who is who in the conversation.

- Create a script symbol that when pressed the transcribed conversation of the heads will show up on the screen.
- Add slide for activity 1 of crisis mode where the player needs to select out of 6 options what went wrong.
- Add a slide for exercise where the zoomed in gantt chart comes up where the player, like a puzzle, will need to re-design a new version of the work plan. This question will be judged on whether the plan gives at least an extra half a day for the whole production to happen as well as all handovers being set from department to department on dates that allow for enough time for each department to deliver their work.
- Add a tip bubble that advises the player to leave 1 - 2 days extra for each department if possible because life happens. ( this could also be added in the script of the conversation between the heads of departments).

**Competences gained:** project management, critical thinking, crisis management, resource management, event planning, strategy.

**Number of participants:**

This game is designed to be played by 1 person but if it suits the facilitators better it could be played by 2 people together on one device.

**Duration:**

Intro: 5 minutes

Activity 1: 5 minutes

Activity 2: 5 minutes

Activity 3: 5 minutes

Activity 4: 5 minutes

Crisis mode scenario conversation: 10 minutes

Crisis mode problem solving Activity 1: 5 minutes

Crisis mode problem solving Activity 2: 10 minutes

Game duration is between 50 - 70 minutes.

**Sources:**

Resource planning scenarios [Three Examples of How “What If” Resource Planning Scenarios Have Benefited Companies in Times of Crisis](#)

More resource planning scenarios [Resource Management Depends on Scenario Building & Planning](#)

## Name: Eco-social influencers

**Type:** Digital educational tool – online game

**Format:** GDevelop game format (json)

**Methods:** game-based learning through digital gamification, educational puzzle, information gathering, critical thinking, analysing,

### **Pedagogical objective:**

The player is given basic information about three different social enterprises and simple instructions on brainstorming a SWOT analysis. Players should carefully examine the materials and look how all of those SEs manage their image, visual identity of their business via social media and communication. It will be also useful for later identifying their strengths, weaknesses and opportunities on how they make use of social media for their business promotion.

The main goal is for them to understand how those enterprises manage their social media and their image on the social media.

### **Inspiration from O1 good practices:**

1. **BEES COOP:** <http://bees-coop.be/>
2. **ISATIO:** <https://en.isatio.com/>
3. **Paysans-artisans:** <https://paysans-artisans.be/>

### **SYNOPSIS:**

Game consists of 3 parts.

First part is the explanatory scene that explains the basics of SWOT analysis and main aim of the game. This scene can also be reached at any point of the game as a tip for the player.

The second part of the game consists of 3 profiles of real eco-social companies:

**BEES COOP:** <http://bees-coop.be/>, **ISATIO:** <https://en.isatio.com/> and **Paysans-artisans:** <https://paysans-artisans.be/>

The third part of the game consists of various facts about each specific elements that concern their social media presence, their promotion online and communication strategy. This should be rearranged in order to develop their SWOT analysis.

Players should arrange the facts in the corresponding categories of SWOT. There are an indefinite number of tries until the player arranges them in the correct order. Once the player finishes all three SWOT analyses the game is considered won!

During the game, participants will have to deal with:

- Rearranging SWOT analysis elements of three real-life eco-social enterprises
- Understand how the image of each company influences their success and what are their strategies in terms of presence in the media and social media management.
- Examples of real eco-social enterprises in Europe.

### Requirements:

- Create in Canva or any other designing programme one visual scene that explains the basics of social media & communication strategy and planning, looking at the 3 examples and their strengths, weaknesses, opportunities and threats in their social media presence and communication
- Create three separate scenes explaining the social media and communication strategy of the three companies and purpose of the gameplay
  - Example: Investigate all three companies and create 5 bullet points related to each of the companies about their social media and communication strategy. Specifically, you should come up with 2 strengths, 2 weaknesses, 2 opportunities and 2 threats.
- Download [GDevelop](#) Open-source game development software and use [software tutorials](#) to develop the interactive content between the scenes and game elements.
- Embed the game on a website in order to facilitate or play it with youth on your computer.

### Competences gained:

- A deeper understanding of eco-social entrepreneurship through the examples
- Understand the basic elements of a SWOT analysis specific for eco-social enterprises
- Get inspired by the real eco-social enterprises
- Understand what is important for developing a social media and communication strategy for a business
- Improvement of several entrepreneurial skills through gameplay: brainstorming, information gathering, critical thinking, analysing.

### Number of participants:

A game can be played individually or in pairs/teams.

### Duration:

- 5 minutes for preparation
- 30-45 minutes for playing
- 10 minutes for discussion (optional)
- Total duration: 50-60 minutes

### Sources:

Game type and design inspiration: <http://www.digitizeenterprise.org/swot-analysis/>

Social Enterprises examples:

- BEES COOP: <http://bees-coop.be/>
- ISATIO: <https://en.isatio.com/>
- Paysans-artisans: <https://paysans-artisans.be/>

Swot analysis materials: <https://www.canva.com/graphs/swot-analysis/>

Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

GDevelop software & tutorials for use: <https://gdevelop.io/>

### Name: Collaborate to grow!

**Type:** Digital Educational resource & activity

**Format:** infographics for a storytelling activity, teamwork, collaboration (blended learning)

**Methods:** digital storytelling, role-play education, role model education, collaboration, information gathering, critical thinking, analysing, problem-solving,

### **Pedagogical objective:**

A team of 9 players are given 3 different company profiles in a format of infographics based on real eco-social companies, they are given instructions to role play in teamwork to solve the challenge in order to understand the main rules of successful work in teams and the roles assigned.

### **Inspiration from O1 good practices:**

1. **Who Gives a Crap** (Australia): <https://au.whogivesacrap.org>

A Social Enterprise that sells recycled toilet paper and part of the profit goes to the project to build toilets and support reforestation

2. **Sanergy** (Africa/Kenya) <https://www.sanergy.com/>

The Sanergy Collaborative strives to solve the sanitation crisis through the power of the circular economy. It takes 3 steps circular approach: Safe sanitation systems, upcycling into reuse products and waste services

3. **Oma maa** (Finland) <https://www.omamaa.fi/in-english/>

A food co-operative based on community-supported agriculture (CSA) as well as ecologically and socially sustainable food production methods. Together as a community, they produce a large variety of products at the Lassila family farm in Tuusula, about 30 km from Helsinki.

### **SYNOPSIS:**

**Step 1:** The facilitator explains the main element that is important to work in teams. Video on YouTube to give an example about characteristics of team work. For a comparison there is also a video that shows what is not teamwork. The participants will have examples of good and bad teamwork and what are the consequences of both scenarios.

**Step 2:** Players are given 3 QR codes. One code for each team ( 3x3 players). They are instructed to scan their code in order to retrieve a profile of the company and the challenge that they will be working on in a team. Each player is given 10 minutes to study the company profile and another 5 minutes to read the challenge.

**Step 3:** Players are seated in a room in a teams and with the challenge in front of them, they need:

- To assign their roles in the team



- Identify how they need to divide their work and how to work together in order to solve the challenge in the most efficient way.

Each team has only 15 minutes to prepare the action plan.

**Step 4:** Once all teams are ready, they will have 3 minutes to present their action plan in front of other teams.

**Step 5:** After hearing all of the action plans. 3 teams discuss how they can help each other. Is there a way that 1 company can have some resources to help another company?

**Step 6:** The game is set specifically to create the action plan that requires teamwork from all of the 3 persons. Then after designing the action plan, the teams are also looking at how to collaborate and join forces with other teams. If the other team could be helpful in solving other's one challenge.

During the game, participants will have to deal with:

- Understanding the values, needs to solve the problems in teams and how to organise a team for a concrete challenge.
- Making business decisions based on storytelling and role-play activity

#### Requirements:

- Create a short presentation or a video that explains the main rules of teamwork
- Create 3 different infographics for each eco-enterprises- company profile and challenge
- Generate QR codes for each company profile and challenge
- Create a template for the action plan

#### Competences gained:

- A deeper understanding of the purpose of teamwork
- Knowledge about main areas of focus when it comes to teamwork and roles that each of us play in the team
- Understanding how to build the action plan, based on human resources that are available
- Learn about and get inspired by the real eco-social enterprises from 3 different continents.
- positive interdependence, where students understand that they cannot succeed alone but must depend on other team members
- individual accountability, where assessment of each student's performance relies on both the group and the student
- face-to-face interaction, which promotes the team's success by helping and encouraging others
- social skills, where interpersonal and group work skills are crucial to the success of a collaborative team effort
- group processing, where team members discuss their progress and relationships together.

- Improvement of several entrepreneurial skills through gameplay: creativity, information gathering, memory, critical thinking, analysing, problem-solving, networking and group building

### Number of participants:

The game should be played with 9 participants total. 3 players in each team.

It is also possible to increase the number of players to 12 or 24 so that pairs or groups represent one challenge each.

### Duration:

- 15 minutes for preparation
- 40 minutes for playing
- 10 minutes for evaluation of collaboration between the teams
- 15 minutes for results and discussion
- Total duration: 65-75 minutes

### Sources:

Free infographic creator: <https://www.canva.com/infographics/templates/>

Free QR code generator: <https://www.qr-code-generator.com/>

Evaluation questionnaire example: <http://www.digitizeenterprise.org/toolkit/m7-building-networks/>  
(see step 7.4)

Evaluation questionnaire tool: <https://docs.google.com/forms/>

### Name: Reduce plastic through shared efforts!

**Type:** Digital educational tool – digital educational escape room

**Format:** PowerPoint Show

**Methods:** game based learning through digital gamification, educational escape room, brainstorming, information gathering, critical thinking, analysing, group building (for cooperative gameplay only)

**Pedagogical objective:** Embrace the teamwork

The player is given various documents and guides that he/she should investigate and understand to finalise the task and understand what is the problem. The main goal is for them to exercise their soft skills and to understand how important teamwork is to solve the challenge, while learning about eco-social entrepreneurship.

### Inspiration from O1 good practices:

1. [Sanergy](https://www.sanergy.com/) (Africa/Kenya) <https://www.sanergy.com/>

The Sanergy Collaborative strives to solve the sanitation crisis through the power of the circular economy. It takes 3 steps circular approach: Safe sanitation systems, upcycling into reuse products and waste services

2. [Enaleia](http://www.enaleia.com) (Greece) [www.enaleia.com](http://www.enaleia.com)

It is a non-profit social enterprise tackling two directly related problems for the marine environment: reduction of fish stocks and plastic sea pollution.

**Synopsis:**

The game takes place on an island where if not working together, the island will be covered by excessive plastic and landfill. At the start of the game, the players are made aware of their mission: to work together and to prevent this ecological disaster and they can leave the island only if they work on the common action plan on how to improve the situation. The game is designed to require teamwork for successful completion; It will use scripts to assign team members with different resources, requiring them to share knowledge and collaborate. Contribution from all team members is required to achieve objectives; there is no possibility of free riding to escape from the island or not to participate in creating the action plan.

The game consists of five tasks that the players must complete as a team and each task focuses on different types of teamwork, collaboration, and leadership skills.

**1st** task focuses on building trust within the team and considering others' opinions as one of the team members guides others, who do not have any information about the possible actions that can be taken to improve the situation.

The **2nd and 3rd tasks** focus on shared decision making, sharing information, and developing negotiation, collaboration, and coordination skills.

For example, in the second task, the team needs to prepare an action plan on how to get rid of the plastic and the players must negotiate the right combination and steps of the action.

In the third task, one team member receives some clues that will guide the team in the right direction. If that team member does not share the information with other team members, it is very difficult or even impossible to complete the task.

In the fourth task, the team is required to take risks, and to plan and implement a strategy. The players must compromise between the teams in order to develop a shared solution required to and make sure that no one stays behind and that the action plan affects one team more than the others. Teams need to communicate and coordinate the work together to decide how and what to do in order not to worsen the situation.

The final task involves planning and implementing a mini project within the team where the local community can rely on and make sure that in the future there will be a control of the plastic usage and disposal and prevent such a situation from happening again. The plan will be given to the local community for future prevention.

The players are given each new task only after they have successfully completed the previous one. The game ends when the players complete the final task and they can safely leave the island because they worked successfully as a team.

#### Requirements:

- Create an interactive presentation consisting of 4 tasks/ puzzles according to the synopsis and save it as PowerPoint Show format
- Create short instructions for the players according to the storyline of the game
- Start the presentation on the computer or a tablet
- Discuss the gameplay with the participants after they finish the game

#### Competences gained:

- A deeper understanding of teamwork and needed skills
- Understand the basic elements of a SWOT analysis specific to teamwork
- Improvement of several entrepreneurial skills through gameplay: brainstorming, information gathering, critical thinking, analysing, problem-solving, and group building (if played cooperatively)

#### Number of participants:

The game can be played individually or in pairs/teams. For efficiency, it is recommended implementing in groups of no more than 12 persons (divided in pairs or teams)

#### Duration:

- 5 minutes for preparation
- 15-30 minutes for playing
- 10 minutes for discussion
- Total duration: 30-45 minutes

#### Sources:

ER scenario inspiration: <https://er-se.eu/download/18-synopsis-to-inspire-you-%e2%80%8b/>

Swot analysis materials: <https://www.canva.com/graphs/swot-analysis/>

#### Name: Food for good, not for waste

**Type:** Digital Educational resource & activity

**Format:** videos, articles for fact finding. Quiz and collaboration in teams (blended learning)

**Methods:** gathering data , role-play education, role model education, collaboration, information gathering, critical thinking, analysing, problem-solving, debating

**Pedagogical objective:**

2-3 groups players are given materials, quiz and practical cases to get familiar with the topic of food waste and sustainable packaging. Further, they will exercise the debating skills to find good arguments for the constructive discussion on the eco related topics.

**Inspiration from O1 good practices:**

**Natpacking** (Colombia) [natpacking.com](http://natpacking.com)

The first 100% organic packaging brand in Latin America and its commitment to innovation and sustainable development is reflected in this product.

**SUMA** (UK) [www.suma.coop](http://www.suma.coop)

Founded in 1975 in Leeds, trades in organic products and completely respects Fair Trade principles.

**SYNOPSIS:**

2-3 groups of students ( 2-3 per group) will explore the topic of Proper packaging for prevention, sustainable packaging ( topic 1) and food waste ( topic 2):

**STEP 1: VIDEOS**

First they will watch the youtube movies related to the topic 1:

> What is Sustainable Packaging - <https://tipa-corp.com/sustainable-packaging/>

> Watch the video about “Food Waste Prevention”:

<https://www.youtube.com/watch?v=rjxwfp8rs34>

> Watch the video about “Packaging Waste”:

<https://www.youtube.com/watch?v=62O868-bYOk>

> Watch the video about “10 promising ideas to reuse packaging | Circular economy examples Sustainability”:

<https://www.youtube.com/watch?v=pysBxD3CoGk>

> Watch the video about “The future of packaging - reducing food waste”:

<https://www.youtube.com/watch?v=hJtleCmLzZl>

**STEP 2 QUIZ:**

Based on the gathered knowledge, they will go to step 2, quiz.

Examples of the questions:

1. Sustainable packaging tends to increase in volume and weight, and the use of plastic is also higher. TRUE / FALSE

2. The life cycle of the container is

reduced, from its manufacture, transport, recycling and the energy used for its production increases. TRUE / FALSE

3. Cardboard is a sustainable packaging that replaces plastic and paper.

TRUE / FALSE

4. To avoid environmental impact, we should bring our bags from home or use reusable cloth bags.

TRUE / FALSE

### Videos related to topic 2: Food waste

> Watch the video about “Say No To Food Waste: Appreciating Food Leftovers Training Program”:

<https://www.youtube.com/watch?v=T1VsAo3uR84>

> Watch the video about “Canadians get creative in solving food waste problem”:

<https://www.youtube.com/watch?v=fRovHP4eXyM>

> Watch the video about “How your leftover McDonalds is recooked and sold by this family to survive”:

<https://www.youtube.com/watch?v=y8k3NYNurmM>

> Watch the video about “Too Good To Go: the app that reduces food waste”:

[https://www.youtube.com/watch?v=PdB\\_iW1LVc0](https://www.youtube.com/watch?v=PdB_iW1LVc0)

> Watch the video about “This app lets you buy leftover restaurant food to reduce waste”:

[https://www.youtube.com/watch?v=Xi2gfT\\_POco](https://www.youtube.com/watch?v=Xi2gfT_POco)

### Quiz topic 2:

Example of the questions:

1. There are non-profit associations in charge of recovering surplus food suitable for human consumption and fighting against food poverty by giving it to people in precarious situations in our environment. TRUE / FALSE
2. Food is not required to be labelled. TRUE / FALSE
3. Restaurants can sell or donate used oil to associations to give this product a second life, such as producing soap. TRUE / FALSE
4. Selling imperfect food at low cost instead of throwing it away is totally prohibited. TRUE / FALSE

In **STEP 3** they will look at the practical case:

### Scenario:

At Catering Eco-live, they have held an event for 300 people and have left over a lot of cooked food. The event was prepared for 300 people but only 150 attended. The catering staff dined from the remains and they didn't know what to do with so much food.

Propose a solution to not throw away food remains and make a profit or give an optimal end to all this exquisite delicacy.

### Possible Solution:

- a) Donate it to social lunchrooms (Caritas, Food Bank Foundation, social lunchrooms of the nuns of Calcutta or Associations and Foundations social lunchrooms) correctly labelled.
- b) Put it up for sale in APPs like “Too Good To Go” or “ReFood” to give food a second life and at the same time not lose money.

In the **STEP 4** : Discussion forum debate

1. Debate on Food Waste - What is waste?
  - The participants will first individually watch the following videos to prepare for the debate.
  - Would food waste reducing policies actually increase the supply of food for low income households? There is also a naïve sense that much of what would be “wasted” can simply be re-allocated to food insecure households. So, what is “waste” exactly?

### Material:

<http://jaysonlusk.com/blog/2021/1/19/debate-on-food-waste>

Food loss and waste must be reduced for greater food security and environmental sustainability - Solutions to reduce food loss and waste <https://www.unep.org/news-and-stories/press-release/food-loss-and-waste-must-be-reduced-greater-food-security-and>

- A bad wrap? Using packaging well to reduce food waste

<https://360info.org/a-bad-wrap-using-packaging-well-to-reduce-food-waste/>

- Position Paper On

Food Losses and Waste – What is Food waste? Slow Food?

[https://www.slowfood.com/wp-content/uploads/2021/01/ing-position-paper-foodwaste\\_compress-1.pdf](https://www.slowfood.com/wp-content/uploads/2021/01/ing-position-paper-foodwaste_compress-1.pdf)

### Competences gained:

- General understanding of food loss and food waste in the food chain.
- Preservation technique to reduce food waste.
- Plan and implement ecological solutions to reduce food waste.
- Design a strategy towards reduction of food waste.

### Requirements:

- access to computer and Youtube Channel

- Create PPT with practical cases ( puzzles)
- Create a google form in a form of quiz ( x2) - for each topic

**Number of participants:**

- 2-3 groups of 3 students each

**Sources:**

- video on YouTube: topic 1 and 2 ( links above)
- Links to the UNEP and Slowfood Position paper
- Quiz: will be made in the Google forms

**Duration:**

- 10 minutes: topic 1
- 10 minutes: topic 2
- 30 minutes: Scenario/ practical case
- 20 minutes: preparation and execution of the debate
- Total duration: 70 minutes

**Name: Sharks**

**Type:** Digital Educational resource & activity

**Format:** puzzle, team work, creative design, template for the marketing strategy

**Methods:** collaboration, information gathering, critical thinking, analysing, problem-solving

**Pedagogical objective:** This activity will give opportunity to exercise creative thinking and work on presentation and public speaking skills.

**Inspiration from O1 good practices:**

**Who Gives a Crap** (Australia) <https://au.whogivesacrap.org/>

A social enterprise established through a crowdfunding campaign in 2012. They produce and sell toilet paper while 50% of their profits help build toilets and improve sanitation in the developing world.

**Ecosia** (Germany) <https://www.ecosia.org/>

The company donates 80% or more of its profits to non-profit organisations that focus on reforestation. It uses the generated money from advertisements to plant trees for the environment. So far, they have planted over 100 million trees and currently have around 7 million users.



**SYNOPSIS:**

Before the main task the players will have a quick puzzle, quiz with introduction what marketing strategy is. This will give them a base introduction to the topic.

**Step 1:** Puzzle ( introduction) / Riddles/ Quizzes

Example:

Words run horizontally, vertically, diagonally & even backwards  
Find words as fast as possible to win.

W	E	P	G	C	S	L	N	S	P	R	O
P	N	H	I	O	I	H	U	C	E	E	C
I	T	E	I	O	N	C	J	I	R	S	O
H	H	Z	R	P	C	A	K	S	F	P	M
S	U	G	E	E	E	W	R	S	O	E	P
R	S	H	S	R	R	Z	O	E	R	C	L
E	I	S	C	A	I	D	W	R	M	T	I
D	A	A	A	T	T	Y	M	G	A	V	M
A	S	Z	E	I	Y	T	A	O	N	U	E
E	M	R	N	O	Y	I	E	R	C	E	N
L	H	N	G	N	Y	N	T	P	E	U	T
B	Z	O	E	E	D	U	E	W	E	W	X

UNITY SUCCESS TEAMWORK COMPLIMENT RESPECT ENTHUSIASM  
LEADERSHIP PERFORMANCE PROGRESS COOPERATION  
SINCERITY

**Step 2:** Shark Tanks

Players will be divided into 2-3 groups and they will be given puzzles with 3 descriptions of the business cases and the challenge that those enterprises will aim to solve. Based on their choice they will have the task to develop a logo, brand name and marketing strategy for the eco-social enterprise.

**Step 3:** Judgement moment

They will have to present to a panel of ‘sharks’ (those who will judge their ideas). Once each group has presented, the ‘sharks’ all vote on their favourite project.

**Step 4:** They will have a limited time to find the adequate examples of eco-social enterprises in the BC4ESE E-book and analyse their marketing strategy, based on the information they found on the website.

**Competences gained:**

- General understanding of marketing strategy
- working in a team to come up with the idea.
- Plan and implement marketing ideas.
- Design a strategy.

**Requirements:**

- Access to PC and design it using Digital tools ( open-source)
- Create PPT with practical cases ( puzzles)

**Number of participants:**

- 2-3 groups of 3 students each

**Sources:**

- Access to BC4ESE e- book for the descriptions of Eco-social enterprises
- Graphic design programme for beginners: [www.canva.com](http://www.canva.com)

**Duration:**

- 10 minutes quiz
- 40 minutes for playing marketing strategy
- 5 minutes for presentation
- 20 minutes for E-book finding the examples
- Total duration: 75 minutes

## Bibliography

### General Introduction

European Commission [https://ec.europa.eu/growth/sectors/proximity-and-social-economy/social-economy-eu/social-enterprises\\_en](https://ec.europa.eu/growth/sectors/proximity-and-social-economy/social-economy-eu/social-enterprises_en)

Rodríguez-García, M., Guijarro-García, M., Carrilero-Castillo, A. (2019), *An Overview of Ecopreneurship, Eco-Innovation, and the Ecological Sector*. Sustainability 2019, 11, 2909; doi:10.3390/su11102909 [https://mdpi-res.com/d\\_attachment/sustainability/sustainability-11-02909/article\\_deploy/sustainability-11-02909-v2.pdf?version=1559007825](https://mdpi-res.com/d_attachment/sustainability/sustainability-11-02909/article_deploy/sustainability-11-02909-v2.pdf?version=1559007825)

Werbach, Kevin & Hunter, Dan (2012), *For the win: How game thinking can revolutionize your business*. Wharton Digital Press, United States.

Jorge Francisco Figueroa Flores (2015), *Using Gamification to Enhance Second Language Learning*, Digital Education Review Volume 27, June 2015 ISSN 2013-9144

Sailer, Hense, Mandl and Kellers (2013), *Psychological Perspectives on Motivation through Gamification*

Hellerstedt A, Mozelius P, “*Game-based learning - a long history*” (2019), Stockholm University and Mid Sweden University, Sweden

Rula Al-Azawi, Fatma Al-Faliti, and Mazin Al-Blushi, *Educational Gamification vs. Game-based Learning: Comparative Study*, (2016), International Journal of Innovation, Management and Technology, Vol. 7, No. 4, Available at: [https://www.researchgate.net/publication/308613589\\_Educational\\_Gamification\\_Vs\\_Game\\_Based\\_Learning\\_Comparative\\_Study](https://www.researchgate.net/publication/308613589_Educational_Gamification_Vs_Game_Based_Learning_Comparative_Study)

Quality Assurance Agency, *Enterprise and Entrepreneurship Education: Guidance for UK Higher Education Providers*; QAA: Gloucester, UK, 2012.

Unesco, International Labour Office, *Towards an Entrepreneurial Culture for the Twenty-First Century: Stimulating Entrepreneurial Spirit through Entrepreneurship Education in Secondary Schools*; Unesco: Paris, France, 2016.

Buzady, Z.; Almeida, F. FLIGBY—*A Serious Game Tool to Enhance Motivation and Competencies in Entrepreneurship*. In Informatics; Multidisciplinary Digital Publishing Institute: Basel, Switzerland, September 2019

Grivokostopoulou, F., Kovas, K., Perikos, I., *Examining the Impact of a Gamified Entrepreneurship Education Framework in Higher Education*, Computer Engineering and Informatics Department, University of Patras; Greece, 2019, available at: [https://www.researchgate.net/publication/336524113\\_Examining\\_the\\_Impact\\_of\\_a\\_Gamified\\_Entrepreneurship\\_Education\\_Framework\\_in\\_Higher\\_Education](https://www.researchgate.net/publication/336524113_Examining_the_Impact_of_a_Gamified_Entrepreneurship_Education_Framework_in_Higher_Education)

Wu, Y.; Yuan, C.H.; Pan, C.I. *Entrepreneurship Education: An Experimental Study with Information and Communication Technology*. Sustainability 2018

Iscenco, A.; Li, J. *The game with impact: Gamification in environmental education and entrepreneurship*. Mold. Environ. Gov. Acad. 2014. Available online: [https://www.changemakers.com/sites/default/files/competition\\_entry\\_form\\_files/alexandr\\_iscenco\\_johnathan\\_li\\_-\\_the\\_game\\_with\\_impact\\_-\\_full\\_0.pdf](https://www.changemakers.com/sites/default/files/competition_entry_form_files/alexandr_iscenco_johnathan_li_-_the_game_with_impact_-_full_0.pdf), (accessed on 27 May 2019).

Deci, E.L.; Ryan, R.M. *Overview of self-determination theory: An organismic dialectical perspective*. In *Handbook of Self-Determination Research*; University of Rochester Press: Rochester, NY, USA, 2002  
 Ruiz-Alba, J.L.; Soares, A.; Rodríguez-Molina, M.A.; Banoun, A. *Gamification and entrepreneurial intentions*. J. Small Bus. Enterp. Dev. 2019

Šćepanović, S., Žarić, N., Matijević, T., (2015), University "Mediterranean", Faculty of Information Technology - *Gamification in Higher Education Learning – State of the art, challenges and opportunities*, The Sixth International Conference on e-Learning, Belgrade, Serbia

Rodrigues, L., Toda, A., Oliveira, M., Palomino, P., Vassileva, J., Isotani, S., *Automating Gamification Personalization: To the User and Beyond* (2021), available at: [https://www.researchgate.net/publication/348487182\\_Automating\\_Gamification\\_Personalization\\_To\\_the\\_User\\_and\\_Beyond](https://www.researchgate.net/publication/348487182_Automating_Gamification_Personalization_To_the_User_and_Beyond)

Swacha, J., *State of the Research on Gamification in Education (2021)*, University of Szczecin, available at: [https://www.researchgate.net/publication/349242508\\_State\\_of\\_Research\\_on\\_Gamification\\_in\\_Education\\_A\\_Bibliometric\\_Survey?enrichId=rgreq-d7607b7ec0d973e28a667d09b5632f88-XXX&enrichSource=Y292ZXJQYWdlOzM0OTI0MjUwODtBUzo5OTczMDM2MTk5NjQ5MjMjAMTYxNDc4NzEyMDY3OQ%3D%3D&el=1\\_x\\_3&esc=publicationCoverPdf](https://www.researchgate.net/publication/349242508_State_of_Research_on_Gamification_in_Education_A_Bibliometric_Survey?enrichId=rgreq-d7607b7ec0d973e28a667d09b5632f88-XXX&enrichSource=Y292ZXJQYWdlOzM0OTI0MjUwODtBUzo5OTczMDM2MTk5NjQ5MjMjAMTYxNDc4NzEyMDY3OQ%3D%3D&el=1_x_3&esc=publicationCoverPdf)

Alinezhad, A., Sajadi, S., *Entrepreneurship Education and Gamification: An Analysis of Students' Learning Outcomes* (2020), available at: [https://www.researchgate.net/publication/341774574\\_Entrepreneurship\\_Education\\_and\\_Gamification\\_An\\_Analysis\\_of\\_Students%27\\_Learning\\_Outcomes?enrichId=rgreq-a028fbaa47564b19585a872760791fdb-XXX&enrichSource=Y292ZXJQYWdlOzM0M0MTc3NDU3NDtBUzo5OTMzMDU2MDAwQDE2Nk2MzI1NDMwNjY%3D%3D&el=1\\_x\\_3&esc=publicationCoverPdf](https://www.researchgate.net/publication/341774574_Entrepreneurship_Education_and_Gamification_An_Analysis_of_Students%27_Learning_Outcomes?enrichId=rgreq-a028fbaa47564b19585a872760791fdb-XXX&enrichSource=Y292ZXJQYWdlOzM0M0MTc3NDU3NDtBUzo5OTMzMDU2MDAwQDE2Nk2MzI1NDMwNjY%3D%3D&el=1_x_3&esc=publicationCoverPdf)

Groh, F., *Gamification: State of the art definition and utilization*, (2012), University of Tuebingen, available at: [https://www.researchgate.net/publication/304380407\\_Gamification\\_State\\_of\\_the\\_art\\_definition\\_and\\_utilization?enrichId=rgreq-93a4f9eeb087b9d84e51a42f87bcd554-XXX&enrichSource=Y292ZXJQYWdlOzMwNDM4MDQwNzUzOTM1NzI1NTUwOTYwNjRAMTU2NjIxMzg0OTYxMw%3D%3D&el=1\\_x\\_3&esc=publicationCoverPdf](https://www.researchgate.net/publication/304380407_Gamification_State_of_the_art_definition_and_utilization?enrichId=rgreq-93a4f9eeb087b9d84e51a42f87bcd554-XXX&enrichSource=Y292ZXJQYWdlOzMwNDM4MDQwNzUzOTM1NzI1NTUwOTYwNjRAMTU2NjIxMzg0OTYxMw%3D%3D&el=1_x_3&esc=publicationCoverPdf)

Lee, J., Hammer, J., *Gamification in Education: What, How, Why Bother?* (2011), available at: [https://www.researchgate.net/publication/258697764\\_Gamification\\_in\\_Education\\_What\\_How\\_Why\\_Bother?enrichId=rgreq-7e851f9b22601afc7a3bfeb287f7a547-XXX&enrichSource=Y292ZXJQYWdlOzI1ODY5Nzc2NDtBUzo5NzU5MjAzMzY3NzY3NzY3MzY3NDAwMjc5MTYyMDMy&el=1\\_x\\_3&esc=publicationCoverPdf](https://www.researchgate.net/publication/258697764_Gamification_in_Education_What_How_Why_Bother?enrichId=rgreq-7e851f9b22601afc7a3bfeb287f7a547-XXX&enrichSource=Y292ZXJQYWdlOzI1ODY5Nzc2NDtBUzo5NzU5MjAzMzY3NzY3NzY3MzY3NDAwMjc5MTYyMDMy&el=1_x_3&esc=publicationCoverPdf)

Isabelle, D., *Gamification on Entrepreneurship Education*, (2020), Carleton University, available at: [https://www.researchgate.net/publication/340307706\\_Gamification\\_of\\_Entrepreneurship\\_Education?enrichId=rgreq-21240fe2fb1d2269b9658f8f0bbfbcc1-](https://www.researchgate.net/publication/340307706_Gamification_of_Entrepreneurship_Education?enrichId=rgreq-21240fe2fb1d2269b9658f8f0bbfbcc1-)

[XXX&enrichSource=Y292ZXJQYWdlOzM0MDMwNzcwNjUzoxMDA4MTk4NjE0MDExOTA5QDE2MTczODQ2ODk1MDI%3D&el=1\\_x\\_3&\\_esc=publicationCoverPdf](#)

Smiderle, R., Rigo, S., Marques, L., Miranda Coelho, J., A. Jaques, P., (2020), *The impact of gamification on students' learning, engagement and behavior based on their personality traits*, available at:

<https://www.researchgate.net/publication/338496515> *The impact of gamification on students' learning engagement and behavior based on their personality traits*

## Bosnia and Herzegovina

European Training Foundation, DIGITAL FACTSHEET DECEMBER 2019

[https://www.etf.europa.eu/sites/default/files/2020-06/digital\\_factsheet\\_bosnia\\_and\\_herzegovina\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2020-06/digital_factsheet_bosnia_and_herzegovina_0.pdf) accessed on 30/11/2022

<https://aposo.gov.ba/bs/erasmus/etwinning/> accessed on 01/12/2022

<https://aposo.gov.ba/bs/erasmus/epale/> accessed on 02/12/2022

<https://eurdice.eacea.ec.europa.eu/national-education-systems/bosnia-and-herzegovina/ongoing-reforms-and-policy-developments> accessed on 02/12/2022

Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U., Ćurlin, T. (2020), *Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business*. ENTRENOVA 10-12, September 2020, Virtual conference, Croatia, available at:

<https://hrcak.srce.hr/250935?fbclid=IwAR00E2PSQqjms8Ng-oG6qYF8R-8iNPtM6XaA0sFsDXLcj1FhUWlkqukc-Q> accessed on 01/12/2022

<https://www.biznis-akademija.com/o-medjunarodnoj-skoli-za-poslovnu-edukaciju-business-academy> accessed on 07/12/2022

<https://www.biznis-akademija.com/zabavne-poslovne-simulacije-do-profitabilnog-uspesnog-poslovanja> accessed on 07/12/2022

<https://codinggiants.ba/index.php/courses/270-osnove-izrade-igrice-semestar-1-scratch-minecraft-online?kind=+%C5%A0kola+programiranja> accessed on 09/12/2022

<https://codinggiants.ba/index.php/courses/289-osnove-izrade-igrice-semestar-2-kodu-napredni-scratch-online?kind=+%C5%A0kola+programiranja> accessed on 09/12/2022

<https://www.thecampster.com/ba/ponuda-tecajeva/poslovni-online-te%C4%8Dajevi> accessed on 09/12/2022

<https://www.fino.ioskole.net/wp-content/uploads/2021/02/Google-classroom-1.pdf> accessed on 09/12/2022

<https://www.fino.ioskole.net/wp-content/uploads/2021/02/IDroo-1.pdf> accessed on 09/12/2022

<https://www.fino.ioskole.net/wp-content/uploads/2021/02/Moodle-1.pdf> accessed on 09/12/2022

## Montenegro

Jovanović N., (2022) *Did you hear something was flying at the Spark.me 2022 conference?*  
<https://digitalizuj.me/2022/06/da-li-ste-culi-da-je-nesto-letjelo-na-spark-me-2022-konferenciji/>,  
 (accessed on 12/15/2022)

Lacmanović D., Pavićević Đ., Tomašević I., Jovanovski S., Raspor A. (2017), *Development of innovative tourist offer by using bitcoin technology and the concept of gamification*, Business Center Bar,  
<http://bscbar.org/me/category/publikacije-16/razvoj-inovativnog-turistickog-proizvoda-korisnjem-bikon-t-362> (accessed on 12/13/2022)

Ministry of economic development, (2022) *Strategy of tourism development until 2025 with action plan*,  
<https://wapi.gov.me/download/b0b3d944-a7da-4a04-b648-3e2f5e2ce74e?version=1.0>,  
 (accessed on 12/15/2022)

Tomašević, I., Vujović, T. (2013) *Preduzetnički poduhvati*, Business Center Bar,  
<https://www.bscbar.org/me/category/publikacije-16/preduzetnicki-poduhvati-365> (accessed on 12/13/2022)

### Websites used:

<https://www.undp.org/montenegro/speeches/climathon-podgorica>, (accessed on 12/14/2022)

<https://digitalnaakademija.me/po%C4%8Detna> (accessed on 12/15/2022)

[www.digitalnaskola.edu.me/en/index.html](http://www.digitalnaskola.edu.me/en/index.html); (accessed on 12/15/2022)

<https://academy.ictcortex.me/>; (accessed on 12/15/2022)

<https://flourishapp.me/>, (accessed on 12/14/2022)

## Croatia

Franković, I., Hoić-Božić, N., Holenko Dlab, M., & Ivašić-Kos, M. (2019). *Supporting learning programming using educational digital games*. In Proceedings of the 13th European Conference on Game Based Learning, Reading, UK: Academic Conferences and Publishing International Limited, 999–1003. Available online: <https://doi.org/10.34190/GBL.19.094> (Accessed on 8th November 2022)

Pejić Bach, M., Meško, M., Zoroja, J., Godnov, U. i Ćurlin, T. (2020). *Usage of Simulation Games in Higher Educational Institutions teaching Economics and Business*. ENTRENOVA - ENTerprise REsearch InNOVation, 6 (1), 27-36. Retrieved from <https://hrcak.srce.hr/250935> on 5/11/2022 (Accessed on 5th November 2022)

Plantak Vukovac, D., Škara, M., Hajdin, G.: *Korištenje i stavovi nastavnika o igrifikaciji u osnovnim i srednjim školama*, Zbornik Veleučilišta u Rijeci, Vol. 6 (2018), No. 1, pp. 181-196 Retrieved from: <https://hrcak.srce.hr/file/294324> (Accessed on 3rd November 2022)

## Serbia

*Educational games in the teaching of the Serbian language at the Primary School in Kucura* -  
<https://www.youtube.com/watch?v=Nuwp-YyMYks>, 04 06 2021.

Ministry of Education, Science and Technological Development, *Professional Instruction for the organization of educational work in primary schools in the 2021/2022 school year*, (2021) -

<https://zuov.gov.rs/strucno-uputstvo-za-organizaciju-obrazovno-vaspitnog-rada-u-osnovnoj-i-srednjoj-skoli/>

Ministry of Education, Science and Technological Development, *Professional Instruction for the organization of educational work in high schools in the 2021/2022 school year (2021)* - <https://zuov.gov.rs/wp-content/uploads/2021/08/Strucno-uputstvo-za-organizaciju-rada-srednjih-skola-2021-2022.pdf>

"Minecraft" in teaching in technical and technology classes - <https://www.savremena-osnovna.edu.rs/minecraft-u-nastavi-na-casovima-tehnike-i-tehnologije/>, (Accessed 15.03.2023.)

Mathematics teaching your child will love - <https://www.savremena-osnovna.edu.rs/nastava-matematike-kakvu-ce-vase-dete-voleti/>, (Accessed 15.03.2023.)

Ministry of Education of Republic of Serbia, *Invitation to primary and secondary schools from all over the country - Games as a learning tool – EduGaming*, <https://prosveta.gov.rs/vesti/poziv-za-osnovne-i-srednje-skole-iz-cele-zemlje-igre-kao-sredstvo-za-ucenje-edugejming/> (Accessed 04.03.2023)

Serbian Gaming Industry Report 2021, SGA, 2021 (2022) - [http://sga.rs/wp-content/uploads/REPORT\\_2022.pdf](http://sga.rs/wp-content/uploads/REPORT_2022.pdf)

Klasnja, S., (2020), *Key indicators of the situation of young people in Serbia – Comparative analysis with other European countries and trends*, Ministry of Youth and Sports

*The Strategy of Digital Skills Development in the Republic of Serbia for the period 2020 – 2024*, Official Gazette of the RS”, No. 30/18

## Cyprus

AgriCharisma (2020). AgriCharisma Digital serious game <https://play.google.com/store/apps/details?id=com.DefaultCompany.Agricharisma>, Accessed on 3rd February 2022

Agro-EduGames (2020). IO2- Module: Escape Rooms/Break-out Boxes on Agro-Entrepreneurship <https://agroedugames.com/io2-module-escape-rooms-break-out-boxes-on-agro-entrepreneurship/> Accessed on 3rd February 2022

Agro-EduGames (2020). IO3- Agro\_EduGames Escape Card Game. [https://agroedugames.com/io3-agro\\_edugames-escape-card-game/](https://agroedugames.com/io3-agro_edugames-escape-card-game/), Accessed on 3rd February 2022

CARDET. (2023). *CARDET - Gamification*. <https://www.cardet.org/tags/gamification?start=40> Accessed on 3rd November 2022

CCIF. (2023). *GreenEnter4Future*. CCIF CYPRUS YOUTH NGO. <https://www.ccifcyprus.com/greenenter4future.html>

Citizens In Power. (2023). *Activities – Citizens In Power*. <https://citizensinpower.org/activity/>

COARTHub. (2020). Escape Rooms. <https://co-art-hub.eu/en/login/?next=/en/escape/>, Accessed on 3rd February 2022

Cyprus Interaction Lab. (2022, December 21). *Home*. <https://www.cyprusinteractionlab.com/>. Accessed on 3rd January 2022

Cyprus Mail. (2020). *Cypriot start-ups in the running for best green business idea*. <https://cyprus-mail.com/2020/08/25/cypriot-start-ups-in-the-running-for-best-green-business-idea/> Accessed on 3rd January 2022

Cyprus Mail. (2022). *Partnership aims to promote green entrepreneurship*. <https://cyprus-mail.com/2022/02/17/partnership-aims-to-promote-green-entrepreneurship/> Accessed on 3rd January 2022

Cyprus Ministry of Education, Sport and Youth. (2023). *Department of Primary Education*. <http://www.moec.gov.cy/dde/en/index.html> Accessed on 4th February 2022

CyprusInno. (2016, October 20). *Recyward*. <https://cyprusinno.com/places/startups/recyward/> Accessed on 3rd January 2022

CyprusInno. (2022, August 14). *STOMP CY*. <https://cyprusinno.com/stompcy/> Accessed on 4th February 2022

EntrINNO. Do you have what it takes to be an entrepreneur? <http://entrinno.org/game/> Accessed on 4th February 2022

Escape rooms for Social Entrepreneurship (ER-SE) (2019). A COMPREHENSIVE MODULE PACK WITH SCENARIOS. <https://er-se.eu/en/a-comprehensive-module-pack-with-scenarios/> Accessed on 4th February 2022

Famagusta Walled City Association (MASDER), AKTI Project and Research Centre (AKTI), and, the Famagusta Women Centre Association (MAKAMER). (2023). *GoSocialCY |*. <https://gosocialcy.eu/> Accessed on 3rd February 2022

Gamification of Digital Learning. (2020). *Gamification of Digital Learning*. <https://gdl-project.eu/> Accessed on 14th November 2022

Georgiou, Y., & Kyza, E. A. (2018). Relations between student motivation, immersion and learning outcomes in location-based augmented reality settings. *Computers in Human Behavior*, 89, 173–181. <https://doi.org/10.1016/j.chb.2018.08.011> Accessed on 16th November 2022

HCI International. (2021). *T29: Shifting to Digital: Gamification in Course Design | HCI International 2021*. HCI International 2021. <https://2021.hci.international/T29.html> Accessed on 16th November 2022

INSPIRE. Innovative psychometric Serious Game. <https://inspireyouth.eu/innovative-psychometric-serious-game/> Accessed on 3rd February 2022

Ioannou, I., & Kyza, E. A. (2017). The role of gamification in activating primary school students' intrinsic and extrinsic motivation at a museum. *Proceedings of the 16th World Conference on Mobile and Contextual Learning*. <https://doi.org/10.1145/3136907.3136925> Accessed on 3rd February 2022

Kyza, E. A., & Georgiou, Y. (2018). Scaffolding augmented reality inquiry learning: the design and investigation of the *TraceReaders* location-based, augmented reality platform. *Interactive Learning Environments*, 27(2), 211–225. <https://doi.org/10.1080/10494820.2018.1458039> Accessed on 3rd February 2022



LogoPsyCom, CTMB, IMS Private School, EUphoria Net, & Szkoły Edukacji Innowacyjnej. (2020). *Gamification of Digital Learning- Compendium*. <https://gdl-project.eu/wp-content/uploads/2022/11/Compendium-of-methods-for-gamification-in-digital-learning.pdf> Accessed on 3rd February 2022

Manesis, D. (2020). Barriers to the Use of Games-Based Learning in Pre-School Settings. *International Journal of Game-Based Learning*, 10(3), 47–61. <https://doi.org/10.4018/ijgbl.2020070103> Accessed on 3rd February 2022

StandOutEdu. (2023, January 26). *Game-Based Learning in Education - StandOutEdu*. StandOutEdu - StandOutEdu. <https://standoutedu.com/game-based-learning-in-education-2/> Accessed on 2nd February 2022

Synthesis. (2022). *PROJECTS*. <https://www.synthesis-center.org/projects> Accessed on 3rd February 2022

Synthesis, Energap, EcoLogic, & National Agency for European Educational Programmes and Mobility. (2022). *POLICIES FOR SOCIAL ENTREPRENEURSHIP IN CYPRUS*. <https://green-entrepreneur.net/wp-content/uploads/2021/11/polices-cypus.pdf> Accessed on 3rd February 2022

The Green STEAM. The Green STEAM Incubator Board Game. <https://steam-incubator.org/the-green-steam-incubator-board-game/> Accessed on 2nd February 2022

University of Cyprus. (2018a). *Multilingualism and Language Learning in the Digital Era, Conference Abstracts*. <https://www.palm-edu.eu/wp-content/uploads/2018/09/BOOKLET-ABSTRACTS-Multilingualism-and-Language-Learning-in-the-Digital-Era.pdf> Accessed on 4th February 2022

University of Cyprus. (2018b). *Multilingualism and Language Learning in the Digital Era, Conference Program*. <http://enimerosi.moec.gov.cy/archeia/1/ypp7233d> Accessed on 3rd February 2022

## Belgium

Dichev, C., Dicheva, D., (2017), *Gamifying education: what is known, what is believed and what remains uncertain: a critical review*, in *International Journal of Educational Technology in Higher Education*, Springer Open

Eurydice's Key Data on Learning and Innovation through ICT at school in Europe:  
[http://eacea.ec.europa.eu/education/eurydice/documents/key\\_data\\_series/129EN.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/key_data_series/129EN.pdf)

GDL Project Publication(2021), *Compendium of methods for gamification in digital learning*:  
<https://gdl-project.eu/wp-content/uploads/2022/11/Compendium-of-methods-for-gamification-in-digital-learning.pdf> (accessed 12/11/2022)

OECD: *“How Learning Continued during the COVID-19 Pandemic : Global Lessons from Initiatives to Support Learners and Teachers”*: A. Minea- Pic; Belgium (Flemish Community): KlasCement, OECD Library ( January 2022)

<https://www.oecd-ilibrary.org/sites/9a09dc2a-en/index.html?itemId=/content/component/9a09dc2a-en#notes-d7e11234>, (accessed 18/02/203)

University of Liege, Psychology and Education; *European Schoolnet, Survey of Schools, ICT in Education*, Country profile: Belgium (November 2012)

Volterrani, V., (2021), *Didattica e gioco: Game Based Learning? Gamification?*, in Servizio Marconi TSI, <https://serviziomarconi.istruzioneer.gov.it/2021/01/12/didattica-e-gioco-game-basedlearning-gamification/>, (accessed 18/02/2023)



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