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HANDBOOK FOR DIGITAL LOW-SKILLED ADULTS AND ADULT EDUCATORS IN RURAL AREAS

IMPROVING DIGITAL SKILLS IN RURAL AREAS OF EUROPE

PARTNERSHIP

Acción Laboral
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CARDET
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SPEL
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1. INTRODUCTION

1.1 General overview of the Digital Rural Game Project

DIGITAL RURAL GAME project aims to promote in low-skilled adults the acquisition of digital competences and other soft skills needed to eliminate the digital gap in rural areas in Europe.

The achievement of the objectives of the project will allow low-skilled adults to access the new jobs that digitalization will bring, minimizing the risks of long-term unemployed and helping to fix population in the most disadvantaged rural areas.

To this end, the project aims to develop materials that support professionals in the field of adult education in search of employment or that seek to improve their employment status. These materials will be based on the concept of "gamification", a learning technique that moves the mechanics of games to the educational-professional field in order to achieve better results, either to better absorb some knowledge, improve some skill, or reward specific actions, among many other objectives. This type of learning gains ground in training methodologies due to its playful nature, which facilitates the internalization of knowledge in a more fun way, generating a positive user experience.

By the end of the project, the consortium will have developed support materials for adult educators so that they can train digital skills and other soft skills through an online game of low-skilled people in rural areas.

To achieve these goals, it is expected to obtain the following results:

R1. Identified the gaps and needs among low-skilled adults in rural areas in partner countries.

R2. Develop an interactive online game to improve digital skills in low-skilled adults in rural areas.

R3. Created a handbook for educators and low-skilled adults in rural areas for a correctly use of the game and improving digital skills in rural areas of Europe.

1.2 Partners

Acción Laboral

ACCIÓN LABORAL is a non-profit organization, born in 2002 as a tool to develop initiatives in cooperation with the Public Administration and Private Companies to provide coverage in the field of Employment and Training.

ACCION LABORAL main activity is to improve the employability of people at risk of social exclusion, especially, those defined as priority in the National Plan of Action for Employment: people with disabilities, migrants, long-term unemployed, low-skilled young people, women, etc.

ACCIÓN LABORAL offers different services and training courses nationwide: Training for workers; Training for unemployed people; Employment programmes; VET (Accredited by National Employment Service); Job Search Training.

CARDET

CARDET (Center for the Advancement of Research & Development in Educational Technology) is an independent, non-profit, non-governmental, research and development organization based in Cyprus, with partners around the world and is one of the leading institutions in the Euro-Mediterranean region for research and development.

CARDET's mission is to promote research, innovation, and development through evidence-based practices, to inspire next generation in education and to empowered people and communities.

I&F

I&F Education is an Irish based organisation working in and from Dublin for the educational development of people of all ages, especially in the areas of entrepreneurship, sport and personal development, youth and schools, language acquisition, inclusion and diversity and rural development.

They put the emphasis on adult and lifelong learning. They are also involved in a number of Transnational European Projects and are part of several European Networks along with the EDIN Network, which is focused on diversity and inclusion.

CATRO

SPEL

SPEL is a network of schools founded in 1990 by a group of teachers who intended to create a new concept of School, that would not only be a learning environment, but also a place where students can receive psychological and social support. SPEL works with schools that are located in socioeconomically disadvantaged communities and has been focusing its activity in the sense of addressing the problems and social realities of these communities, through the implementation of teaching and professional training methods that are adjusted to these scenarios. In this context, SPEL's ultimate goal is to improve the socio-economic conditions of children, youngsters and adults from disadvantaged communities through education/training and coaching.

2. Interactive online game

2.1 General description of the game

The Digital Rural game is inspired by the DigiComp (Digital Competences) framework of the EU and it uses gamified environment to gently nudge low digitally competent individuals from rural regions from 5 European countries (Cyprus, Spain, Ireland, Portugal, and Bulgaria) to engage in the digital sphere via grounded and realistic scenarios related to their daily challenges and needs.

There are 5 games developed each with its own, country specific, characters and each dealing with 5 main challenges identified in the partnership as well as in DigiComp and Eurostat Yearbook 2017.

1. Access to eGovernment

2. Access to Market for work

3. Access to Cultural and Intellectual Opportunities

4. Access to Education

5. Access to Market as a Consumers

Each of the five (5) games contains five (5) decision scenarios and twenty (20) tasks. In total over 500 actions need to be performed by the player-learner.

The decision scenarios are there to prong the learner to consciously choose to engage with the material, (for example "You need to use the map, do you quit?") and followed by a number of tasks that teach the learner simple digital skills by engaging her in trial and error.

The game is designed with utility as its utmost priority. In this spirit repetition of tasks is very common, albeit with qualitative differences, as the player-learner progresses from game to game and becomes more and more familiarized with online basics.

Thusly, it does away with mainstream knowledge based gamified learning such as assessments and focuses on teaching simple digital lessons that provide immediate knowledge to the learner.

2.1.1 Who it is aimed at, what kind of game it is, what are the expected benefits

The expect benefits to learners to extend in three levels.

In the first level we expect our focus in real life challenges will provide the users with basic and important information on understanding the digital world a bite size at a time. This is the self-learning level.

On a second level we believe this game should be used in a classroom setting in order to motivate the learner population in the beginning or end of relevant classes and as sort of an informal assessment of progress, especially if it is utilized ex-ante and ex-post after a module or a certain training period. The game is designed to not resemble an austere lesson plan but to lean on fun and trial and error as much as possible.

On a third and final level we believe that the game can be of use in larger national or transnational organizations awareness and empowerment actions on digital and entrepreneurial competences.

2.1.2 Technical information and requirements of the game

The game is developed to run in all digital devices but it is optimized to be played in larger screens in landscape rather than mobile phones and portrait. The game requires adobe flash.

There are 4 types of questions in the game. The functionality of the questions are intuitive and there are clear instructions in the setting up of the narrative.

- True/False
- Drag and Drop - Matching

- Multiple choice
- Timer

Moreover, there are hints to help the player-learner as well as feedback when the learner makes a choice.

2.2 Gamification as a teaching tool

2.2.1 What is gamification

Gamification is defined by Marczewski (2013), cited by Kiryakova, Angelova, and Yordanova (2014), as a process that involves the creation of game metaphors and elements in non-game contexts, with the goal of increasing motivation and commitment on the part of players. Gamification is especially useful with tasks that are not enjoyable, because it helps users engage with the content in a more interesting way than what would happen in the absence of gamification, or, as Aseriskis & Damasevicius (2014) put it, gamification can be used to "enable attitude change and increase user motivation". Fuchs et al. (2014, p. 9) cite McGonigal, who considers that gamification can also make user "approach social and political issues in the real world", so this strategy has the potential not only to capture the users' attention and increase their motivation, but also to draw their attention to certain topics and perhaps even problems that affect the real world.

Yang (2015) draws attention to the fact that gamification is not about creating a "complete game" (p. 1), but about redesigning systems through the integration of game elements. Kiryakova, Angelova, and Yordanova (2014), give some examples of the elements that are usually present in games and also play a key role in gamification, namely that:

- All users are participants, both when gamification is used in the context of business and in the context of education;
- There are challenges or tasks that should be accomplished in order to achieve a goal;
- The players accumulate points as they accomplish tasks;
- There are levels that the players can pass;
- There is some type of reward for completing actions;
- Players are ranked according to their achievements.

Gamification can be used in many fields. For example, it can be used by companies to improve worker productivity and for training and development, it can also be us
ed as a marketing strategy to attract new customers, when companies use game features in their products and services (Fuchs et al., 2014), and, naturally, it can be used in Education, to improve student engagement, learning and motivation.

2.2.2 Gamification in Education

Gamification in Education involves the use of game elements to promote learning. It has the potential to motivate student and increase their interest and engagement in several subjects, being especially useful for the subjects that are typically considered hard or boring by the students. Through gamification, students can change their perception about these subjects, increase their engagement with the materials and also knowledge retention. Additionally, according to Lee & Hammer (2011, p. 2), through gamification teachers can "experiment with rules, emotions, and social roles", which can motivate student to participate more. Gamification has the potential to target the learners' extrinsic and intrinsic motivation simultaneously. Extrinsic motivation has to do with doing something for an external reward, like a prize, points, or a good grade (Cloke, 2014). In Education, this could translate into a situation where the students do not actually enjoy learning, but do it to achieve good grades, or, more positively, with gamification, students could be engaged in the process for the game itself and its rewards. Intrinsic motivation, on the other hand, is the motivation that comes from within and results in internal rewards. Students who are intrinsically motivated, enjoy doing something because they derive positive feelings from it and truly enjoy it, so they have a desire to do an activity for what it is, not because of some external reward (Cloke, 2014). This is also applicable to gamification in the sense that students can feel intrinsically motivated to play a game, because they enjoy it. Of course, not all games are created equal and Marczewski (2013) suggests four key motivational drivers that should be included in gamification in order to maximise intrinsic motivation and student engagement:

- **Relatedness**: this had to do with a need for a sense of belonging and

connection to others. The more a game fosters these feeling, the more intrinsically motivated the students will feel.

- **Autonomy**: Students should have a degree of autonomy to make their own decisions and feel like they have some control of what they are doing, so that they can be creative and innovative.
- **Mastery**: The level of difficulty should be proportional to the learners' level of mastery, not too difficult, but also not too easy. It is also important that the difficulty level increases as the activity progresses, if this is possible.
- **Purpose**: There should be a meaning to the actions in the game, for example, learners should know what they are going to learn when they play a game.

2.2.3 How to gamify a learning experience

Gamification is about adding game elements to a learning experience. Naturally, there are many ways to create a gamified system for learning, and the aim of this document is not to provide an exhaustive list of features, but rather suggest some strategies that tend to work well in gamification and engage and motivate the learners. Generally speaking, Lee & Hammer (2011) state that gamification can be used in practice on the level of three domains, in which it can serve as an intervention and learning experience. The first domain is cognitive, which requires players to understand and explore complex systems of rules through experimentation. The second domain is emotional, that is, games that call for the emotions of the players, making them experience positive emotions, such as pride, and work through negative emotions in a positive way. The third domain is social, in which the learners can assume a new role, or the point of view of someone different from them, learning from this. Lee & Hammer (2011, p. 4) reinforce that a "well-designed gamification system can help players take on meaningful roles that are fruitful for learning".

When it comes to specific game features, Buljan (2021) suggests a series of strategies that can be incorporated into learning, such as:

- **Point systems** – assigning points for completed tasks can be

motivating and engaging for students;

- **Badges** – they can be used to reward learners for their efforts, either in person or digitally, for example, through a pinned image on the learner's profile;
- **Leaderboards** – they foster competition among the learners, and might make some learners work harder so see their name on the top of the leaderboard;
- **Challenges** – ask learners to solve a problem, without any negative impact if they fail or solve it incorrectly.
- **An element of surprise** – an element that is unexpected and makes the learners excited, like an opportunity to unlock a new feature in the game.

Morschheuser et al. (2017) also performed research on the best way to design gamification, and concluded that although there are many ways to it, there are overlaps in the methods previously described in the literature, namely that a successful "gamification design should follow an iterative, user-centered design process with high degree of user involvement as well as early testing of design ideas" (p. 1306). Therefore, when designing a game for a learning experience, there should be an effort to make it learner-focused and interactive, and an effort should be made to pilot the games ideas with the target audience.

2.2.4 Using gamification with adults

Gamification can be a powerful tool to promote adult learning and it has been successfully used in adult education. For example, it is often used in business settings, for team-building purposes or to help students learn about certain topics. It is also used effectively in marketing, customer loyalty, user experience, personal productivity and training (Prieto, Rodrigo & Vieites, 2021). According to Hogle (n.d.) a well-designed game has the potential to fulfil the needs of a self-deterministic (that is to say, autonomous) adult learner, meaning which are the need for competence, autonomy and social relatedness. Competence can be achieved through games and show progress and reward achievement, autonomy can be fostered by letting students choose what and when they learn (more possible through gamified e-

Learning) and social relatedness can be achieved by using collaborative or competitive games. However, there can also be some challenges in using gamification with adults, namely that they can be sceptic to the idea of using games to learn. As opposed to young, learners, who might be more used to learning through games, adults might have doubts about the educational merit of gamification. In this context O'Neal (2017) highlights the importance of having well designed games that not only maximise engagement and motivation in adults, but also have measurable objectives, encourage problem solving, promote teamwork and give the players a sense of control. Prieto, Rodrigo & Vieites (2021) also state that although this is not always used, including a characteristic of storytelling in a game can work as a persuasive technique, by having the players fulfil a role in order to achieve a goal.

2.2.5 Benefits of gamification as a teaching tool

As previously mentioned, gamification can have many benefits when it comes to teaching and learning. Gamification has an influence on both extrinsic and intrinsic motivation, helping students go from reactive learners to proactive learners (Kaufmann, 2018). It is also a tool that can bridge the gap between the generation of teachers and the generation students, who are more used to using technology and games (Kapp, 2017, cit in Soboleva et al., 2018). Gamification is also compatible to address the challenges faced by traditional classroom systems, where the teaching process tends to be focused on the accumulation of knowledge and the learning process is not individualised (Soboleva et al., 2018). Gamified models allow for more exploration on the part of the student, who has a more active role in their own learning. Another difference when comparing gamified models to traditional education, is that the former reward all efforts made as opposed to just the achievements, which benefits the attitude, commitment, and motivation of the students towards new learning experiences (Parra-González et al., 2020).

Studies also show that that gamification can help students overcome academic challenges (Kaufmann, 2018), for example, there are gamification apps that track student progress, which can help student keep track of the progress they have made on their assignments, reading lists and other

academic tasks, by motivating them to engage in these activities and to avoid procrastination. Kaufmann (2018) states that these apps, and potentially other gamified systems, take the psychology of video games and what makes them fun through the application of principles of reward and feedback, enhancing the behavioural conditioning of the students in a way that they intrinsically desire to learn.

Gamification also has been reported to have a positive effect on cognitive learning outcomes (Bevins and Howard, 2018; Hamari et al, 2014; Kim et al, 2018, cit in Rabaha, Cassidyb & Beauchemin, 2018), with an increase in learning achievement.

2.2.6 Examples of good practices

Gamify Your Teaching – increasing vocational competences of entrepreneurship Teachers with the use of gamification – This project had the goals supporting professional development of vocational competences of teachers and trainers of entrepreneurship and enhancing ICT teaching with the use of gamification. This project was classified as a success story within the Erasmus + programme and had a positive impact on both teachers and students, allowing them to increase their ICT skills.

AgriSkills Project - Innovative Skills Transfer for the Development of Agricultural Entrepreneurs – this project was classified as a good practice in the scope of the Erasmus + programme and it aimed to develop and improve the level of key competences and skills of young adults with precarious conditions from rural areas, with the purpose of developing their own business. One of its results was the creation of a new entrepreneurial virtual initiative GAME, with a gamification approach, which taught the target group how to create a company, startups or other legal entities on the national level in each partner country.

FITPED - Work-based Learning in Future IT Professionals Education – This project was also considered a good practice, and aimed to design and implement a sustainable educational model ensuring the development of highly specialised skills and competencies of future IT experts in

programming and software development. One of the results of the project was the creation of a gamified platform to prepare the students for lifelong learning by applying selected elements of work-based-, collaborative- and problem-based learning in courses.

2.3 Digital competences and aims

2.3.1 What are digital competences and why are they important

Digital competence refers to the confident and critical usage of the full range of digital technologies for information, communication and basic problem-solving in all aspects of life (School Education Gateway, 2020).

According to Dr. Riina Vuorikari, being digitally competent is a task for any 21st-century citizen since the vast majority of the areas of our society, such as employability, work, leisure, education, inclusion and participation, are becoming increasingly "digitised".

Therefore, digital competence is crucial for participation in today's world. Along with the fact that, as points out Vuorikari (2015), it is **a transversal competence**. This means that digital skills also help us handle other key competences, «such as communication, language skills, or basic skills in math and science» (2015).

Since all citizens need digital skills to study, work, communicate, access online public services and find trustworthy information, there are many arguments that could justify the high importance of developing a digital literacy. Laurence Mossman highlights the following:

- **Boost Online Learning**
  We live in a world where if we don't know the answer to a question, we can simply search on Google and we'll be given various answers from different sources. Fantastic learning opportunities today are a result of the democratization of education through digital platforms.

- **Give You An Edge**

10 of the 15 top emerging jobs today are directly related to Digital and Technology fields. Almost certainly, all 15 jobs require at least a baseline knowledge of digital literacy skills.

- **Support Effective Communication**
  Anyone with a smartphone and internet access can use messaging apps to communicate with others. Digital Literacy Skills allow us to take these communication channels and more effectively communicate to our audience.

- **Increase Efficiency**
  Digital technology and platforms allow us to access information in seconds saving us time and resources in the process. Digital Literacy Skills allow us to take control of the steering wheel and drive our digital devices to help us reach our goals, working with less energy and reaching a wider audience.

- **Help You Evaluate Information**
  Those set of skills allows us to use our critical thinking or digital literacies to evaluate and assess information, helping us to become more aware and responsible digital citizens.

- **They are crisis Proof/Future Proof**
  They allow us to stay ahead of the game, using technology to provide solutions when old business models no longer work in a digital world.

- **Can Increase Your Income**
  Having baseline digital skills would likely bring in more income than non-digital jobs. And having specific digital skills would pay even higher. That's not to say that non-digital skills are less important.

- **Enable Creativity**
  They allow us to bring our creations to life. From logo designs to Pixar films, to fully interactive Virtual Reality Experiences, our creativity can be further enhanced with digital skills.

- **Improve Security**

  Digital Literacy Skills give us the ability to use digital devices and the internet safely and responsibly so that we don't run into security risks, fall prey to online scams, and we can manage our digital footprint.

2.3.2 Aims: according the Digital Competence Framework for Citizens

Since it is a very important skill nowadays, at the European level it was created the so-called "DigComp", which is the European Digital Competence Framework, that aims to improve citizen's digital competence.

The Joint Research Centre stated exploring on this subject in 2005

> *«With the aim to provide evidence-based policy support to the European Commission and the Member States on harnessing the potential of digital technologies to innovate education and training practices, improve access to lifelong learning and to deal with the rise of new (digital) skills and competences needed for employment, personal development and social inclusion».*

This competency is not only about knowing how to browse the Web, «but can be broken down into a range of smaller components». DIGICOM 2.0., a more recent and improved version of the framework that we have already explained, proposes the following 5 areas to be digitally competent:

Information and data literacy:

To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.

Communication and collaboration:

To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.

Digital content creation:

To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.

Safety:

To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.

Problem solving:

To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.

2.3.3 Aims: according the Digital Competence Framework for Consumers

In addition to the DigComp for Citizens, it is also relevant to mention the Digital Competence Framework for Consumers (2017), as some parts of the game aim to address the use of digital technologies as a consumer. Consumer digital competence is defined in the mentioned document as "the competence consumers need to function actively, safely and assertively in the digital marketplace" (p.7). Digital marketplaces are without a doubt very useful and have great potential to make our lives easier, but are not without risks. In this context, the Digital Rural Game addresses some of these risks, teaching the players to make smart and informed decisions when using digital marketplaces. In accordance with the Digital Competence Framework for Consumers (2017), the Digital Rural Game project and the game created in its scope address the following competences in the three areas of competence (pre-purchase, purchase, post-purchase):

Pre-purchase:

Browsing, searching and filtering information on goods and services. Evaluating and comparing information on goods and services. Recognising and evaluating commercial communication and advertisement. Managing digital identity and profile in the digital marketplace. Considering responsible and sustainable consumption in digital markets.

Purchase:

Interacting in the digital marketplace to buy. Managing payments and finances through digital means. Managing personal data and privacy.

Post-purchase:

Sharing information with other consumers in the digital marketplace. Asserting consumer rights in the digital marketplace.

3. Playing the game

3.1   How to use the Digital Rural Game in the classroom

The Digital Rural Game is meant to be flexible. As previously mentioned, it can be used for self-learning. The game is available in the Digital Rural Game online platform, meaning that anyone with Internet access can use the game to improve their knowledge of the basic digital competences addressed in the game.

Another way to use the game is as a complement to a lesson or module, for example as a warmer exercise, before starting or after concluding a module or as a re-energiser at various stages of a lesson. Due to the short and fun nature of the game, it is recommended that it is used in this way, as an add-on to a more comprehensive lesson on the topics of the games.

Additionally, the game can be used in non-formal education settings designed to improve basic digital competences, such as lifelong learning, community-based or adult literacy programmes.

The following section proposes some guidelines to dedicate a whole lesson to playing the games, but these can be adapted by the trainer depending on the context of their class. As previously mentioned, the games can be taught/played on their own, or be included as a part of a wider lesson.

3.2   Guidelines for trainers

3.2.1 Preparing

3.2.1.1 How to prepare a class to play the game

When setting up their class, teachers should be mindful of the following practical aspects, fundamental to the effectiveness of their training sessions:

1. Scheduling (Remelle et. al., 2010: 25):

   • A single session may take about more than two hours. Make sure you booked the room long enough and inform the participants of the length

prior to their attendance!

• Make the participants aware this is not a regular class.

2. Preparing the environment (Remelle et. al., 2010: 26):

• Make sure you have all you need in the room: computers and/or tablets. The game can also be played on the participants' mobile phones, but the game is best played on a bigger screen.

3. Ensuring the trainees' comfort:

• Be mindful of the time you set up the class, if applicable.

• Be mindful of the lighting and breathability in the classroom

• Communicate with/inform the attendees regarding their need for breaks

Furthermore, with regards to the intellectual preparation of the participants, the trainers should constructively inform them as to the nature and objective of the training session(s) they will participate in. This includes an introduction to the Digital Rural Game project - who is it for, why was it created, what are its aims (in terms of empowering its target group to be more digitally agile and adaptive to the contemporary work environment), as well as what practical skills and knowledge will the participants be expected to take from it. Complete transparency is needed for the game to be facilitated effectively. We do not wish for participants to come with unrealistic or unclear expectations into their training session.

The details needed for this informative stage will further be given to the trainers during the piloting phase of the project.

Please, refer to chapter 3.2 of this handbook for greater specifics regarding the facilitation of the training sessions themselves.

3.2.2 Playing

3.2.2.1 Guidelines to start the training session

In this section, we will first and foremost go through the attitude we encourage the instructors to assume before starting their training sessions. Marczewski (2013) described the four key drivers needed to maximize student engagement and motivation in a gamified learning/teaching session. These same factors will need to be taken into consideration by the trainers when preparing their classes to play the Digital Rural Game.

The first and most important factor - relatedness - arises from the high value lying in the participants having a sense of belonging and connection during the whole course. This encompasses a connectedness with others who will play the game, and the facilitation of a clear relation to the overall goal and vision of the game.

A good practice here is for the trainers to deliver both a systematic and an engaging introduction to the activities and objectives of the course, as well as an opportunity for the participants to introduce themselves and share a few words with regards to the nature of their attendance (ambitions, motivation, practical reasons, expectations and fears). This will create a good setting for the sense of relatedness to naturally develop. With regards to the other factors detailed in Marcezwski's work (purpose having already been covered), namely - autonomy and mastery, the trainers must ensure they have familiarized themselves with the game. This will enable them to inform and adequately support their learners in becoming aware of the boundaries to their autonomy within the controlled environment of the game, as well as its level of difficulty, which will be increasing as they go along. To take the most out of the game, they must acquaint themselves with the rules. This must be done after the introductory phase, and before engaging the players with the game. With regards to the modules themselves, the same approach must take place - an introduction with regards to the role the participants must assume to take the most out of each module. Background, learning objectives, rules to each learning unit, and expectations in terms of trainee preparation/learning requirements, as well as what they will gain with the completion of each unit and the overall module.

Please, refer to the description of each module (Scenarios 4.1 - 4.4.5) and the former/latter parts of Digital Rural Game project handbook for details

regarding the conduct, assessment and reflection required to execute informative, empowering and engaging training sessions.

3.2.3 Debriefing

3.2.3.1 Steps at the end of the training

As a facilitator, it is important to dedicate some time to debriefing after each training session, to know what worked well, what could be improved in the future. Debriefing is defined by Martinali (2021) as a meeting that happens after an activity, such as a training exercise, and in which "a number of events that occurred during the activity are explored, lessons are learned, and extra information is given". Debriefing should ideally happen right after the activity and the amount of time dedicated to it should be proportional to the length of the training session, but it is recommended that it lasts at least 10 minutes and it is not longer than an hour. There are many possible ways to perform debriefing, so the procedure present in this document is merely a suggestion of a course of action.

In a debriefing session, naturally, it is important to ask for the trainees' feedback, but before that, a trainer should ask themselves some questions as well, to make a self-reflection about the activity that took place. For example:

- Do I feel like the training was successful?
- What went especially well?
- Which part of the training did the students seem to enjoy the most?
- Was there a part where the students did not seem to be as engaged?
- What could I do to improve my performance next time (if anything)?

Self-reflection is part of reflective teaching, which involves collecting, recording and analysing teachers' and students' thoughts and observations in a systematic manner, so that positive changes can be made to the teaching practice (Spalding, 2020). If the trainer has an idea themselves of what went right, or wrong, they will be able to relate to the feedback given by the trainees.

Then, the trainer should explore and review the results of the training with the trainees, encourage them to share their experience and what they have

learned. One possible way of debriefing is by focusing on Kolb's model, mentioned by Frederick (2015), which helps the trainees get insight from experience, by focusing on four core questions:

1. What?

In this step the purpose is to collect data about what happened during the activity. The trainer can ask questions like: What happened during the activity? What did you observe? In this step the trainer must ask the trainees about the "facts" of the experience they went through.

2. So what?

Once the trainees described the factual events, the trainee can start analysing the experience with them, by asking questions about how they felt during the game. For example: How did you feel while playing the game? What did you think of the experience? Do you think this activity was useful for you? What did you learn? What kind of problems, if any, did you encounter during the activity?

3. What if?

This question drives the trainees to think creatively. If they mentioned any problems or challenges they felt in the previous step, the trainer can now ask them what can be done to improve the experience and overcome the challenges felt. This will allow the trainees to really think about their experience and think of solutions.

4. Now what?

In this step, having had the time to process their experience and possible solutions to problems, the students can have some time to reflect on how they can apply what they learned in the future and what will be the outcomes of having participated in the activity, as well as how they can develop their learning.

These debriefing steps will make it possible for the trainer and the trainees to reflect on their experience from having played the game, which can be very useful for future experiences.

4. Using the game for self-learning

Self-learning is progressively more necessary in the world we live in. As
stated by Bjork, Dunlosky & Kornell (2013, p. 418), "our complex and
rapidly changing world creates a need for self-initiated and self-managed
learning". The Digital Rural Game scenarios, with their short and
entertaining games, provide great opportunities for self-learning, as they
can be played autonomously on the online platform of the project. But how
to make the most of self-learning? Bjork, Dunlosky & Kornell (2013) share
some tips that can help individuals become better learners:

1 – Be an active participant in the learning process – simply reading
information is not the best way to learn something. Learners must interpret,
connect, interrelate, and elaborate on information. The game scenarios
developed in this project provide a more practical way of learning, and
therefore, of remembering information.

2 -   Create meaningful connections with pre-existing knowledge. This will
help achieve meaningful encoding in the learner's memory, making it easier
to recall information at another time.

3 – It is better to "space, rather than mass, one's study sessions" (p. 421)
as well as vert the environmental conditions of studying, by, for example,
changing study spaces. This can be easily achieved with Digital Rural Game,
as the scenarios developed are as portable as a mobile phone, for example,
and can be played anywhere.

4 – Finally, monitoring learning is important. An independent learner should
be able to assess the quality of their learning. This can also be done with
the scenarios presented in the Digital Rural Game, which are meant to be
representative of real-life situations. One way of assessing learning would

be to try to use the skills developed by playing the game in real life. Why not use a real digital marketplace after playing that scenario in the game?

Applying these principles will help individual players make the most of their learning.

5. Game Scenarios

Each game starts by placing the main character in a particular setting where correct digital action choices are a prerequisite for progressing in the game. The player always has a story and must overcome a series of challenges called "decision scenarios". Taking the position of the character, he answers questions, gradually becoming more competent in benefiting from the opportunities provided by the digital world. Using intuition, tips and hints to solve simple tasks, the player-learner interactively progresses through the different scenarios, becoming empowered as a user able to navigate their way through most common online services.

4.1 Game 1 – E-Government

4.1.1 Brief description of the game

This game is framed within the theme of access to government services online through the experience of Giannis, a middle-aged farmer that lives in a village and has only passing knowledge about the internet and technology. The game hinges on his need to apply for an agricultural subsidy scheme online.

4.1.2 Challenges, digital competences and learning objectives

The 5 scenarios deal with basic IT skills like creating a profile in a government service, the intricacies of creating a unique and safe email account, using online maps, subscribing to government through newsletters and social media channels, paying a traffic ticket and basic

dealing with online scams. These real life scenarios can provide a hinge where the VET trainer can launch or test the students and help low skilled adults living in rural areas acquire a basic skillset by themselves.

4.1.3 Answer Key

Game Title	Type of Task	Correct Answer
Creating a profile	Multiple Choice	Try to register to the e-government platform
	Select	Google Chrome or Firefox icons
	Multiple Choice	Press on the blued area of the link
	Select	Register to the e-government
	Multiple Choice	GiannisKourkoutas1968@gmail.com
	Multiple Choice	1Agriculturalsubsidy!
	Fields	a. Username: "all inputs correct"

		b. Email: GiannisKourkoutas1968@gmail.com
		c. Password "all inputs correct.
		d. Password again "It needs to match the input in password"
Using a map	Multiple Choice	"Select all"
	Multiple Choice	Wi-Fi / Mobile Internet Data & GPS
	Select	a. click on Paphos b. click on Theletra c. click on field 67
	Select	SUBMIT
Subscribing to information	Multiple Choice	To find announcements, training opportunities, and government programs
	Multiple Choice	Newsletter
	Input	Gianniskourkoutas1968@gmail.com
	Multiple Choice	By clicking the FOLLOW button
	Multiple Choice	By clicking the FOLLOW button

Making a payment	Multiple Choice	Pay a ticket
	Fields	a. Ticket Number: AT123 b. Car Plate: LA310 c. Amount to be paid: 138 euros
	Fields	a. Credit Card Number: 1234456812344568 (no spaces) b. Security Code: 1234
Watch out 4 scams!	Multiple Choice	Check if the e-mail account works but don't reply to the sender
	Select	Close the email and press NEXT
	Multiple Choice	Block the sender and delete this e-mail

4.2 Game 2 – eWork

4.2.1 Brief description of the game

The scenario takes place in a rural village where the local school has closed due to the COVID-19 pandemic. Alex, an English teacher, has consequently lost his job at the school and is looking for new opportunities. Presented with the hardship of finding work in the area where he lives, he remembers his old friend who recently came back from the US. Alex knows he is digitally competent and, being aware of the opportunities of the contemporary online job market, he embarks on a journey to gain new skills with the guidance of his friend that will help him set foot on the road to his professional development once again.

4.2.2 Challenges, digital competences and learning objectives

The challenges in the interactive game include helping Alex create an email account, digitise his qualifications, register for a job searching platform, find an online education course suitable to his professional interests, learn about writing a CV and cover letter, as well as discover an online software for conducting meetings.

4.2.3 Answer Key

Game Title	Type of Task	Correct Answer
Creating an online address	Select	a. An electronic device b. A mobile phone number c. Internet Access
	True or False	TRUE
	True or False	FALSE
	Select	Use the 'forgot my password' option
Digitizing qualifications	Multiple Choice	Scan his documents and make a digital copy
	Multiple Responses	use a scanner take a picture with the smartphone

	Multiple Responses	ID card
		Driver's license
		University Diploma
		An English language certificate
	Multiple Choice	Register to a free online storage service cloud and upload the files
	True or False	False
Creating a CV	Multiple Responses	A short account of his professional capabilities
		A list of his professional qualities
	Multiple Choice	search for information online
	Multiple Choice	Use a Europass
Upgrading skills	Multiple Choice	All of the above
	Multiple Choice	Compare the courses and pay only for the one he likes the most
	Multiple Choice	He should use his real name
Having online interviews	Drag'n'Drop	First Name – Alex
		Last Name – Ivanov
		Email – Al.ivanov81@gmail.com

		Password – 14412aouvd!
	Fill in the Fields	Type of employment: Full-Time
		Where: Sofia
		Salary range: 900-1200euro
		Qualification: Senior Level
		Job Category: Graphic Design
	Multiple Responses	He should explain how his achievements and skills correspond to the job
		His cover letter should be three to four paragraphs long
		He should prepare it after researching the company he is applying to
	Multiple Responses	the teleconference software the recruiter proposes
		a web camera
		a working microphone

4.3 Game 3 – eEducation

4.3.1 Brief description of the game

This scenario is framed within the theme of "Education" and deals with the life of Jimmy, an Irish former fisherman who decides to convert a newly acquired house into a B&B.

The different games that are proposed are aimed at Jimmy learning how to manage his new business, contacting new customers by mail, sharing information on social networks or creating a business card to make himself known, among other actions related to the digital environment.

4.3.2 Challenges, digital competences and learning objectives

Among the areas proposed by DIGICOM 2.0. in order to be digitally competent, this scenario is specifically intended for the user to improve in **Information and data literacy**, since it is designed to learn to articulate information needs, to locate and retrieve digital data, information and content.

Other challenges posed by the scenario activities relate to the area of **Communication and Collaboration**. The player will learn to interact, communicate and collaborate through digital technologies along with being able to managing one's digital identity and reputation. In this particular case, the identity to be reinforced is that of the main character's new business, which can be extrapolated to any other business project.

Finally, the user will be able to improve in the third area proposed by the European digitization framework: **Digital content creation**. For this purpose, the different tasks of the scenario propose the creation of content in existing templates that the player will only have to fill in with the requested information. In a way, the user learns to edit digital content and make it usable for his own projects.

Safety and problem solving in the digital world are perhaps the two areas that are least trained through the proposed scenario. However, they are topics that the player will be able to put into practice in other phases of the game.

4.3.3 Answer Key

Game Title	Type of Task	Correct Answer
Creating a company email!	Multiple Response	Use a dedicated phone number for the business Create a professional email account for the business
	Multiple Choice	Zulu!mail
	YES or NO	NO
	Multiple Choice	The icon of a pen on a piece of paper
	Multiple Choice	"to" field
Learning Basic eMarketing	Multiple Choice	Create a basic template and send it as a default image in every email he sends
	TRUE or FALSE	FALSE
	Multiple Choice	Create a social media page to share the image

Gathering customer feedback	Multiple Choice	Create an online form and send it to clients
	TRUE or FALSE	TRUE
	Multiple Choice	The Client Feedback template
Finding business partners	Multiple Choice	BNB management training
	TRUE or FALSE	TRUE
	TRUE or FALSE	TRUE
	TRUE or FALSE	FALSE
Choosing an online course	Multiple Choice	Enrol in a tutored online language course for learning French
	Multiple Choice	Online tutored French language courses
	Select	"Signup" button
	TRUE or FALSE	FALSE

4.4 Game 4 – eConsumer
4.4.1 Brief description of the scenario

This scenario follows Isaac Bright, an artist from a rural area who is looking to buy painting supplies online. The game proposes different scenarios, such as looking for and buying supplies on Amazon. The game will teach the players how to create an account and verify their email address, how to use a search bar and refine search terms, how to looking at reviews, contact the seller, and the necessary steps to safely make an online purchase.

4.4.2 Challenges, digital competences and learning objectives

This game aims to address the challenges felt by individuals living in rural areas. According to the Eurostat Yearbook 2017, one of the main challenges is related to difficulties in accessing public services or transport services. This game aims to give the users some competences to mitigate the negative consequences of this challenge, by giving users the tools to shop online. In this context, this game addresses competences from both in the Digital Competence Framework for Citizens and the Digital Competence Framework for Consumers.

Concerning the DigComp for citizens, the game addresses, first of all **information and data literacy**, that is, knowing how to interpret data online and how to locate and retrieve digital data, information and content. Then, **Communication and collaboration** is also addressed, that is, the users will learn how to communicate with online sellers and look at product reviews written by other users. And there will also be a focus on **Safety**, namely by teaching users how to safely purchase online.

When it comes to the DigComp for Consumers, the focus of this game will be on the **Pre-Purchase** and **Purchase** stages of the online shopping process. When it comes to pre-purchase, the game aims to teach users how to browse, search and filter information on goods and services, as well as to create a profile on digital marketplaces. When it comes to the process of purchase itself, the game addresses interaction with the digital marketplace, how to manage payments and privacy online.

4.4.3 Answer Key

Game Title	Type of Task	Correct Answer
Shopping online	Multiple Choice	Buy art products from online shops
	Multiple Choice	Create an Amazon account
	TRUE OR FALSE	FALSE
	YES OR NO	YES
Searching for products	Multiple Choice	Type the word "canvas" in the search bar
	Multiple Choice	blank canvas
	Multiple Choice	click on the button "Add to basket"
Details and Reviews	Multiple Choice	check the FAQ and the shipping information
	Multiple Choice	check the customer reviews
	Multiple Choice	write an email directly to the seller

Proceed to check-out!	Multiple Choice	buy the products since Amazon is a legit online shop
	YES OR NO	YES
	Fill in the Fields	Full name: Isaac Bright Postcode: NG33 5NU Address Line 1: Grantham Street, 50 Town/City: Lincolnshire
	Multiple Choice	4587 5265 9632 5489
eShopping for more	Multiple Choice	Use a search engine
	TRUE OR FALSE	FALSE
	Multiple Choice	Check all the results shown on the page

4.5 Scenario 5 – eCulture

4.5.1 Brief description of the scenario

This scenario follows Lola, a recently retired teacher from a rural area who is looking to book a romantic trip for her anniversary online. The game proposes different scenarios, such as looking for and booking flights and a hotel online. The game will teach players how to find flights and a hotel online, how to book tickets for a theatre play through an online platform, how to register and attend an online event, learn how to browse an online library, and subscribe to an online magazine.

4.5.2 Challenges, digital competences and learning objectives

The challenges posed in this scenario include:

- Navigating the internet
- Searching for information about a trip
- Booking trips and tickets
- Make an online purchase
- Protect personal data
- Participate in an online event and go through the digital registration process
- Manage and use an app
- Online subscriptions

If we analyse this scenario from the perspective of the areas proposed by DIGICOM 2.0, this scenario is specifically intended for the user to improve in **Information and data literacy**, since it is designed to browse, search and filter data and information, as well as critically evaluate the credibility and reliability of those online sources and manage them. Additionally, this scenario allows players to interact through digital technologies, share data and information and participate in society through the use of public and private digital services to seek opportunities for self-empowerment.

They should be aware of behavioural norms and be able to manage their digital identity as well, while protecting their personal data and privacy, checking if a website is legit or not.

4.5.3 Answer Key

Game Title	Type of Task	Correct Answer
Booking trips online	Multiple Choice	Try to book the tickets online

	Select	Location: Rome Dates: 24 June – 26 June Visitors: Adults 2
	Select	Budget 0 – 100 Stars 4 stars
Safe online choices	Select	Pick up the phone (Green button)
	Multiple Choice	Try to buy online tickets by herself
	LEGIT or NOT LEGIT	https://www.bargaincheap.com – NOT LEGIT
	LEGIT or NOT LEGIT	https://www.suntheater.es - LEGIT
	LEGIT or NOT LEGIT	https://www.cheaptickets.com - LEGIT
Attending online events	Multiple Choice	Try to register to the event by herself
	Multiple Choice	Yes, she should give her email
	Rearrange items	1. Open the email application 2. Open the mail Lola has just received

		3. Copy the password code
		4. Open the link to the event
		5. Paste the password code to connect
	YES or NO	NO
	Multiple Response	not talk over other people and not talk without permission
Downloading ebooks	Multiple Choice	Try the library's book-reading app on her phone
	Select	The application icon shaped as a book
	Select	Download eBook
Online subscriptions	Multiple Choice	SUBSCRIBE TODAY
	Multiple Choice	Try the online subscription
	Drag'n'Drop	Name: Lola Fernández Address: Casa Str. 6 Town/City: Portillo Email: lolafrz55@kmail.com Postcode: 47160 Card number: 2626 5843 1578 2648 Exp. date: 02/2025 CVV: 852
	Multiple Choice	Select icon "Envelope"

6. Final debriefing

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