NAME	GAMIFICATION - GAMING
Short description (What)	Gamification in training is the process of applying gaming designs, rules and concepts to learning or training processes to make them more engaging. Instead of being taught through lesson plans, trainees learn through (interactive) games. This creates a fun and rewarding learning environment. The specific aspect of a gamification process is the presence of a challenge inside the virtual environment, rewards and prizes (it makes the difference in comparison with other interactive solutions through PC). You have a goal to achieve or a challenge to solve with different level of competition, alone or with other players. With the term "gaming" we mean the game. In this category we include all types of gaming and, usually, when gaming is applied in an educational environment we can speak of "EDUTAINMENT". The digital games, unlike other mediums, allow students to immerse themselves in scenarios that are difficult to represent in reality and in doing they became the protagonists in first person. In recent years, serious games have proven that learning while you play is a very enaging and efficient way of learning. Different types of digital games are possible: - standardised games usable for educational purposes (Simcity or Classcraft) or games developed ad hoc - 3D gaming or 2D gamification (if it's necessary or not a VR headset).
Purpose/aim (why)	☐ Immediate evaluation of learning results ☐ Co-create contents (Conceptual maps) ☒ Acquisition of new knowledges ☒ Showing job processes and techniques ☐ Systematization of contents ☐ Experiencing of practical activities ☒ Acquisition of job processes ☒ Evaluation of learning results
Contents/learning objects suitable *(on what)*	The gamification is particularly suited to introduce and learn work processes. Through a game a job environment is simulated and the student has to act following specific activities in order to improve the correct flow of actions. In detail, he/she can: - apply processes according with their professional role, including a series of the tasks to be performed in a specific order (each tasks represents a step to be solved to go to another step) - test process and actions making errors and learning from them in a protected environment in which errors can't cause dangerous consequences. The student is in a simulated environment where he/she can understand the limit of his/her action because at most a "virtual crash" occurs and nothing else happens. - recognize a damage, diagnose it and try to intervene through the appropriate processes to solve the problem encountered

	- be trained to the importance of specific procedure (i.e. safety) through the showing of possible consequences. A virtual game can also be used to learn practical activities because it supports the leaning of a process necessary to pursue a specific result (es. change a pipe, change the spark plugs, make a reservation, make a recipe, etc). The gamification can be used in integration with other digital solutions and in f2f lessons. It can be applied to: - foreing language learning - accomodation, front office and tourist reception activities (also by phone) - in building (plumbing, electrical, construction) to learn the characteristics of the materials and how they must be used - in socio-sanitary field to study the correct procedure and flow chart (ex. Heimlich maneuver, patient handling) - in cooking and service: order management and table service (correct sequence of work.
Type and level of interaction	High level of interaction with digital tools that simulate a work environment. Low or high level of interaction among students if it is foreseen according with the game developed (sometimes a task must be carried out by 2 players). Low or high level of interaction with the trainer if it is foreseen according with the game developed. A trainer usually is a character of the game (for ex. the technitian who gives you a task in a specific situation).
Type of learning stimulated by the solution	☒ Learning from experience ☐ Learning through creative thinking ☐ Learning from peer interaction ☒ Learning from a reflexive process ☐ Learning from imitation/observation ☒ Game-Based Learning
Digital solutions' brand names	Some gaming can be used to pursue educational aim. As an example of *serious games* from IT: - Bury me, my Love (a story of migration) - Function&Go (mathematical game) - Escape room (a logic game) - Venti Mesi (a collection of interactive stories on the Resistance and Liberation from Nazi-Fascism). In Irene (IT best practice), a game was developed with the aim of supporting in a funny way the foreign language learning.
Technical equipment *(the technical equipment needed to support its use in training/teaching)*	To play 2D game: PC or other devices. The game is an executable program that requires few resources. To play a 3D game: gaming PC with dedicated video card and an headset. To develop a game: PC well equipped and powerful (from a graphically point of view). Developing videogames require a development environment (with specific programmes) and an IT developer.

Equipment conditions	To play 2D: equipment conditions can be purchased and/or shared (if the players don't play at the same time) . To play 3D: a) gaming PC with dedicated video card and an headset all in one; b) a PC with native headset VR (a cheapest solution) To develop a game: you require specific programs and a well-equipped PC.
Costs	To play 2D: the cost of the device. It's not necessary a performing one. To play 3D: PC and an headset all in one (average €350) To develop a game: high costs for PC and for IT developer.
Main technical problems that can be occurred / maintenance needs	Bugs in the game (usually corrected during the trial test but possible). For games financed by specific programs new releases are not expected. Technical problems in HW and software. Low maintenance costs during the released final version of the game.
Methodological indications for trainers/teachers	Videogame is an active medium: it requires a constant participation, it implies choices, actions and reactions, problems to solve and steps to overcome to progress the game. Difficulties encountered stimulate learning. A game-based learning has positive benefits: - learners do not need to be physically present on the lectures, they can practice at any time, in the place of their convenience. - Interactive exercises engage all students directly in the tasks, ensuring the equal participation and the same level of skills reached. - engagement increase students' motivation. - games which involve the virtual reality technologies allow learners to really "enter" in the situation - provide a safe exercise environment for different sectors, where a mistake or inadequate preparation might cost human life or health. The game can be placed at the beginning of a learning course to present work processes or during the course to present specific contents. The choise depends on the content of the game and on the development of a lesson. It's important to stress that a game supports and not replaces theory and practice in real context. Another suggestion is to start to propose a game following a gradual approach to make learners more familiar with the tool and with the complexity of the games. In order to avoid the risk of confusing learning process as an "amusement park" (the aim is learning and not gaming), trainers have to develop a strong methodological approach to manage the integration of methods and tools with the aim of improving skills and knowledges of the students and stimulate their awareness of ongoing learning process. Using games implies: - prepare the students to collocate the game in the development of the course/subject, from a methodological perspective, by giving evidence to the learning purposes and giving information that help them to contextualise the game and to understand the skills to play. - prepare the students to use the games, from a technical perspective, giving information on rules and operations and supporting the practical use of the game - support the students in the experience, if in presence

	- propose de-briefing solutions to connect the game experience with the skills developed in order to fix the learnings. At the end of the experience it's necessary to replace what learnt in the real situation. The game experience can be relived at home as a review or reinforcement of learning.
Describe the use onsite of that solution	Games can be used onsite, in the classroom (in an IT laboratory). For 3D games it's necessary an headset for each student or you need to structure the experience taking into consideration turns to use it. Moreover it's necessary to delimitate the setting for the 3D experience. The methodological indications must be adopted and adapted to the F2F setting.
Describe the use in the distance setting of that solution	The possibility to use different devices make the use of gaming possible wherever and whatever is necessary. This characteristics makes games particularly suitable for distance learning. The methodological indications must be adopted and adapted to the online setting.
Main pedagogical problems that can be occurred	- Risk of "amusement park" approach to learning - Risks in distance learning setting (lack of attention, low level of engagement, low level of motivation)
Troubleshooting suggestions	- Diversifying methods and tools: games can be interspersed by other solutions that stimulate reflection, listen, interactivity, theoretical learning, ecc. - Stimulate interaction among students especially if in the game it is not foreseen.
Role of the teacher/trainer	The trainer accompany the student along with different steps of the game. Monitor the learning progress and reinforce if necessary the acquisition of contents. The trainer supports students in understanding feedbacks and contestualising them in a correct framework to support learning process. Evaluate learning outcomes and effectiveness of the experience.
Strengths *(regarding contents, techniques and processes)*	- The training usefulness of the error: a game is a protected environment in which a student can test errors avoiding consequences. After a failure he/she can restart without fear to reach the final aim. - Immediate feedbacks provided during the game - The competition and the game as a lever for learning - An engaging storytelling: the game lies in a developed story in which learning contents are discovered step by step. This stimulate engagement and curiosity to follow the different game steps. - Through a game you can re-create a real situation (work place) if no equipped rooms are available - Easy acces, effectiveness and direct involvment of students
Weaknesses *(regarding contents, techniques and processes)*	- High costs to develop taylor made games - Low opportunities to customise the game in the final release. The trainer can contribute to the development only in a pre-develompment analysis phase. - Low longevity of the course/program/lesson/game: once the challenges have been completed and overcome, students may not want to repeat the entire path. - Low quality: some games have low graphical and operational quality
Linked practices	

(if available – see the other scheme)	
Main characteristics *(Evaluate each characteristic)*	

	Low	Medium	High
Level of interaction among trainees during the experience	☒	☐	☐
Level of interaction with the trainer during the experience	☒	☐	☐
Autonomy in the use of the solution by the trainee	☐	☐	☒
Easy to use (friendly?) by the trainee	☐	☐	☒
Easy to use (friendly?) by the trainers	☐	☐	☒
Level of peer-to-peer collaboration	☒	☐	☐
Inclusiveness (in relation to disadvantaged groups)	☐	☐	☒
Level of engagement	☐	☐	☒
……			

Other relevant information	
Comments	*Gaming* can integrate other digital solutions or the F2F onsite lesson It's important to develop a methodology to integrate gaming in learning processes; it's important to design preparatory and de-briefing activities (contents and organization). *Suggestion to train the trainer to use it:* Let the trainers to test directly a game; support the trainers to develop their learning program in order to place the game during a lesson according with contents and learning objectives *Pay attention* to avoid "falling in love" with the game forgetting learning aims. To support trainers to think about the development of a lesson and to make sense on what proposed.
A contribution by	*EnAIP Piemonte*