



Output: 1 Activity 2

Pedagogical Framework for Simulated Practice Learning for Social Workers who Interact with Vulnerable People

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February 2015

Disclaimer: This publication has been produced with the support of the Erasmus+ Programme of the European Union. The contents of this publication are the sole responsibility of the “Digital Bridges” Project Consortium and can in no way be taken to reflect the views of the NA and the Commission.

Document description	
Document name	Report: <i>Pedagogical Framework for Simulated Practice Learning for Social Workers who Interact with Vulnerable People</i>
Abstract	This document aims to propose an innovative pedagogical framework for simulated practice learning (game-based-learning) for social workers. It will help BRIDGE partners, dealing with game design and game development.
Version	Final
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Output number	1
Activity number	2
Related Documents	Curriculum; Cognitive task analysis; Game Design; Game Scenarios; Training materials; Pedagogic Guide

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I. Introduction

The current Pedagogical Framework is developed under the ***Simulated Practice for Skills Development in Social Services and Healthcare - Digital Bridges*** project (ERASMUS+ agreement number 2014-1-UK01-KA200-001805). The main aim of the document is to outline the key constraints for developing a simulated practice learning environment based on a 3D immersive game aimed at social workers who interact with vulnerable people in general and more specifically with children (3 to 7 year old).

It takes into account the following:

- the current need across the EU to build on the professional competences of social workers through their practice learning (be it as part of their initial training or in the course of their in-service training or continuous professional development (CPD));
- relevant learning theories with a particular focus on games-based learning;
- the game requirements and cognitive task analyses for simulated practice learning for social workers;
- a curriculum for simulated practice learning for dealing with vulnerable people aligned with ECTS/ECVET (the latter two also developed under the same project).

The Pedagogical Framework for simulated practice learning defines briefly:

- the underlying theories of learning with a special emphasis on games based learning and simulations;
- the professional competences which should be developed;
- the role of the learner(s);
- the role of the trainee(s);
- the role of the learning material;
- the role of feedback and assessment in the course of the simulated practice learning.

The present document addresses a wide readership - decision and policy makers in the field of professional training for social and healthcare workers, curriculum designers, learning materials writers, trainers, trainer trainers, assessors, people who work for educational institutions and non-governmental organizations as well as individuals active in the field of providing instruction for professionals interacting with vulnerable people or directly involved in working with endangered, marginalized, socially excluded or otherwise vulnerable groups.

II. Background:

The present report aims to deliver an innovative pedagogical framework for developing training simulations based on serious games in order to improve social workers' competences to interact with vulnerable people as well as to tune their own attitudes towards this target group. It is motivated by several important factors, which can be broadly grouped around two key aspects - **A)** the needs in the social care sector and **B)** the achievements in the field of games based learning and the employment of serious games in a number of educational settings.

A. In the first place, health and social services have gained significant attention over the recent years and will become even more important in view of the fact that the European society is growing older and is facing serious problems with unemployment, migration and social exclusion. Despite differences in political approaches and institutional frameworks, all EU countries need to reassess their capacity and competences to face with new emerging challenges. Thus the healthcare and social systems in all EU Member States face similar requirements from the environment to adjust to the demographic problems as ageing, societal changes, migration, rising expectations and social pressure.

The afore-mentioned processes lead to a key part of the sector dealing with vulnerable people. A recent report by the Social Protection Committee on the social dimension in the EU 2020 Strategy (European Commission, 2010) stated that greater emphasis must be put on generating an effective and innovative way of developing the human capital. This implies as well much broader efforts and engagements for those responsible for improving the quality of life for vulnerable people throughout Europe.

Consequently, the professional qualification and more specifically, the preparation of social workers and staff dealing with vulnerable people is crucial. There is a need to develop innovative practices in the training of social and healthcare students and professionals at organizational, local, regional, national and European levels. In many parts of Europe, the sector has a strong emphasis on learning and assessing skills for job roles in real practice environments (often referred to as "practice learning"). In certain educational traditions in the field, this practice-oriented learning can amount to almost 40% of the total learning time. There are also on-going demands for practice learning with newly qualified professionals and professionals as part of their "in-service"/CPD (continuous professional development) training. Clearly, there are logistical challenges in arranging practice opportunities where trainees are able to learn/enrich/refresh the

core skills of the job and receive high quality support, supervision and assessment of their competences from suitably qualified mentors or practice assessors in a real life professional environment.

Another challenge is related to the risks associated with work-based learning and the safety and well-being of service users. This risk should be well realized as trainees have to deal on a daily basis with vulnerable people, consequently their actions (or lack of actions) can directly affect vulnerable people's lives.

B. Simulation learning has gained in popularity and is being used more and more frequently in a number of health disciplines including social care (Wiseman, Haynes, and Hodge, 2013). According to Cosman *et al.*, (2002) simulations display a number of important advantages such as being available at all times and being usable in the progress from novice to expert. They also lend themselves to being rehearsed before being assessed and allow for risk-free training. Furthermore, when computers are used, an effective record of previous performances of the procedure can be compared to future attempts and thus the trainee can obtain effective feedback.

In addition, games-based learning has also grown in popularity and become recognized as a potentially engaging (motivating and rewarding) and novel (innovative and more interactive) form of supplementary learning. It has been applied in a number of different areas such as: physics (Anderson and Barnett, 2013), health and well-being (Farrel *et al.*, 2011), multiculturalism, tolerance, and solidarity (Furió *et al.*, 2013), promotion of social skills and bullying prevention (Rubin-Vaughan *et al.*, 2011), nutrition (Baños *et al.*, 2013; Yien *et al.*, 2011), music (Çoban, and Tuncer, 2008) mathematics (Bakker *et al.*, 2012), science (Wang, 2008) and language learning (Yang, Chen and Jeng, 2010, Connolly *et al.* 2010). Some specific game examples include as well successful results for changing attitudes, as for example dealing with xenophobia and prejudices, which can be very important for professionals dealing with vulnerable people.

A key advantage of games based learning, which is particularly relevant for simulated practice, is that it can provide risk-free environments (Crookall, Oxford and Saunders, 1987; Griffiths 2002) when consequences are too costly or hazardous in real life (Kirriemuir and MacFarlane, 2004). Fontana and Beckerman (2004) highlight the point that with computer games "*students can instruct themselves, repeating simulations as often as they wish without the embarrassment of addressing somewhat sensitive issues.*" The possibility of making an error is normal in all areas of the curriculum, however with a simulated practice game there are no consequences outside the boundaries of the game environment. A 3D immersive, high fidelity environment can

contribute immensely to making the experience more realistic for the practitioners giving the highest degree of realism but still providing a risk-free environment (Hainey et al., 2014).

1. Theoretical overview - Knowledge, skills, attitudes and competences.

1. Knowledge, skills, attitudes and competences.

Since antiquity, **knowledge** has been defined as a complex and abstract concept, associated with personal experience and acquired mental models of understanding and processing facts and information within an application context. One of the popular definitions states that: “knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experience and information” (Davenport & Prusak, 1998). Moreover, knowledge is often described as “expectation or assumption about the reality, acquired through a number of trial and error experiences” (Bennet & Bennet 2006). Two main types of knowledge are identified: explicit knowledge, that can be easily articulated in a formal language and transmitted with electronic tools, and tacit knowledge, which is subconscious knowledge embedded in individual experiences, difficult to formalize and articulate, which is developed through a process of trial and error encountered in practice. In philosophy, epistemology and psychology knowledge is defined as “justified true belief” (TBL) attributed to Plato and cited in Ayer (1951), built upon personal mental models for understanding and assessing the world.

The overview of **skills** provided in Winterton et al. (2006), classifies several approaches to conceptualizing skills, extending the term from manual or motor skills to cognitive skills, perceptual skills, response selection skills, and problem-solving skills (Proctor and Dutta, 1995). Skills performance is one of the main focuses of research interest, making attempts to measure it with quantity and quality indicators. For example, Welford (1968) defines skills as a “combination of factors resulting in competent, expert, rapid and accurate performance, equally applicable to manual operations and mental activities”. Proctor and Dutta (1995) define skill as “goal-directed, well-organized behavior that is acquired through practice and performed with economy of effort”. EC (2010) determines skills as the ability to use knowledge and know-how to complete a task or solve a problem, whether in a professional or learning context, in personal or social life. Seamster et al. (2000) propose a framework for a hierarchy of skills, putting in the first place strategic skills, then decision-making skills, representational skills, procedural skills, and automated skills. This approach can be applied in analyses of specific tasks, defining what type of skills are required to take decision and help to differentiate novice from expert.

As a general definition, **attitudes** manifest themselves in the positive or negative beliefs and feelings about an object, an individual or a group. However, attitudes have behavioral components as well (Eagly and Chaiken, 1993). Attitudes are adopted through operant, classical and social learning - they are not innate. They remain stable and durable characteristics of people that motivate important behaviors. Luckily, psychological research shows that attitudes can be changed. Role-playing is one of the leading attitudinal change techniques. If people are included in role-playing and are asked to sincerely advocate the attitude position of another person (or a group of people), then the result will be a changed attitude (Zimbardo and Ebbesen, 1969).

Finally, the term **competence** is mainly used in the context of employment and can include job-related skills and abilities, combining both theoretical background, formal education and acquired experience. Competences can be at easiest defined as "the ability to perform activities to the standards required in employment, using an appropriate mix of **knowledge, skill and attitude**". The majority of definitions for competences include a combination of knowledge, skills and attitudes, within a specific working context. Bedek, Peterson and Heikura (2011) define competence as "specific, definable and measurable knowledge, skill, ability and/or other deployment-related characteristics (e.g. attitude, behavior, physical ability) which a human resource may possess and which is necessary for the performance of an activity within a work context". Trinder (2008) states that "competence is the ability to apply knowledge and skills to produce a required outcome". Moreover, competence is the ability to perform activities within an occupation to standards expected and recognized by employers and the community.

Based on the latter, a number of professional standards have been accepted and approved by professional organizations (or communities of professional experts). Thus to improve competence it is not enough just to increase the knowledge, but also the understanding of how that knowledge can be applied; the necessary **skills for applying it; and the attitude to apply it correctly within a specific professional context.**

Consequently, any document aiming at outlining the pedagogical grounds for developing a simulated practice environment in the course of acquiring professional qualifications in a given sphere should demonstrate what knowledge, skills and competences it develops. However, due to the more generic nature of the current one, this issue has been treated in depth and concreteness in the Curriculum document developed under the Digital Bridges project.

2. Underlying theories of learning.

Learning theories have evolved gradually throughout human history to reflect different stages, concepts and understandings about “what knowledge is” and “how knowledge is acquired”. The processes of learning and knowledge acquisition are complex and are discussed in different disciplines such as philosophy, cognitive and group psychology, sociology, informatics and many others.

Naturally, people associate learning to formal education processes and practices. Interestingly, Sawyer (2006) highlights that contemporary mass educational institutions and schools have been designed in the 18th and the 19th century, long before studies and research investigations about the specific aspects of how people learn. Thus, for traditional classroom practices, knowledge is considered as a collection of facts and procedures, and the goal of the educational system is to transmit these facts and procedures to the learner. Nowadays, the research on learning and knowledge acquisition is progressing and proposes many approaches focusing on how to conceptualize and organize learning in order to make it more efficient, effective and flexible.

In the context of present-day e-learning and technology-enhanced learning the following psychology-based learning theories are largely investigated (Hammond et al, 2001) - behaviorism, cognitivism, constructivism and social constructivism (Moedtricher, 2006; Hung, 2001; McLeod, 2003). Other researchers focus on the theory of “connectivism” and even come to “eclectism” to summarize that modern learning theories are going to convergence. Recent studies, for example De Jong (2013), are exploring new approaches to learning - “Learning by Design”, combining both principles of inquiry and collaborative learning, including learning about the domain knowledge, learning about the inquiry process, and learning about cultural aspects and cultural differences. Despite these newly emerging approaches, the basic learning theories can best illustrate how the process of learning and knowledge acquisition can be approached and understood as complex and context-related matter.

Below is a summary of the main characteristics of the above-mentioned learning theories which can help us understand the role of newly emerging technologies to enhance learning and competence acquisition in a simulated environment.

Behaviorism	<p>Learning is a function of an external stimulation; the learner responds on external positive or negative stimuli.</p> <p>The learner is essentially passive, the learner's mind is a "black box" and preliminary knowledge is not important. The process of learning is based entirely on external factors.</p> <p>Behaviorism has been proved useful for the development of some types of skills – especially those that can be learned substantially through reinforcement and practice.</p> <p>Some of the main contributors and supporters of this theory are J. Watson, I. Pavlov, B.F. Skinner, E. L. Thorndike, Bandura and others.</p>
Cognitivism	<p>This theory explores the cognitive capacity of the human mind and its ability to acquire knowledge. It investigates the functions of the memory, thinking and reflecting. It connects learning to previous experience and existing knowledge.</p> <p>The learner processes information according to their unique learning and cognitive style.</p> <p>Knowledge is interpreted as a schema or symbolic mental constructions and therefore learning is defined as change in a learner's schemata.</p> <p>Some of the main contributors include Gagne, Briggs, Wager, Bruner, Schank, Merrill, Reigeluth, Scandura and others.</p>
Constructivism	<p>This theory is based on the assumption that learners construct their own reality. The individual's knowledge comprises a complex model of prior knowledge and experiences, mental structures, reflection mechanisms to interpret objects and events. Learning is an active, contextualized process of constructing knowledge rather than acquiring it. People actively construct or create their own subjective representations of objective reality. New information is linked to prior knowledge, and thus mental representations are subjective.</p>

	<p>Each person has a different interpretation and construction of knowledge process. The learner brings past experiences and cultural factors to a situation.</p> <p>Originators and important contributors are Piaget, Dewey, Vico, Rorty and Bruner.</p>
Social constructivism	<p>This theory is based on Vygotsky's work, highlighting the role of the social environment and culture for reconstruction of knowledge. This way knowledge is constructed based on personal experiences and hypotheses that are supported in the environment. Learners continuously test these hypotheses through social negotiation.</p> <p>Among its important proponents is A. Bandura.</p>
Connectivism	<p>This theory states that the process of learning is not strictly fixed and occurs within nebulous environments. Learning can reside outside of learners (within an organization or a database) and is focused on connecting specialized information sets.</p> <p>The connections that enable learners to learn are more important than the current state of knowing.</p> <p>Thus knowledge that resides in a database needs to be connected with the right people in the right context in order to be classified as learning.</p> <p>Among its important proponents are G. Siemens and J. S. Brown.</p>

In recent years, learning theories have been considered not as competing, but as complementing approaches, combining in order to reflect specific learning situations and contexts. For example, Illeris (2003) proposes a comprehensive framework that combines the variety of learning theories appropriate for adult learning. He proposes a framework based on three main learning dimensions: cognition, emotion and environment, and is situated in a social context. In this framework, the (adult) learner as one who is in control of the learning situation.

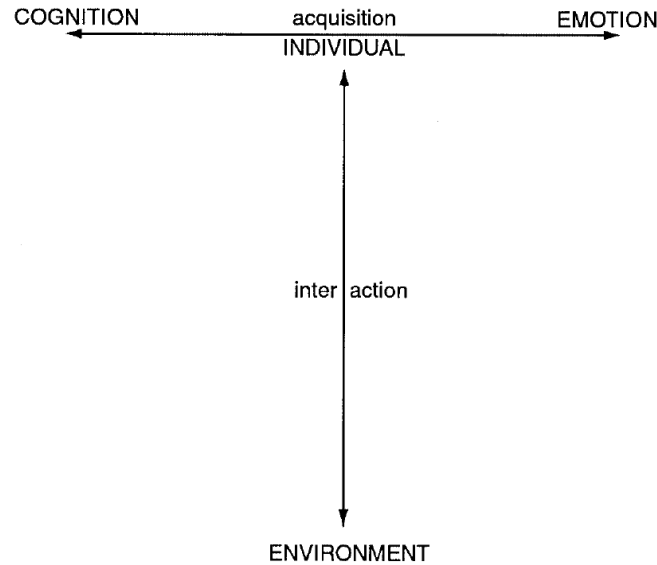


Fig. 1. *Dimensions of Learning according to Illeris* (See Illeris 2003)

Learning enables people to acquire knowledge and skills in order to cope with challenges and to make rational decisions. Moreover, learning forms attitudes, perspectives, insights, and understanding thus enabling learners to perform desired functions with proficiency, i.e. demonstrating a certain acquired level of competence.

Personal experience and method of trial and error represent a substantial component of learning and of knowledge acquisition. [Waterworth & Waterworth \(1999\)](#) outline some differences between perceptual and conceptual learning, pointing out that conceptual learning is theoretical and generalized learning about “there and then”, while perceptual learning concerns present “here and now”. Perceptual learning is closer to a learner and transforms faster the knowledge from conscious to unconscious (and thus to expertise, tacit knowledge).

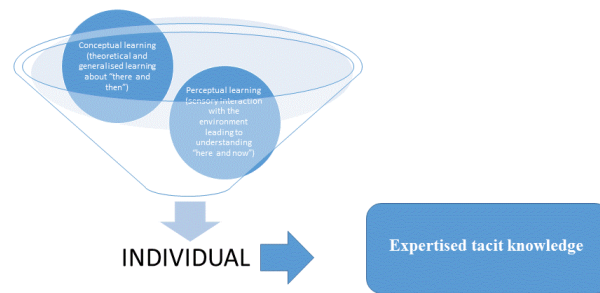


Fig. 2. *Types of learning according to Waterworth & Waterworth (1999).*

Thus the general learning process can be viewed as a process happening over three main phases: coding-retention-activating as illustrated below:



Fig. 3. *Phases of learning.*

However, this understanding of the nature of learning can be viewed as somewhat limited inasmuch as it presents learning as a linear process.

On opposite, Kolb's learning cycle proposes an alternative learning model, focusing on learning by doing and evaluation of learning experiences: gain experience - review of experience and reflection on outcomes and feedback (Kolb, 1994).

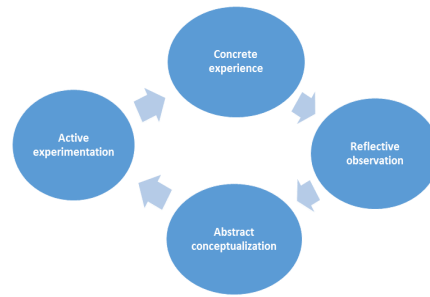


Fig. 4. *Kolb's learning cycle (1984)*

Kolb's model responds better to the fast changing environment and life-long-learning approach, where learning is problem-based, situational and experiential. Thus, the most powerful learning comes from direct experience (Senge, 2006), and proactive, experience-gaining learning based on reflective internalization of the experience provides a basis better than reactive and passive learning.

Consequently, a learning practice experience for social and healthcare workers who interact with vulnerable people which is based on Kolb's learning cycle is likely to promote a reflective approach to one's own learning and in general, to lead to the development of the desired professional competences.

3. Games based learning

1. Educational approaches and game-based learning.

Computer simulations and computer games allow people to be involved actively in educational processes. Thus the learner is not only an observer in the learning process (as compared to using other educational media), but can take part in a number of activities and decision-making learning from his own experience and own participation in the process.

When discussing the concepts of learning theories and knowledge acquisition, with new emerging media such as computer simulations and games the models of implicit knowledge construction should be taken into consideration especially bearing in mind the task to define the pedagogical

constraints on practice learning for social and healthcare workers which combines simulation and gameplay. Thus the Social Cognitive Theory (Bandura, 2001) postulates that the social mechanisms of cognition and the social origins of thought are the mechanisms through which social factors influence knowledge acquisition. Accurate thinking or implicit knowledge acquisition needs application of validation mechanisms. Four different thought verification and validation models have been proposed: *enactive verification* (fitting between thoughts and direct experience), *vicarious verification* (observing other people's transactions and their effects), *social verification* (people evaluating the soundness of their views by checking them against what others believe) and *logical verification* (deducing from knowledge that is known) (Bandura, 2001).

Observational learning or models of vicarious and social verifications enable people to acquire implicitly (unintentionally) new knowledge without having direct experience or applying direct cognitive rules. Bandura claims that observational learning allows media to transmit new ways of thinking and behavior simultaneously to countless people in widely dispersed locales. During the course of their daily lives, people have direct contact with only a small sector of the physical and social environment. Thus, their conceptions of social reality are greatly influenced by vicarious experiences – what they see, hear and read, without direct experiential correctives. To a large extent, people act on their images of reality. The more people's images of reality depend on the media's symbolic environment, the greater is its social impact.

Observational learning influences the adoption of rules that can be used to judge the reality or to generate new instances of behavior. Thus implicit knowledge construction with observational learning, can make games effective mechanisms to develop new ways of thinking and new learning behaviors. Acquisition of generative rules from modeled information involves three main processes – extracting generic features from various social exemplars, integrating the extracted information to composite rules, and finally using the rules to produce new instances of behaviors. Through abstract modeling, people acquire standards for categorizing and judging events, linguistic rules of communication, thinking skills and personal standards for regulating motivation and conduct.

2. Games based learning and serious games

Games are genuinely used in educational process, as they allow learners to acquire knowledge and skills in a more natural, close-to-the context environment, in a playful and less-stressful manner. They are often associated with fun providing not only different kinds of knowledge /

competence / skills acquisition, but they allow people to interact, to socialize, to explore and test the reality and others.

There are many definitions of games based learning, often overlapping or extending the terms of e-learning, “edutainment” (coming from *education* and *entertainment*), serious games, video-games and games based learning (Susi et al., 2007; De Freitas, 2008).

Serious games are commonly described as (digital) games used for purposes other than mere entertainment or fun. They usually refer to games used for **training**, advertising, **simulation**, or education that are designed to run on personal computers or video game consoles. Nowadays the emergence of sophisticated mobile applications proposes even more dynamic mobile gaming experiences. Thus serious games increasingly gain popularity in education and business, entertainment and research.

A substantial difference between games and computer simulations should be noted. Computer simulations as opposed to educational games provide less involvement of the end-users (learners). Computer simulations have a strong educational value, concerning observational learning and illustrating complex relationships. However, the level of involvement of learners in computer simulations is much less important for knowledge acquisition processes.

The logic of serious games (SGs) and training simulations is to develop **complex scenarios**, where learners can develop skills coping with a number of challenging situations. In serious games Kolb’s learning cycle (Antonova & Todorova, 2010) is adopted, where learning is developed through a number of trial-and-error situations. Building successful serious games includes the synchronization of multiple elements (game mechanics, appealing graphic environment, engaging scenarios), and therefore achieving a good mix of learning elements can prove very difficult. Moreover, expert knowledge should be incorporated in good quality and form within the game scenarios and game elements in order to form a learning path. So expert knowledge is crucial in making learning simulations useful for and meaningful to learners, and to put them in situations where they can substantially build new skills. On the other hand, the design of a serious game should fulfill several objectives, namely to transfer knowledge, to develop skills and desired attitudes at the same time remaining enjoyable and engaging the personality of the player.

Serious games are playful, engaging and interactive alternatives to more passive media. They are context-related and involve learners in the educational content thus leading to a successful

and rich learning experience. Below are some important characteristics of serious games as further identified in (Antonova & Martinov, 2010).

- Learners become creators and have control over the play.
- Learners get more responsibilities and develop social skills.
- Learners fully engage with their role in the game.
- SGs provide tools for self-expression and improve computer literacy.
- SGs enable learners with physical and communicative needs, make passive learners more active.
- SGs remove barriers for learners with difficulties in traditional learning.
- SGs allow collaboration and sharing of knowledge.
- SGs better illustrate some concepts of complex processes.
- SGs implement specific context and relationships, not achievable in traditional learning setting.
- SGs provide a high degree of entertainment.

Investigating different learning processes, occurring in serious games the following learning models can be identified.

- *Learning by exploring* - learning through exploration is a type of experiential learning facilitating both knowledge acquisition and the synthesis of contextual and situational knowledge.
- *Learning by collaborating*. SGs support learning in collaboration and team-work or learning collaboratively as opposed to learning competitively.
- *Learning by being*. SGs enforce learning by exploration of self and of identity. Assuming different identities can enlarge an individual's perception of situation, leading to improved cognitive and communication skills.
- *Learning by expressing*. SGs can facilitate the development of expression competences, externalizing experiences from games and simulations to the real world.

The observed learning models are usually adopted in combination, meaning that learners get complex experiences while exploring, communicating and role-playing within specific learning scenarios. This comes to show that SGs support mainly **active learning**, requiring learners to be involved in the educational activity, rather than receive information in an explicit form. In SGs learners play the leading role in the learning process as they are involved in complex open-ended

cognitive activities. Trainers' role transforms from one of knowledge providers to those of advisers and facilitators, guiding and helping students.

As discussed above, serious games can be applied in many different contexts. The elements of SGs include: a back story (scenario), game mechanics (specific physical functions and actions within games), rules (constraints in the game play), an immersive graphic environment (including 2D/3D graphics, sound, and animation), interactivity (impact of player's actions on the game), and challenge / competition (the "heart" of any game – competition against the game, against oneself, or against other players).

3. Cognitive skills and knowledge, and skills transfer while playing serious games

Serious games can be applied in many different contexts. The elements of SGs include: back story (plot / story line), game mechanics (specific physical functions and actions within games), rules (constraints in game play), immersive graphic environment (including 2D/3D graphics, sound, and animation), interactivity (impact of player's actions on the game), and challenge/competition (the "heart" of any game – competition against the game, against one's self, or against other players).

SGs have a prewritten set of actions (scenario) that player must accomplish in order to get some positive result, following predefined rules and constraints. Usually players can get help and instructions and are "assisted" while playing the game. Many SGs provide feedback and analyses of game results, so that players can better understand their performance and improve it. SGs are often displayed in appealing graphical environment and propose an amusing back story. This makes SGs suitable for learning purposes especially in active learning (focusing on the learner), for testing competences and skills, developing critical thinking, testing scenarios, profiling, self-learning and others. As a downside, SGs cannot easily integrate theoretical knowledge. Thus, on many occasions, SGs are accompanied by standard e-learning tools and knowledge bases. However, SGs are very successful in employing drama, storyline, humor and characters to create a compelling experience which, from a training point of view, develops memory hooks and means that learners not only remember what happens but also why it happens.

Many learning organizations focus on SG as an appropriate technology in improving educational processes. It is admitted that new generations (digital natives) prefer receiving information quickly from multiple multimedia sources, are capable of parallel processing and multitasking, tend to

process pictures, sounds, and video before text, randomly access hyperlinked multimedia information, interact/network simultaneously with many others, learn “just-in-time” only relevant, instantly useful knowledge and prefer fun.

Since SGs provide a stimulating environment which impacts on the knowledge and skills acquisition as well as on the adoption of desired behaviors and attitudes, it seems self-evident that serious games provide a natural environment in which to learn the necessary skills for complex work. Combining a complex simulation environment with a specially designed serious game can be therefore considered extremely suited to practice learning especially when the latter is connected to experiencing situations that are impossible or difficult to achieve in the real world for reasons of safety, cost, time (Corti 2006, Hainey et al., 2014).

III. Pedagogical Framework for Development of Simulated Practice Learning for Vulnerable People

1. Defining the knowledge, skills and competences for social workers who interact with vulnerable people to be developed through a simulated practice

Social and pedagogical work viewed in a professional context is a complex phenomenon which combines a number of activities, functions, professional roles which are generally aimed at supporting people in their coping with difficult life situations and their strive for successful functioning in society. Its main aim is to satisfy the socially guaranteed as well as the personal interests and needs of people from different social strata. In this sense it can be discussed as an integrative activity targeting society as a whole. On the other hand, it can be seen as an activity which targets a smaller social group or an individual in a difficult situation (Pavlenok, 2010: 32).

Professional competence in the context of social and pedagogical work is a realization of a complex of theoretical knowledge, practical skills and personal qualities and attitudes. Practicing social work requires solid theoretical and methodological knowledge about social realities, methods, means and forms of social and pedagogical work, personal development, features of different social groups, the legal basis for carrying out social work, etc.

Another important aspect is the presence of specific practical skills to ensure the acquired knowledge is put to practice. These skills are also complex and diverse: to understand the reasons for an existing situation or demonstrated behavior; to make an accurate and objective diagnostic or judgment, to offer adequate support and help, to create relationships based on mutual trust and respect, to work in a team, to administrate and manage the processes, etc.

The effectiveness and success of a professional is closely related to their personal qualities. Such qualities necessary for functioning as a social worker or a social pedagogue include psychological and emotional stability, analytical and critical thinking, creativity, initiative-taking, responsibility, honesty, openness, resourcefulness, discreteness, etc. No less important is the place occupied by the attitudes of the individual central to these being humaneness, a sense of belonging to society, etc (Sapundzhieva, 2011: 20).

2. Proposed pedagogical framework

Thus a pedagogical framework for the development of a simulated practice aimed at social workers dealing with vulnerable people should take into consideration the above discussed theories of learning and the features of games-based learning and serious games.

It should also outline the relations between the broader social context, the particular educational setting and the learner, the trainer and the vulnerable person.

As postulated in the Curriculum Document developed under the Digital Bridges project, the proposed framework should make it clear that the following core features of the simulated practice are observed:

- Focus on the learner
- Accessibility
- Flexibility
- Reliability
- Transparency
- Consistency
- Quality assuredness

(Quality Assurance Agency for Higher Education Scotland; RPL HEI Network 2013)

Pedagogical Framework for Simulated Practice for social workers dealing with vulnerable people

The different areas of the framework are in a complex relationship of dynamic mutual dependence.

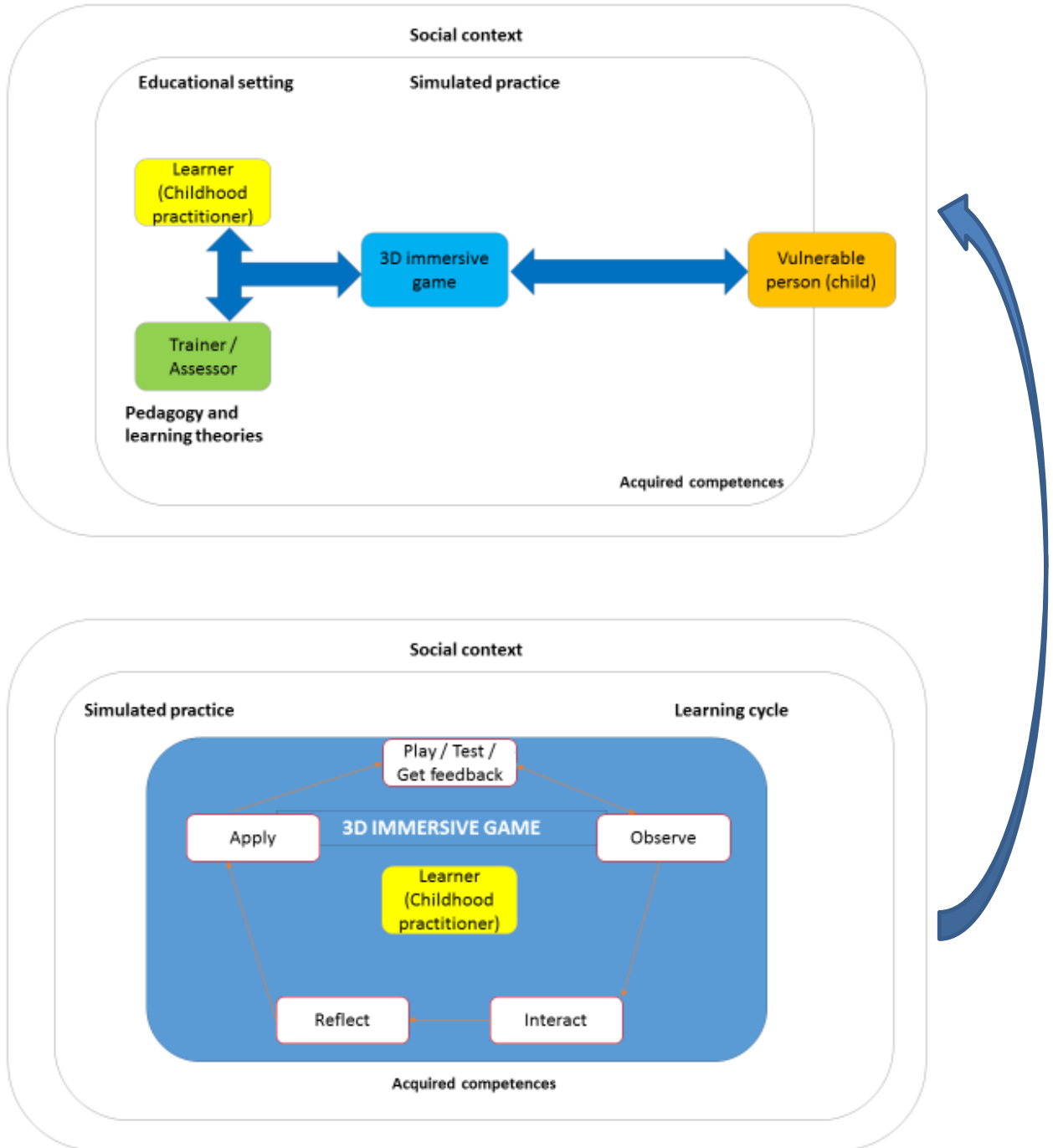


Fig. 5. Proposed Pedagogical Framework for Simulated Practice for social workers dealing with vulnerable people

Part One

Social context

The outermost layer of the framework refers to the social context which defines in practice what part of society should be considered in a vulnerable position and regulates how this part of society should be treated, taken care of, interacted with, etc.

Educational setting

The next area of the framework refers to the educational setting where the educational setting is the setting in a VET, HE or further education institution or training provider which deals with initial and / or in-service instruction and development of specialists working with vulnerable groups.

Simulated practice

The simulated practice is one contained in the educational setting and corresponds to an institution's established modes of training and instruction delivery as well as to the set learning and assessment targets.

Acquired competences

The acquired competences of the practitioner dealing with vulnerable people are an equally important part of the second area of the framework. On the one hand, they should be seen as the result of the established rules and patterns of teaching and learning at the particular educational institution. On the other, they are closely related to setting learning and assessment targets (all of which informed by the broader social context). Last but not least, the acquired competences allow a practitioner working with vulnerable people not only to be successful in completing their practice training but also in doing their job of interacting with vulnerable people in the broader social context.

Any change in the social context leads to a change in the educational environment, the simulated practice and the acquired competences.

The acquired competences which should be aimed at are defined in view of all the above and in close relation to the "end-participant" in this complex set of relationships, which in our case is a vulnerable person. Thus there is no invariable set of competences but they change according to the social context (including the current legal constraints), the educational institution and the concrete profile of the vulnerable group. For instance, in the cases where the vulnerable person is a child, the set of competences has been defined as belonging to one of the three groups below:

a) Communication

- know how to adapt the way you communicate
- understand ways in which children may use play to communicate
- know how to support children to cope with their feelings

b) Well-being and Resilience

- understand ways to encourage emotional well-being, confidence and resilience
- understand ways of encouraging children to make choices, whilst at the same time making them aware of how their actions can affect others
- know how to adapt your practice to ensure that all children, can take part equally

c) Health and Safety

- understand different kinds of incidents and emergencies that might arise in a childcare setting
- understand how to support children during an emergency
- understand how to summon assistance appropriate to the emergency.

(Digital Bridges, Curriculum for Simulated Practice Learning for Social Workers who Interact with Vulnerable People)

Pedagogy and learning theories

The preparation of the simulated practice learning and the game design are informed by the pedagogies discussed in II.2 of the present document. The theories of learning refer to the schools of thought or philosophies discussing how people learn and how learning is supported by teaching. The relevant pedagogies make it clear how the immersive game and the simulated practice should be planned and carried out so as to achieve outcomes pertinent to the particular social context.

3D immersive game

Within the context of the simulated practice learning, the focal point of interaction between a Learner, a Trainer and a Vulnerable Person is the 3D immersive game.

The game should be constructed according to the specifics of games-based learning outlined above and will be viewed in greater detail in the presentation of the second part of the Framework. Most notably, the Game has to be emotionally engaging, allowing the learners to experience real-life situations involving vulnerable people and take decisions about their own actions under such circumstances. According to the cognitive task analysis done under the Digital Bridges project (see “An Immersive Games Approach to Human Services”) it should also be visually appealing and not challenging in a technical respect thus making it non-dependent on the users’ (learners’) technical skills.

The Game is based on **game scenarios** which in turn are based on real-life situations involving interaction with vulnerable people. They should aim at developing specific competences for the learner in order that he/she is able to:

- recognize specific situation while interacting with vulnerable people
- identify specific set of activities – what to do/what not to do;
- develop skills and attitudes how to interact with vulnerable people in specific situations (risk settings);
- train competences to cope with critical incidences.

The **Non-player characters** (NPCs) take part in the game and interact with the player, as part of the scenario, in order to:

- provoke specific actions from the player;
- provide information and give instructions;
- give feedback
- give advice;
- provide help;
- simulate different stakeholders.

The **Knowledge objects** represent game elements that are available for the learner through the game. These can include instruction guides that can be available during the game, some reference web sites, instruction video, help button or panic button, etc.

An important feature of the Game may be the inclusion of **quizzes, puzzles, games-in-the-game**, such as:

- pre-tests and post-tests;
- gaining points for the game;
- passing from level to level, etc.

The Game may confront learners with **critical incidents** which usually are rare events but

- need professional attitude;
- aim to provide training and prepare the learners for action in specific cases.

All the above are developed and work together in a way that ensures the achievement of certain predefined learning goals, the acquisition of particular professional competences, etc.

The learner

The learner is any person involved in simulated practice learning at a pre-service, in-service or continuous professional development level delivered by a HE, VET institution or an institution providing informal education for social workers and practitioners dealing with vulnerable people.

The learner is actively involved in the learning process and through the immersive game is able to experience different situations of interacting with vulnerable people, requiring him or her to evaluate the situations, the possible consequences of all participants' actions, the impact on the vulnerable people involved and the effect on society as a whole. In addition to playing the Game, the learner keeps a reflective journal where he/she records thoughts, ideas and questions about the game scenarios and actions taken during the game.

They participate in further pre or post-playing game-driven and in reflective activities, set up by the Trainer in accordance with the concrete learning aims and the social context as a whole.

The trainer

The trainer interacts with the learners through the 3D immersive game and plays the roles of an observer, a resource, a provider of feedback and an assessor. The trainer can decide to intervene during the game play or to remain silent and offer advice and support only if asked by the learner. He / she can also guide the learning process by asking probing questions before or after the game play or by following and giving feedback to the reflective journals kept by the learners.

The vulnerable person

The vulnerable person (child in the case of the Digital Bridges project) is part of the NPCs (non-playing characters) in the game. The learner gains knowledge of, develops his / her skills in and builds professional competences of real-world situations by interacting with vulnerable people represented in the Game. Ultimately, the aim of playing the 3D immersive game is to prepare learners to interact successfully with vulnerable people from a professional point of view.

Part Two

This part of the Pedagogical framework for simulated practice learning for social workers who interact with vulnerable people focuses in greater detail on the process of learning realized within the simulated practice.

It is suggested that the process is viewed as a cycle of interconnected stages, each building on the previous one and leading to the next one in a spiral sort of development.

To emphasize on the fact that learners are active during the simulated practice, in the graph, the stages of the learning cycle are expressed using verbs.

Observe

Within the immersive 3D game learners have the opportunity to observe the relations between the settings, the vulnerable person, the actions of the players and the NPCs.

Interact

Learners are also immersed in communicating verbally and non-verbally with players and the NPCs applying what they have acquired while taking in (observing) the environment.

They may also interact with their trainers and ask them for help or consider their feedback in order to achieve better results in the game.

Reflect

Then the experiences of observing and interacting within and outside the game scenarios are reflected on, conclusions regarding own performance as well as acceptable / unacceptable behaviors, successful / unsuccessful or desirable / undesirable interaction with vulnerable people are drawn.

Reflections are registered in the provided reflective journal space and are shared with trainer(s).

Apply

The above-defined conclusions are applied in new game scenarios, next game levels, knowledge objects such as tests, quizzes, etc., finally leading to acquiring the desired professional competences in a safe yet realistic environment

Assessment

The assessment carried out during the simulated practice learning may be of the following types:

- ongoing - while-playing;
- final: on game completion;

- self-assessment;
- peer-assessment;
- trainer-assessment;
- formative (feedback) assessment;
- formal assessment.

It is done using the following methods of assessment: tests, quizzes, portfolio notes, focus-interviews, solving critical incidents, etc.

Conclusions

In summary, the current document presents the theories of learning which bear reference to creating the conditions for and carrying out a simulated practice for specialists dealing with vulnerable people. It discusses some of the most important features of games-based learning. Most importantly, it proposes a Pedagogical Framework which takes all the above into account and can serve as the basis for development of curricula, learning materials (including simulations and games), training materials, etc. aimed at developing the professional competences of those involved in working with vulnerable people.

Relevant references to other documents developed under the “Digital Bridges” project are made thus exemplifying the above statement. Although developed under a particular project the proposed Framework is generic and can be used in a variety of learning, training and research settings across Europe.

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