



*For the things we have to learn before we can do them,
we learn by doing them*

- Aristotle, *Nicomachean Ethics*, Book 2, 350 BCE

A GAME IS A GAME IS A GAME

PEDAGOGICAL GUIDELINES SERIOUS GAMING

Jumbo Klercq



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Project Leader:
Address:
Phone:
E-mails:
Web:

CVO Antwerpen
Distelvinklaan 22, 2660 Hoboken, Belgium
+32 3 830 41 05; +32 3 369 06 90
list@sg4adults.eu; projects@cvoantwerpen.be
www.cvoantwerpen.be

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WHAT IS A SERIOUS GAME

DEFINITION

A **serious game** or **applied game** is a game designed for a primary purpose other than pure entertainment¹. The "serious" adjective is generally prepended to refer to products used by industries like defense, education, scientific exploration, health care, emergency management, city planning, engineering, and politics². Serious games are simulations of real-world events or processes designed for the purpose of solving a problem. Although serious games can be entertaining, their main purpose is to train or educate users, though it may have other purposes, such as marketing or advertisement. Serious game will sometimes deliberately sacrifice fun and entertainment in order to achieve a desired progress by the player. Serious games are not a game genre but a category of games with different purposes. This category includes some educational games and advergames, political games, or evangelical games³. Serious games are primarily focused on an audience outside of primary or secondary education.

Games from different kind, but with common rules.

Many people think that serious games are the most modern, complex, high-tech games that are available. This is completely wrong. Videogames are just a natural growth of traditional games into a new medium. The rules that govern them are still the same as can be found in the very simplest games. Some of these will be videogames, but some will be far simpler. Dice games. Card games. Board games. Playground games. If we cannot understand the principles of these games, how can we have a hope of understanding more complex games? Some will argue that these games are old, but a game is a game is a game. The principles that make the classic games fun are the same principles that make the most modern games fun. The classic games have the added advantage that they have withstood the tests of time. Their success is not due to the novelty of their technology, which is the case with many modern games. These classic games have deeper qualities that we must learn to understand.

So, games, whatever kind they may be, have common rules⁴:

- Games are entered willfully.
- Games have goals.
- Games have conflict.
- Games have game rules.
- Games can be won and lost.
- Games are interactive.
- Games have challenge.

¹ Djaouti, Damien; Alvarez, Julian; Jessel, Jean-Pierre. "[Classifying Serious Games: the G/P/S model](#)" (PDF). Retrieved 26 June 2015.

² "[Serious Games](#)". [cs.gmu.edu](#). Retrieved 26 June 2015.

³ Ernest Adams (2009-07-09). "[Sorting Out the Genre Muddle](#)". [Gamasutra](#). Retrieved 2009-05-23

⁴ Jesse Schell, *The Art of Game Design, A Book of Lenses*, 2008

- Games can create their own internal value.
- Games engage players.
- Games are closed, formal systems.



from: *Raph Koster, Theory of Fun for Game Design, 2014*

- Play must be pleasurable and enjoyable.
- Play must have no extrinsic goals; there is no prescribed learning that must occur.
- Play is spontaneous and voluntary.
- Play involves active engagement on the part of the player.
- Play involves an element of make-believe.

Seven common characteristics of play are listed in *Playing and Learning*, by Beverlie Dietze and Diane Kashin: Play is active, child-initiated, process oriented, intrinsic, episodic, rule-governed and symbolic⁷.

In a game people often rediscover the pleasure of playing. For example:

- Looking for and finding a way to get more points than the other team.
- Searching and finding a way to get to the finish line before the other players.
- Struggling and finding a way to complete a level.
- Planning and finding a way to surpass the other player before he surpasses you.

Most important: **a game is something to play.**

Learning through play is a term used in education and psychology to describe how a child can learn to make sense of the world around them. Through play children can develop social and cognitive skills, mature emotionally, and gain the self-confidence required to engage in new experiences and environment⁵. Key ways that young children learn include playing, being with other people, being active, exploring and new experiences, talking to themselves, communication with others, meeting physical and mental challenges, being shown how to do new things, practicing and repeating skills and having fun.

In the book *Einstein Never Used Flash Cards*, five elements of playing are listed⁶:

⁵ *Human growth and the development of personality*, Jack Kahn, Susan Elinor Wright, [Pergamon Press, ISBN 978-1-59486-068-3](#)

⁶ *Einstein Never Used Flash Cards*, Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, [Rodale Inc., ISBN 978-0-08-023383-3](#)

⁷ Bergen, 2009 as cited in *Playing and Learning*, Beverlie Dietze, Diane Kashin, 2011, page 5, [Pearson Prentice Hall, ISBN 978-0-13-512546-5](#)

Play is not wasted time, but rather time spent building new knowledge from previous experience⁸. Games are worthless unless people play them. When people play games, they have an experience. It is this experience that makes sense, not the game.

In order for an activity to be considered play, the experience must include a measure of inner control, ability to bend or invent reality, and a strong internally based motivation for playing.⁹

A game enables the experience, but it is not the experience.

Experiential learning is the process of learning through experience, and is more specifically defined as "learning through reflection on doing"¹⁰. Experiential learning is distinct from rote or didactic learning, in which the learner plays a comparatively passive role¹¹. It is related to but not synonymous with other forms of active learning such as action learning, adventure learning, free choice learning, cooperative learning and service learning¹². Around 350 BCE, Aristotle wrote already "*for the things we have to learn before we can do them, we learn by doing them*"¹³.

One good thing about experiences is that we remember them. Analyzing an experience while it is happening can be hard, because the part of your mind used to analyze is normally focused on the experience itself. Analyzing your memory of an experience is much easier. Memory is imperfect, but analyzing a memory is better than nothing.

Thus learning from your mistakes is also experiential learning and that makes a *game also a problem-solving activity*. Game based learning is a branch of serious games that deals with applications that have defined learning outcomes. Generally they are designed in order to balance the subject matter with the gameplay and the ability of the player to retain and apply said subject matter to the real world¹⁴.

"Game-based learning" refers to teaching-learning actions carried out in formal and/or informal educational settings by adopting games. It encompasses the use of both games designed expressly for fulfilling learning objectives (educational games) and "mainstream games"¹⁵

A characterization of the term from a design perspective is:

- "1. Having learning driven by personally meaningful scenarios;
2. Constructing problems to extend previous understandings and shape future ones;
3. Paying close attention to users' pre-existing beliefs;

⁸ Isenberg and Quisenberry, 2002 as cited in *Thinking It Through: Teaching and Learning in the Kindergarten Classroom Playing is Learning*, page 12, [Elementary Teachers' Federation of Ontario](#), 2010

⁹ Bergen, 2009 as cited in *Playing and Learning*, Beverlie Dietze, Diane Kashin, 2011, page 5, [Pearson Prentice Hall](#), ISBN 978-0-13-512546-5

¹⁰ Felicia, Patrick (2011). [Handbook of Research on Improving Learning and Motivation](#). p. 1003. ISBN 1609604962

¹¹ Beard, Colin (2010). [The Experiential Learning Toolkit: Blending Practice with Concepts](#). p. 20. ISBN 9780749459345.

¹² Itin, C. M. (1999). *Reasserting the Philosophy of Experiential Education as a Vehicle for Change in the 21st Century*. *The Journal of Physical Education* 22(2), 91-98

¹³ *Nicomachean Ethics*, Book 2, [Ross](#) translation (1908).

¹⁴ Mathias Poulsen in <http://www.mathiaspoulsen.com/what-is-game-based-learning/>

¹⁵ Kirriemuir J., McFarlane A. (2004). *Literature Review in Games and Learning Report 8 : Futurelab Series*

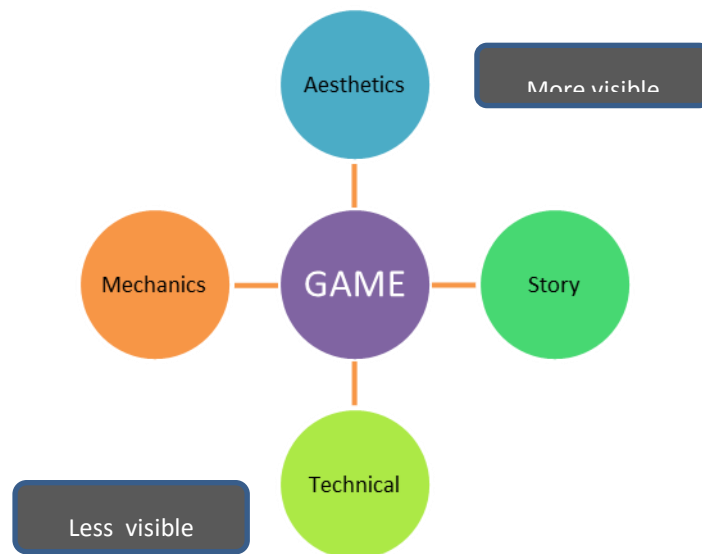
4. Carefully designing for what the user experiences from moment to moment; and
5. Situating facts and knowledge in the context of doing.”¹⁶

The definition of a good game is therefore “one that teaches everything it has to offer before the player stops playing.” That’s what games are, in the end. Teachers. Fun is just another word for learning. Games teach you how aspects of reality work, how to understand yourself, how to understand the actions of others, and how to imagine.

GAME ARCHITECTURE AND GAME DESIGN

A game is composed out of different elements (figure 1). Some are more visible, others less.

Figure 1 Based on Jesse Schell, *The Art of Game Design*, 2008



- **Aesthetics:** This is how a game looks, sounds, smells, tastes, and feels.
- **Story:** This is the sequence of events that unfolds in a game. It may be linear and pre-scripted, or it may be branching and emergent.
- **Mechanics:** These are the procedures and rules of a game. Mechanics describe the goal of your game, how players can and cannot try to achieve it, and what happens when they try.
- **Technology:** Any materials and interactions that make your game possible such as paper and pencil, plastic chits, or high-powered lasers.

Designing a game is a complex process. For trainers and educators it is important to understand this process if they want to use a game. Game design can be seen as an incredibly complex web of creativity, psychology, art, technology, and business. Everything in this web is connected to everything else. The game design expresses the quality of the connection (see figure 2). Changing one element

¹⁶ Squire K., (2005) *Game-Based Learning: Present and Future State of the Field*, coll. «An x-Learn Perspective Paper»

deeply, getting to know them better than they know themselves.

- You will need to listen to your **Game**. What does this even mean? It means you will get to know your game inside and out. Like a mechanic who can tell what is wrong with a car by listening to the engine, you will get to know what is wrong with your game by listening to it run.
- You will need to listen to your **Client**. The client is the one who is paying you to play the game, and if you don't give them what they want, they'll go to someone else who does. Only by listening to them, deeply, will you be able to tell what they really want, deep in their hearts.
- And last, you will need to listen to your **Self**. This sounds easy, but for many, it is the most difficult kind of listening. If you can master it, however, it will be one of your most powerful tools, and the secret behind your tremendous creativity.

The game design is indeed a complex process, in which each element is related to another one. If you change one thing, other things will be changed as well. You need to see what happens when you move something.

GAMES IN EDUCATION

The utilization of games in front of other pedagogical methodologies has many advantages¹⁸:

- Games have a great **motivating effect**. Very often, training is dropped because there is a lack of motivation but well-designed games achieve to engage the player so he/she will complete the training because he/she wants to achieve the final objective of the game. Motivation takes place because games have an uncertain outcome which will depend on the performance of the player so there is a component of uncertainty which triggers player's curiosity. Besides, the player gets instant feedback for his/her response.

The player takes an active role in the learning process and "while enjoying the game they don't realise they are learning". This makes learning fun, easier to follow and makes the learner to be more concentrated in the training. The secret to engage the player is that games combine contents offered in a new format, the player learns by actively participating and the game uses technics of gamification which "tap into basic human instincts and drivers and use them to encourage common behaviours".

- Games enable the user to experiment in situations **free of risk**, i.e. the player can make bad decisions which can have bad consequences but, as it is a game, there are not real damages. This is very helpful for activities or sectors where training in a real context is not possible due to the magnitude a mistake could bring on (for example, in medicine).
- **Knowledge gained by playing gets deeper into the player's mind** because "games fix knowledge through different channels and by different means, not only theory but also practice", and active participation.

¹⁸ *Compilation of game-based learning initiatives in professional environments, LPMNAGE PROJECT, (Ref. 527796LLP-1-2012-1-ES-LEONARDO-LMP) prepared by: INVESLAN*

- **Games help to train competences which would be difficult or even impossible to train with any other methodology** because the player can “work at the attitude level, not just content learning”. Moreover, “games allow assessing the level of development of those competences with objectivity”. This is particularly true when talking about competences such as effective communication, intercultural communication, leadership and many other social skills which, with a theoretical or not participative approach, cannot be effectively trained. Allowing interaction, even if it is just done in a virtual way, these competences are much more efficiently trained. The potential of social games in this sense is, of course, greater because they are based on interactions among different players. Participants can have interactions with each other and use the power of the group to solve the task or problem or face to each other to prove their competences and skills.
- Games which can be used out of a class context also allow greater **flexibility**, as they can be used at any time and the player can learn to her/his own speed. This is very important when talking about games addressed to professionals, who normally need high flexibility so training can be adapted to their working hours.
- Serious and social games always teach to “**learn how to learn**” and when they are available using digital media, they also train **ICT skills**. In addition, another advantage of social games in particular is that they help to train **teamwork** and make aware the player that working in synergy helps to develop new ideas. As stated in one of our national reports, “the real power of social games is their virality and that as much derives from the intrinsic satisfaction a player experiences in the games as from the incentive to outdo a friend or colleague”.
- In the particular case of social games, they have the added value of the **social interaction** produced among the players, which helps to improve social skills and also contributes to create a sense of community, bringing people together in an inclusive environment, either looking for a common goal or competing to get a better position.

There is some evidence that gamification works¹⁹. Learners recall just 10% of what they read and 20% of what they hear. If there are visuals accompanying the oral presentation, the number rises to 30%, and if they observe someone carrying out an action whilst explaining, this improves to 50%. But gamification works by providing real-life immersive scenarios, engaging the learner and enabling them to practice the application of new skills and knowledge in a safe environment. Learners remember 90% of information when they do the job themselves, even if this is only a simulation.

Here are some statistics of what learners think about gamified content²⁰:

1. Almost 80% of learners say they would be more productive if their university/institution was more game-like.
2. Leader boards and increased competition between students would motivate over 60% of learners.

¹⁹ Joshua Robert, [Josh's gamification guide: how to get the most from game-based learning in your organisation](#). Kallidus, 2015

²⁰ Pappas, C. (2014). *The Science and The Benefits of Gamification In eLearning*. eLearning Industry

3. 89% would be more engaged in their e-learning if it had a points system.

PEDAGOGICAL APPROACH

The pedagogical potential of games is, indeed very high, **especially to train soft skills and transferrable competences** that's why games are a good complement for other training methodologies more oriented to the acquisition of knowledge or as a way to develop particular skills or competences applied in a certain field. For example, in the professional field, games are mainly used in "sectors and professions where communication and dealing with other people is highly important" for their special **usefulness to train interpersonal and social skills**. Also in the health sector games have been quite used because of their possibilities of training in a free risk context. The best pedagogical approach will depend on which is the objective of the training, and sometimes the best option will be a combination of both.

It is clear that social and serious games have a lot of strong points which make them worthy to include as part of the training systems to develop professional competences. However, it is also necessary to bear in mind that the use of games also have weak points which need to be considered to try to minimize them:

- Sometimes the player is **not able to recognize which skills or competences she/he is training**, *the message of the game has to be clear*. In this sense, it is very important that the game gives proper feedback to the player when finishing an activity, or getting a good/bad score to make him/her realize what he/she is training and what he/she has learnt. To keep motivation up, it is very important that this feedback is always provided in positive terms, avoiding highlighting the negative aspects of the player's performance.
- **Games cannot cover all**. Actually this statement has been much debated during our research and there are many different opinions in this regard. However, in general trainers, game developers and integrated professional management professionals think that games are more effective when used as a complement of a wider training, because "*not all contents and goals can be covered with a game*", "*games can be an effective part of a training mix in a learning programme but not alone*" and "*games based tools are normally just one part of the learning solution and needs to be delivered as part of an overall strategy*".

As stated before, the pedagogical approach will depend on WHAT we want to train and to WHOM the training is addressed. For example, in the field of Integrated Professional Management, professionals have mainly developed their competences through experience so the pedagogical approach must be oriented to put the player into different situations of real life so at least he/she will develop the necessary competences to overcome them. Anyway, we can establish some general criteria that any serious game should have in order to guarantee an effective pedagogy.

- The game has to be **motivating**. One of the best points of using serious games to train is their ability to keep the player engaged so he/she will not give up on the training. But this is not an intrinsic characteristic of games, they need to be designed having this objective in mind and to be motivating they need to **be fun, user friendly, break formality** associated to training and **make the learning process short**.

- There must be a **balance between gaming and learning**. It is true that the game has to be fun so it will be motivating but it also has to be bore in mind that the purpose of the game is to train and fun elements are just included to engage the user in the training process. So the game needs to be fun to keep the player motivated but at the end of the day the player must have learnt something.
- The **benefits of training have to be clear and the player has to be aware of the skills or competences he/she is acquiring**, which can be solved by providing adequate feedback.
- The focus should be put on a **“few meaningful key learning objectives”**, in order to avoid dispersion and confuse the player. If we try to train a lot of skills/competences at the same time we could end up with a game that just touch every of them just slightly and the training would not be effective.



Pedagogical approach

LEARNING NEEDS: YOU'RE GAME WILL PROBABLY HAVE PARTICIPANTS

EXPLORING AND ANALYSING LEARNERS NEEDS

To really give your participants what they want and what they need, you have to understand what is important to them — you have to care about what they care about, and think how they think. Doing your homework to learn about the target audience, both personally and professionally, is time well spent. Do they care more about striking it rich quickly, or slowly building a reputation? Are they looking to get into a new market, or to capitalize on an existing one? What do they think makes a good game? You can learn a lot about your future participants just by talking to them and asking what they want — but keep in mind that people don't always tell the truth. When trying to figure out what a participant wants, keep in mind that everyone has three layers of desire: words, mind, and heart.

Games are one of many activities that people engage in to try to maintain and control their mood and emotional state. People play games to try to

- **Vent anger and frustration.** Games, particularly sports involving a lot of physical activity (football, basketball) or videogames involving a lot of fast action and battles, can be a cathartic way to “take out your feelings ” on someone else in the safe world of the game.

- **Cheer up.** When a person is depressed, whimsical games with funny situations (e.g. Angry Birds) can be a way to take your mind off your troubles, and remember that you can still have fun.
- **Gain perspective.** There are times when our troubles loom large on us, and little things seem like they are the end of the world. Playing games gives us some distance from our real-world problems, so when we return we more easily see them for what they are.
- **Build confidence.** After a few real-life failures, it is easy to start to feel like you aren't good at anything, which can lead to a feeling that everything in your life is beyond your control. Playing a game where your choices and actions can lead to a successful outcome can give a feeling of mastery that helps remind you that you can succeed, that you have some control over your destiny.
- **Relax.** Sometimes we are simply unable to let go of our worries, either because of their size or their sheer number. Games force our brains to engage with something completely unconnected to our worries, letting us escape them for a while, and giving us a much needed "emotional rest".

Consider what makes your game attractive for your participants. Adults will not primarily play for pleasure and fun in a course. They play a game when they understand and feel that they can learn something more by playing it. However, if they feel treated as a child they will not feel seriously be treated and resistance against the game of against the trainer will arise. So, the content, the story in or behind the game is very important to maintain the motivation. A game on entrepreneurial skills needs to go about entrepreneurship. Participants should understand the relevance because they see coincidence with the reality of entrepreneurship. The story has so to say to speak for itself. One has to avoid that people are questioning how (elements of) the game has been related to real life.

Naturally it is also a matter of explanation and instruction (how do the game rules for instance anticipate on entrepreneurship?), so the trainer should makes links to the real world of entrepreneurship as much as possible.

Before starting, keep the following things in mind²¹:

- Consider your objectives, how can you split these up into manageable bite-sized chunks for learners and give them a safe environment to practice that information?
- Brainstorm ideas and the creative treatment for how you can portray your overall vision.
- Understand your learners – what will engage them? Some people love fantasy games, other people will be really casual players who only use apps. Ensure that you develop something that hits the cross-section of learners.
- Games do not have to be complex or difficult; using branching scenarios is one of the best ways to begin gamifying content.

²¹ Joshua Robert, [Josh's gamification guide: how to get the most from game-based learning in your organisation](#). Kallidus, 2015

- Think about the content and the narrative and, to engage learners from the start. Always try to include some of the things that are unique to the culture of the organization. Every workplace has a wealth of interesting facts, statistics, anecdotes and workplace stories to tell. Think about how you can incorporate them into your work.

It is also important to be aware of the knowledge, skills and behaviour that participants need in reality. The more you know this you can make references between what they meet in the game and how this fits in into reality as well. Simultaneously as a trainer you should have an impression about how experienced, knowledged and skilled your participants are. It is important that you can address their capabilities as well in the game as in reality. If you are not familiar with them, it might be good to start with some talent management exercises to get an idea about what they are able and capable to.

LIFECOURSE APPROACH

The **life course approach** (see figure 4), also known as the *life course perspective* or *life course theory*,

The Life Course Cylinder – Identifies the relationship between individuals and the influences which affect them throughout their life, from the immediate family to the wider society.

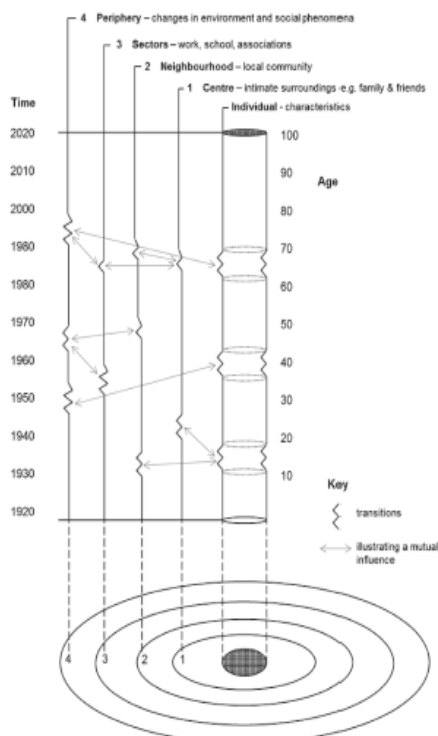


Figure 4 The Life Course Cylinder, J.Klecq and K. Penninx, 1990

refers to an approach developed in the 1960s for analyzing people's lives within structural, social, and cultural contexts. It examines an individual's life history and sees, for example, how early events influence future decisions and events such as marriage and divorce, engagement in crime, or disease incidence. A life course is defined as "a sequence of socially defined events and roles that the individual enacts over time". In particular, the approach focuses on the connection between individuals and the historical and socioeconomic context in which these individuals lived²²²³. Life course theory, more commonly termed the life course perspective, refers to a multidisciplinary paradigm for the study of people's lives, structural contexts, and social change. In particular, it directs attention to the powerful connection between individual lives and the historical and socioeconomic context in which these lives unfold. The life course can be

²² Elder, Glen H.; Monica Kirkpatrick Johnson and Robert Crosnoe: *The Emergence and Development of Life Course Theory*. In: Jeylan T. Mortimer and Michael J. Shanahan (ed.). *Handbook of the Life Course*. Springer, 2003, [ISBN 0-306-47498-0](https://doi.org/10.1007/978-1-4020-0822-3), pp. 3–19.

²³ ["Life Course Theory - Historical Development, Key Principles And Concepts, Selected Research Applications"](#). Retrieved 2009-07-29

theorized as based on five key principles: life-span development, human agency, time and place, timing of decisions, and linked lives²⁴. As a concept, a life course is defined as "a sequence of socially defined events and roles that the individual enacts over time"²⁵. These events and roles do not necessarily proceed in a given sequence, but rather constitute the sum total of the person's actual experience. Thus the concept of life course implies age-and generation differentiated social phenomena distinct from uniform life-cycle stages and the life span. Life span refers to duration of life and characteristics that are closely related to age but that vary little across time and place.

In contrast, the life course perspective elaborates the importance of time, context, process, and meaning on human development in relation to family life, community, labour market and society as a whole. It can be seen as a "collection of individuals with shared history who interact within ever-changing social contexts across ever increasing time and space"²⁶. Because ageing and developmental change, therefore, are continuous processes that are experienced throughout life, they can also be seen as learning processes. De facto, trainers should have eyes and senses for what participants have been learned during their life span as well what they have learned from what has happened in their life. There is a strong connection with biographical learning and storytelling techniques, the figure and ground of experience and its stories, foregrounding how time, sequence, linearity, and related concepts are used in everyday life.

EMPOWERMENT

This approach refers also to **empowerment**, policies and measures designed to increase the degree of autonomy and self-determination in the lives of people and in communities in order to enable them to represent their interests in a responsible and self-determined way, acting on their own authority. Empowerment refers not only to the process of self-empowerment, but also to professionals like trainers and coaches, who support of people, which enables them to overcome their sense of powerlessness and lack of influence, and to recognise and eventually use their resources and chances. Empowerment as a concept, which is characterized by a move away from a deficit-oriented towards a more strength-oriented perception, can increasingly be found in management concepts, as well as in the areas of continuing education and self-help.

Empowerment can be defined as the capacity of individuals, groups and/or communities to take control of their circumstances, exercise power and achieve their own goals, and the process by which, individually and collectively, they are able to help themselves and others to maximize the quality of their

²⁴Furlong, Andy. "Youth Studies: An Introduction." Routledge, 2013, p.6-7.

²⁵ [Janet Z. Giele](#) and Glen H. Elder Jr., (eds) *Methods of Life Course Research: Qualitative and Quantitative Approaches*, Sage Publications, 1998 [ISBN 0-7619-1437-4](#)

²⁶ Bengston and Allen 1993). "The life course perspective applied to families over time." in *sourcebook of family theories and methods: a contextual approach*, ed. P. Boss, W. Doherty, R. Larossa, W. Schumm, and S. Steinmetz. New York: Plenum

lives²⁷. It also can be viewed as a process(see figure 5) : the mechanism by which people, organizations, and communities gain mastery over their lives²⁸.

This approach means that trainers and coaches should take people's experiences as a starting point and join on what they can rather than on what they cannot.

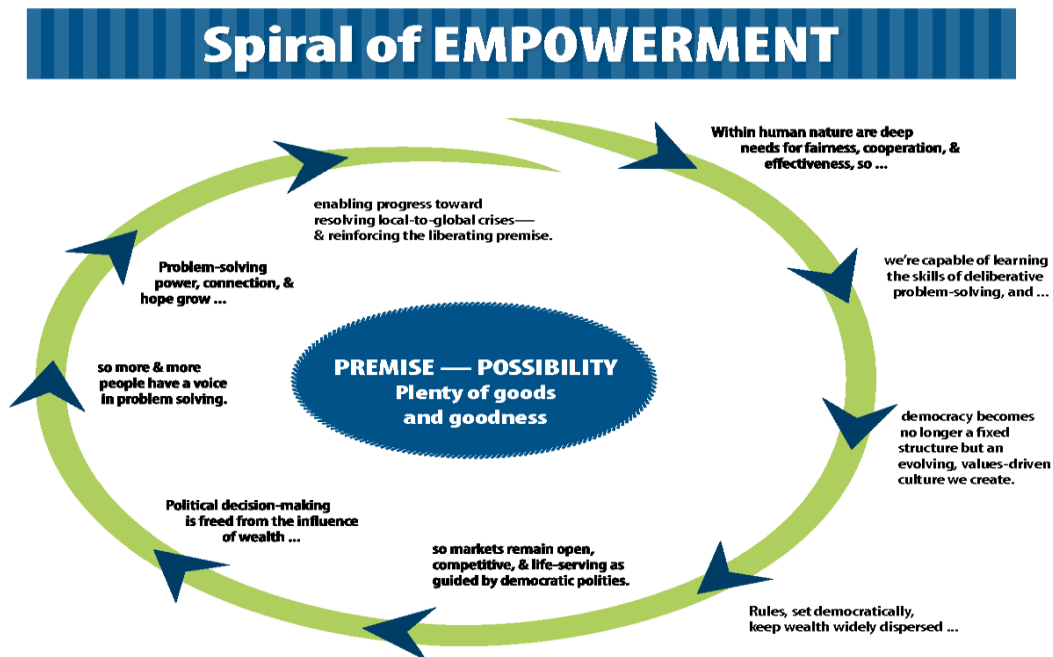


Figure 5 (source unknown)

TRAINING AND COACHING SKILLS

ADULT LEARNING COMPETENCES

Finally it is important that you as a trainer are aware of your own andragogic and counselling skills²⁹ and how you can use these. General competences are those which are mentioned in figure 6 as A competences:

²⁷ Adams, Robert. *Empowerment, participation and social work*. New York: Palgrave Macmillan, 2008, p.xvi

²⁸ Rappaport, J. (1984). *Studies in empowerment: Introduction to the issue*. "Prevention in Human Services," 3, 1–7

²⁹ Key competences for adult learning professionals, *Research and Policy on request of the European Commission 2010*

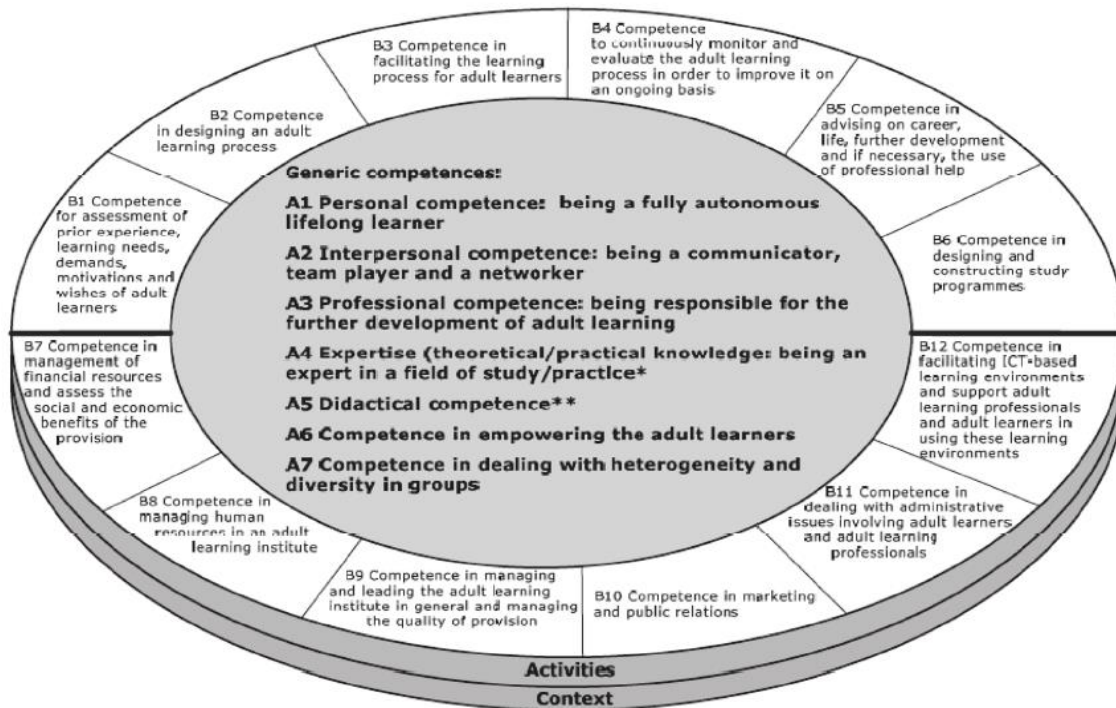


Figure 6 Schematical overview of Key Competences of Adult Learning Professionals

- Being a fully autonomous lifelong learner yourself
- Being a communicator, a team player and a networker
- Being responsible for the development of adult learning in your organisation
- Being an expert in a particular field of interest
- Being didactical competent
- Being competent to empower people
- Being competent in dealing with heterogeneity and diversity in groups.

Depending from your work setting you will need also one or more of the B competences.

TWO DIFFERENT APPROACHES IN WORKING WITH GAMES

Working with games requires as extra skills understanding the architecture and structure of the where the 5 levels in game, the rules and the way it can be played in different situations and with different perspectives.

Further on you should be aware that there are two approaches in working with games of which you can choose:

MORE SKILLS ORIENTED	MORE AWARENESS RAISING
Accent: learning new skills	Accent: identifying problems
Objective: skills training	Objective: awareness raising
Focus on individual and group achievements	Focus on group dynamics
Use standard situations from real life	Use individual and group tasks from real life
Active directive coaching on results	Active directive coaching on vision and strategy

Be transparent in your choices and explain this to your participants, this avoids disturbing situations.

Playing a game can be a very powerful instrument, also because it evokes feelings and arouses emotions. Do not neglect this aspect, but stay concentrated on the evoking game situation and try to explain what that means.

DEBRIEFING

In the field of experiential learning methodology, the debriefing is a semi-structured process by which the facilitator, once a certain activity is accomplished, makes a series of progressive questions in this session, with an adequate sequence that let the participants reflect what happened, giving important insights with the aim of that project towards the future, linking the challenge with the actions and the future. Prepare a list of questions before the debriefing session.

- Keep their questions as clear and concise as possible.
- Avoid questions that lead the discussion away from the subject matter.
- Listen carefully to the discussion to prevent overlapping questions.
- Avoid a tone that seems overly condescending

We can distinct different kind of questions:

- Questions that demand clarification serve to clear up misconceptions concerning the nature of the game (for example: have the 5 levels in the game been effective, did the group exercises had added value?)
- Questions to describe what has happened during the game or during certain exercises.
- Questions that demand general elaboration on the participants to push the discussion into deeper territory (for example: what could have happened if you had used another strategy?).
- Questions that challenge the players to explore alternatives may change the direction of how they have seen and played the game (for example: what do you take away from this game?).
- Questions that inquire about the benefits of the game for the original objectives (for example: what did this game learned you as the most important competences for entrepreneurship?)

- Questions about the risks associated with the project (for example: what could have been the consequence from your decision in reality?) .

Debriefings are most effective when conducted interactively between the participants of the immersive activity and the assessment or observation personnel.

INCORPORATION IN YOUR ORGANISATION

Many of the experts we interviewed see games as an effective learning tool. Traditional training methods suppress the trainee in a passive role and wrestle with the link between theory and everyday work. In a game the participant must directly to the tray: search, try and - most importantly - instantly see and feel what the consequences of your decisions. Experience is central to games and that enhances the learning efficiency. Because purpose and utility of the training be experienced firsthand, can also easily step into behavioral change be made.

EXPECTATIONS AND CLEAR OBJECTIVES

Serious games are a means to an end. One way to acquaint new employees with the rules and culture of the organization. A tool to increase the focus on service. A recruitment tool. The same goals can also in other ways than with games can be achieved. What is the added games? Games must be assessed for their effectiveness. Do games at all what they promise? And the effects of, for example a game-based training or more sustainable than conventional training methods? In addition, of course, financial considerations also play a role.

Games provide organizations with added value because they provide an environment in which managers and employees freely and without risks can learn and experiment. Is it wrong once, the 'damage' is limited to the virtual world. Indeed, if there is ably reflected on what went right and wrong, the employee is a valuable experience richer.

Traditional management games - games that are so deliberately kept separate from the daily work reality - have much to offer, say all the experts interviewed

LEARNING ENVIROMENT

However, using games requires also a learning environment. This means a place where employees can learn and develop in a safe environment, not hindered by the fear to make mistake or to cause troubles. It means also a system that help learners take control of and manage their own learning, where they can make the transfer from learning to work situation³⁰.

A good learning environment includes support for learners to accomplish three things:

³⁰ Van Harmelen, H. (2008). "Design trajectories: four experiments in PLE implementation". *Interactive Learning Environments* 16 (1): 36 – 46. [doi:10.1080/10494820701772686](https://doi.org/10.1080/10494820701772686)

- Set their own learning goals.
- Manage their learning, both content, and process.
- Communicate with others in the process of learning

THE EMPOWERMENT TRIANGLE

The learning environment can be seen as what is necessary to realise the objectives, the methods and assessments and the content. So, it should be clear, also from the client or company side what is the purpose, how you want to reach this and what you have to do to make this happen.

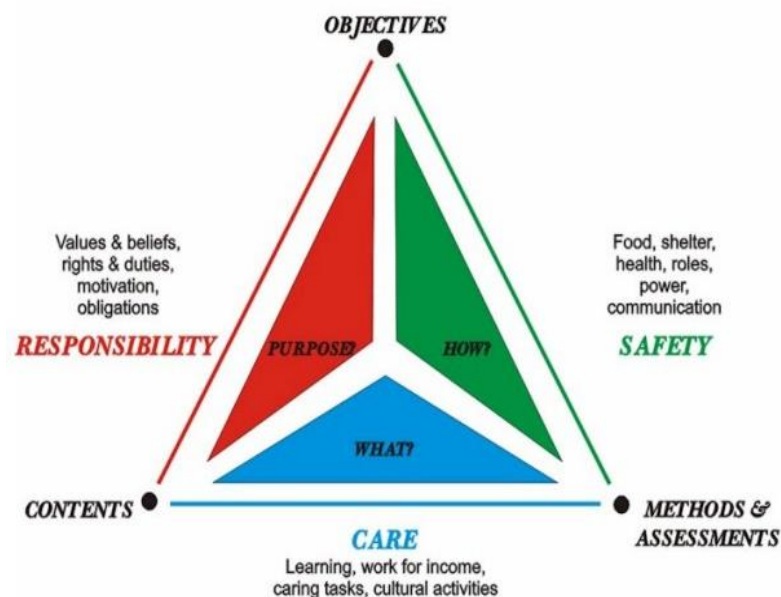


Figure 1 The Empowerment Triangle, source unknown

This empowerment triangle means that a good learning environment should guarantee responsibility, safety and care for the learners to achieve the organisational aims.

PEDAGOGICS IN THE “BIZ-E-BEE” GAME

“Biz-e-bee” is an educational game for teachers in adult education. It combines fun and learning. It is designed for a purpose other than pure entertainment. Technically, it is a board game with three or more levels and you play it with two dices. You can only reach another level or the finish to answer different kind of questions which are printed on cards. And answering a auction you are blocking this field for other players who needs to go another way or solve the block (which costs one turn). It is designed to pay attention to entrepreneurship and entrepreneurial skills. Further on teachers have the opportunity to add own questions or tasks via blank cards. The story as well as the mechanics (rules and

procedures of the game) refer to entrepreneurship. However, the game can also be reconstructed and used for other themes.

So, **“Biz-e-bee”** is a closed and formal system, that needs to be entered wilfully by the players. The game is challenging the players, because there are goals (looking for and finding a way to get more point than the other teams;) and conflicts (struggling and finding a way to complete a level; planning and finding a way to surpass the other players before they surpasses you))and it can be won and lost (searching and finding a way to get the finish line before the other players). The game is interactive and players are getting engaged. **“Biz-e-bee”** is a game that can create its own internal value. This is reflected in the title, which refers to an entrepreneur as a bizzy bee. The e- refers to a possible online version .

“Biz-e-bee” is pleasurable and enjoyable, there is no prescribed learning that must occur. It can be played spontaneous and voluntary, but it always involves active engagement of the players. There is an element in it of make-believe (becoming an entrepreneur, starting your own business).

In the realisation of the game the play master plays a crucial role. He/she can changes or add rules, fine-tuning on the needs and the potential of the players. He has consider a good mix between the teachers team, the audience, the game itself and him/her self. The play master is also the one who decides if the game is be used more skills oriented or more focused on awareness raising on entrepreneurship. Finally he/she pays a crucial role in the process of debriefing

“Biz-e-bee” includes several entrepreneurial skills – they have been chosen based on needs analysis I different countries - such as taking initiative, creativity, communication, problem solving, team building, responsibility, determination, self-confidence, goal-orientedness and reliability. There are knowledge(for individual as well as for team), multiplier, challenge and collaboration cards. Separately playing the game as also problem solving, communication and teambuilding effects and it asks creativity form time to time.

As far as we have seen playing **“Biz-e-bee”** has a motivating effect. Players are getting familiar with entrepreneurial skills free of risk. Further evaluation will learn if the gained knowledge gets deeper into player’s mind and several skills might have be trained.

Finally **“Biz-e-bee”** can be used in all kind of settings and in all kind of organisations as a stand alone version or as part of a wider curriculum, as long as there is a good learning environment available, in a way that participants have the opportunity to set their own learning goals, manage their learning (both, content and process)and communicate with others in the process of learning.



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Project Leader:

Address:

Phone:

E-mails:

Web:

CVO Antwerpen

Distelvinklaan 22, 2660 Hoboken, Belgium

+32 3 830 41 05; +32 3 369 06 90

list@sg4adults.eu; projects@cvoantwerpen.be

www.cvoantwerpen.be



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