

Manual

The power of games

IN ADULT EDUCATION



Co-funded by the Erasmus+ Programme of the European Union

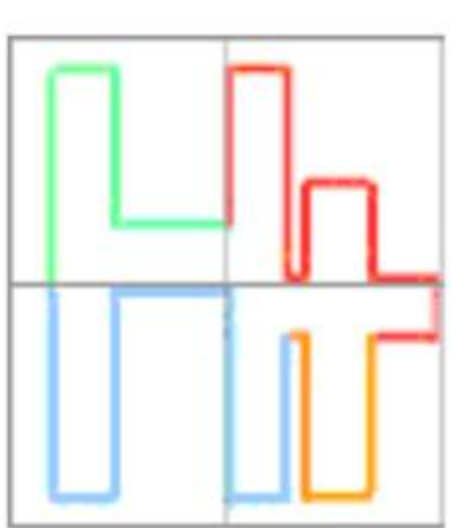
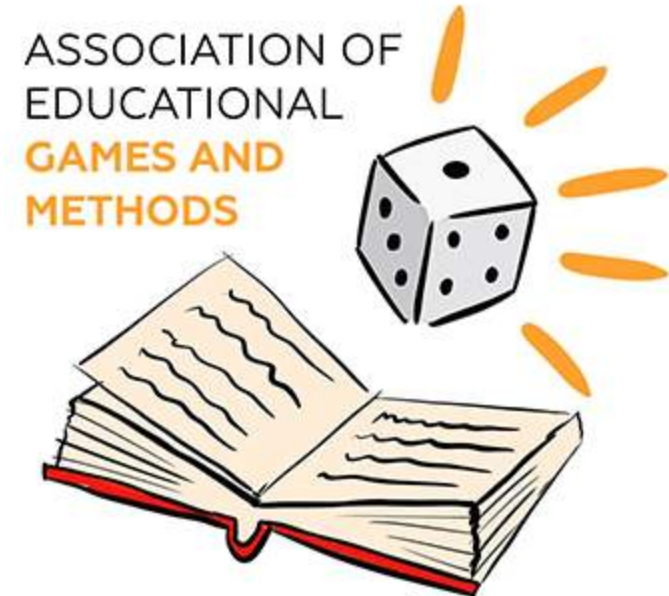


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Intro



This manual-toolkit on the power of games for adult education contains information on the history, practice, and theory of the use of games (in adult education) and offers adult educators and adult education organisations the opportunity to raise understanding of why games are a powerful tool, how to use games for educational purposes, and also gives advice on how to create their own game and their own content in a participatory way.



A very important aspect of this project has been the topic of inclusion and inclusion as we know it, namely a universal human right aimed at embracing all people. In this project, we would like to look at it from a wider perspective and to promote inclusion as a universal attitude to everyone. Within the framework of this project, we would like to encourage inclusion as an opportunity for everyone to take part in a social, political, economic life. Each of us has some conditions, limited resources, or restricted access to some opportunities, knowledge, society, services, etc. Some people have more obstacles in their path than others, while some come across just a few. Regardless of the size, quantity, or complexity of the obstacles, everyone deserves and should have an opportunity to be included in a way that is needed for a specific person.

For some inclusion means to be able to start a job, for some it might mean to start volunteering or to make new friends, for others it might be an opportunity to develop and participate in socially important projects or to start a business, while for others it might be the first trip outside the city or country. People are different and inclusion applies to each of us in a different way, but it is important to understand that inclusion applies to everyone.



About the project



The project “INGA – Inclusive Games in Adult Education” was Erasmus+ Small-scale partnership project in adult education, implemented by educational organisations from Latvia, Hungary, Spain, and Germany. The project was implemented from November 2021 to October 2022.

In this project we wanted to look at the games from a different perspective and to raise understanding of adult educators as to how games can be integrated in educational activities. Our aim was to highlight why games are a powerful tool, how games can be used as an educational tool, how to choose appropriate games for specific target groups, in particular disadvantaged groups, which aspects are important and need to be particularly taken in consideration, what the game thinking and gamification approach in adult education are. The created Toolkit will also give advice on how to use the existing games for educational purposes and provide tips on how to create your own educational game based on learner needs.

The target group consists of many different actors such as individual educators, particular organisations and persons working with disadvantaged learners:

- 🧩 members of the partner organisations (staff, volunteers, trainers) to improve their competences and expertise in using games as an educational tool;
- 🧩 different adult educators;
- 🧩 trainers, facilitators, coaches etc.;
- 🧩 organisations/ institutions working with adult education;
- 🧩 NGOs, training centres, labour offices etc.;
- 🧩 enterprises and their HR specialists;
- 🧩 different institutions providing educational activities for adults (libraries, cultural centres);
- 🧩 other interested parties.

PROJECT HAS THREE MAIN RESULTS:



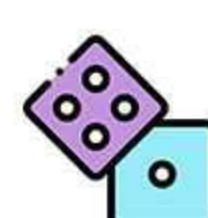
Manual-toolkit on the power of games in adult education.

Manual includes useful information for adult educators and adult education organisations that will help to raise understanding of why games are a powerful tool in educational processes.



Collection of good practices of the existing games and tools in adult education.

The collection of games consists of 80 different games/ methods that can be used for educational purposes.



Games for inclusion.

Four newly created games that can be used by educators in order to integrate learners in educational processes.

You can view and download
all project materials here:
https://bit.ly/INGA_materials



This project is focused on European values such as integration, inclusion, equality, diversity, democracy, freedom of speech etc., and aims to protect and promote these values. One of the main priorities of the EU is to improve, promote, and contribute to “inclusion & diversity in all fields of education”, focussing on adult education. All types of games are a very efficient way to convey knowledge, and their use can help to present complicated topics in a simpler way than through formal educational approaches.

The project goal is to improve competences of educators and other adult education staff through the use of games, and the project particularly deals with the adult education offering new learning and teaching methods and approaches that promote inclusion, equality, and non-discrimination.



Situation in partner countries

LATVIA

The use of games in the educational process in Latvia is a relatively new experience that has been developing more rapidly in the last 5-7 years. Currently, some educators are familiar with the games and methods created in Latvia and also outside Latvia that can be integrated into the learning process, yet there is still a considerable need for materials to explain the benefits of using games and also to provide some guidelines on how games can be used for educational purposes and processes.

HUNGARY

Adult education in Hungary is still very strict and traditional. There are more and more adult education institutions and organisations that are open to including non-formal educational elements, such as games and gamified methods, in their courses. Game-based education is developing very quickly, and its popularity is rising in the educational field. It is slowly becoming part of adult education activities.

GERMANY

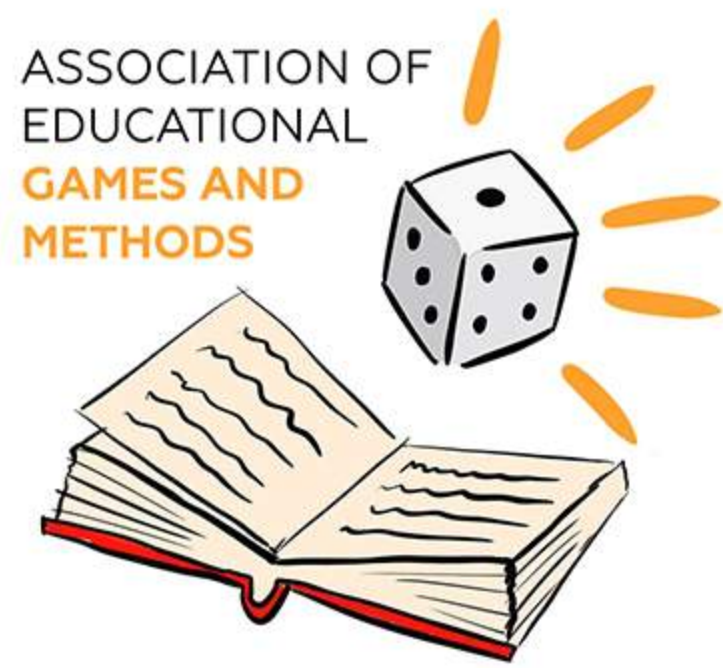
Germany has been using games in educational contexts since the 1960s, especially in the youth sector, but games are also actively employed in adult education, in particular in the areas such as participation, teaching values, and democracy building.

SPAIN

Adult education in Spain follows a traditional structure where games are not used very often. However, teachers and educators are including them in educational processes increasingly more, and game-based-education as well as gamification are becoming very popular.

Project partners

Four different organisations from four countries were involved.



The Latvian Association of Educational Games and Methods (Izglītojošo spēļu un metožu asociācija (ISMA)) is a non-governmental association which has a significant experience in the development of educational games and gamification. Since its establishment, the organisation has been actively involved in the activities and projects related to educational games, development of games and their adaptation to learning and occupational processes, promotion and integration of gamification approaches into the educational and work-related processes. The Association organises various conferences and seminars, and one of its best known events is the Tool Fair – a practical seminar aimed at introducing game-based educational methods and their use in educational practices, and familiarising practitioners from various fields with different educational games developed in Latvia.



www.facebook.com/lzglitjoso.spelu.metozu.asociacija



Hungarian organisation specialising in offering participation in youth-led events and activities in game-based learning which are offered to young adults. The Tudatos Ifjúságért Alapítvány (TIA) is a voluntary organisation in Hungary that aims to develop the competences (particularly the social and civic competences) of young people and adults which are important in the modern world in order to actively affect positive change in communities and in our society. These goals are delivered by organising talent development programmes and training. The organisation also aims to support public life and research of young adults and youth providing a range of professional work which deals with the problems of individuals and civil society organisations. They define their activities along three guidelines: active participation and citizenship, human rights education, and game-based learning.



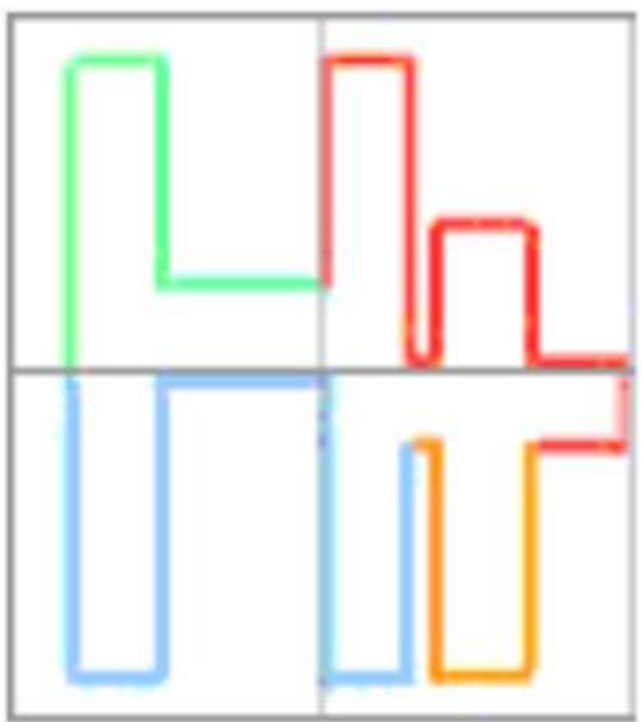
www.tudatosifjusag.hu



The organisation rooted in Spain started its work in 2005, and it has years of experience in organising cultural activities and involvement possibilities with local communities. AC Amics de la Biblioteca de la Fonteta is a non-formal education organisation providing learning opportunities to the people in their area (youth, adults, and children). This organisation unites experts in non-formal education, motivation, empowerment, and inclusion. They have previously participated in several international projects, and this gives a wide perspective on the topic of developing training methodology. Most of the members are related to the education field as teachers or trainers engaged in vocational education.



www.amics.eu



As a non-profit organisation with many years of experience, German HochVier provides learning activities, such as summer universities and language courses. HochVier was founded in 2004 and is an independent provider of political and cultural education. Their full-time, honorary or freelance lecturers, trainers, and project coordinators are very experienced in target group specific extracurricular educational work and primarily use unconventional educational measures as well as creative and interactive methods.



www.hochvier.org



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Games in Education

HISTORY OF THE GAME AS AN EDUCATIONAL TOOL

Games are one of the oldest forms of human interaction and have been an important element of social life and an essential cultural aspect since ancient times. Games were played way before written communication.

The very first game played was probably dice. The dice was mainly used to practice fortune telling.

Roman-era dice.



Source of the picture: www.sciencealert.com/2-000-years-of-dice-design-evolved-fairness-probability

Games were not played just for entertainment; with the help of games some important cultural information was brought from one generation to another, from one culture to another, from one continent to another. Games were used to teach knowledge – ethics, spirituality, astronomy, strategic thinking, war skills, and other.

The history of games shows that they were never created just for entertainment. An additional function or meaning, either spiritual, political or educational, was added to the game.

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GAMES IN EDUCATION


There are two basic ways of using games and their elements in the teaching and learning processes:

1 The first one is game-based learning where games are used to provoke learning. Escape rooms and “educational breakouts” are two game proposals that can be included in this group.

2 The second one is gamification which involves use of game elements to design learning experiences that could take place without enjoying the playful component, but which turn them into attractive and motivating proposals for students when they are planned using the guidelines that characterise this methodology.

EFFECTIVE LEARNING PRINCIPLES THAT CAN BE MET WITH GAMES

Scientifically and experientially collected teaching and learning principles that are important in any process of acquiring and strengthening knowledge, skills, attitudes (American Psychological Association, Coalition for Psychology in Schools and Education, 2015).

 Repeating and replacing. When learning something new, it is necessary to repeat it several times so that what has been learned is consolidated. It is especially important in learning new skills and changing previous behaviour patterns to new ones. It includes not only learning new information, but many times more intense activity with two basic elements: 1) removing the old behaviour pattern from everyday life, 2) introducing the new habit (Duhigg, 2014).

👉 Emotions. In changing behaviour and attitude, emotions play a fundamentally more important role (Tokuhama-Espinosa, 2011). Establishing and sustaining a new behaviour over the long term on a daily basis requires a large “mental and physiological investment” from any person, such as willpower, self-control, self-awareness, and motivation. It is based not only on information that justifies the need and provides arguments for doing something, but also on emotions. They are like “fuel” in the learning process ensuring that new brain synapse connections are formed in the brain more efficiently and permanently and they are directed to the new behaviour pattern and allow to replace previous habits.

👉 Psychological support. During training, and also when working with young people it is important to arouse emotions such as “feeling of security”, “support”, and “trust”. The head of training should take into account the psychological stress that may occur during the training process. For example, one of the causes of stress may be that the participants are afraid to admit that they do not know how to do something, even though it may be well-known thing.

👉 Positivity. Research shows that in an effective learning process, the task of the learning leader is to help the learning participants and make sure that they have an opportunity to feel as positive as possible which ensures an optimal process focused on analysis, good information perception, cooperation, and communication during learning (American Psychological Association, Coalition for Psychology in Schools and Education, 2015).

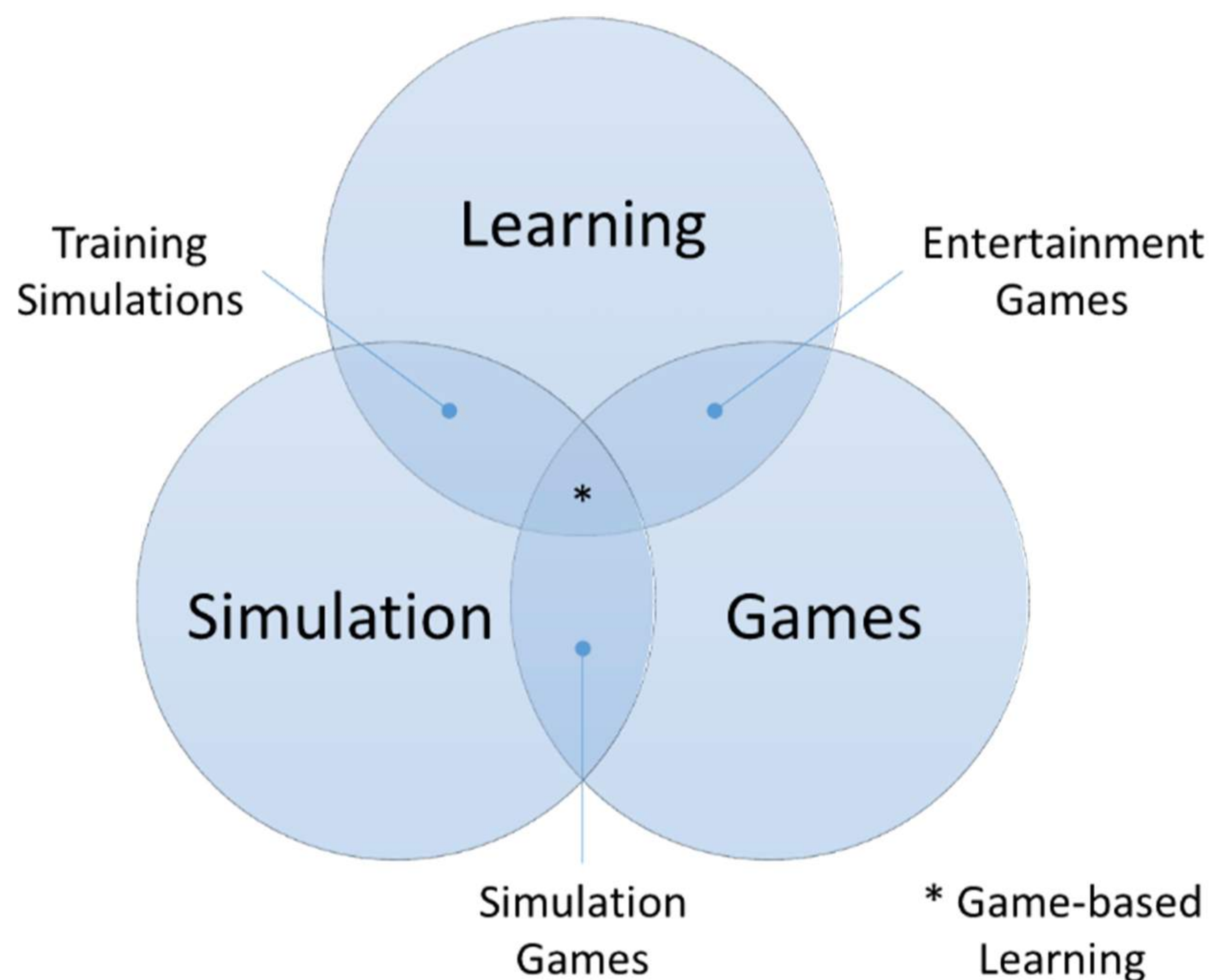
👉 Learning is a social process. Changing behaviour patterns can be divided into two types: a) individual (I do something alone, without the presence of other people) and b) collective (my actions are related to other people). Focusing on the development of work and life skills, learning processes need to be oriented towards collective involvement. Emotions are more involved in the collective learning process, so it is easier for new habits to take hold. This allows for more successful development of the skills related to interaction with other people: communication, motivation, empathy.

👉 Meaningful learning. According to various studies, more and more people are looking for an answer to the question “why do I need this”. The basic task of meaningfulness is to create a feeling of “better self”, a feeling that new skills or knowledge are learned to support young people, to help lead a better community, society. From the perspective of neuroscience, in order for the brain to be fully activated during the learning process, the answer to the question “why” and the strengthening of the sense of meaning are fundamentally

GAMES-BASED LEARNING

The main idea of the game-based learning is to use game principles and apply them to real-life situation and problem solving to engage participants (Trybus, 2015). The core concept behind game-based learning is teaching through repetition, failure, and the accomplishment of goals.

Game-based learning (GBL) refers to the use of games as educational tools or to support learning in educational settings. This methodology enables learning to be active, multimodal, and diversified. The GBL, as a necessarily group methodology, can promote educational inclusion, since students with different abilities share the game space.



Source: https://commons.wikimedia.org/wiki/File:Game-based_learning.png

As games are engaging, playful, and dynamic, players are motivated to play and discover more, and this is how the game becomes a very good and engaging tool for teaching and learning. The acronym GBL that defines this methodology comes from its English name Game-Based Learning.

Game-based learning is not a random and chaotic activity, it is always based on pre-defined goals and outcomes that are connected to the learning topic or situation.

Game-based learning means keeping participants motivated to play with different tools such as points, badges, progress monitoring, leaderboards, achievement, competition, levels, obstacles, milestones, feedback, collaboration, and others.

Game-based learning is a type of game play with defined learning outcomes (Shaffer, Halverson, Squire, & Gee, 2005). The design process of games for learning involves balancing the need to cover the subject matter with the desire to prioritise game play (Plass, Perlin, & Nordlinger, 2010). Play has always been an important and critical element of human development.

Many articles focus on the benefits of game-based learning and its efficiency versus other learning forms. As can be seen from Table 1 where learning forms are compared, games-based learning is a very effective tool in many different aspects, starting from cost-effectiveness and ending with a high level of commitment. A systematic review of game-based learning conducted in 2018 found that “educational games play a successful role in terms of both a better understanding of the course content by the students and the participation of the students in this process.”

Table 1. Game-based education versus other forms of learning.

	Traditional learning	Practical learning	Game-based learning
Cost-effectiveness	High	Low	High
Physical risk for learner and liability for facilitators	Low	High	Low
Standardised assessment and the ability to compare students	High	Low	High
Level of commitment from the learner	Low	High	High
Pace of work adapted to the individual learner	No or rarely	Yes	Yes
Direct and immediate feedback	Sometimes	Yes	Yes
Transfer of knowledge to life situations	Unclear	Yes	Yes
The teacher/facilitator is actively involved	No	Yes	Yes

Source: <https://kursy.cdw.edu.pl/zastosowanie-gier-i-grywalizacji-w-edukacji-gotowy-pomysl/>

One of the most important aspects of game-based learning is that participants become producers and active participants of the learning experience rather than passive observers and consumers. It is an environment that helps to take a risk, accept failure, see the real consequences of actions, interact with other people, and see their reactions and actions. Higher thinking skills such as problem solving and critical thinking are developed through the game by helping players to evaluate and reflect on the game.

What are the challenges and failures using game-based learning approaches?

Game is an effective tool but there are still some aspects to consider:

- ⚠ Sometimes it takes time and effort to understand rules of games, so devote some extra time to explain them to everyone;
- ⚠ Some games can take hours and hours to play, so before choosing or creating a game, please be realistic and make sure that the duration of a game is reasonable;
- ⚠ Not all games are working for all people, maybe a game is not challenging enough or maybe players already know the game too well, so always have a back-up plan and another activity or game in mind;
- ⚠ Some educational games which involve psychological aspects can become very personal or sensitive, always remember that a player needs to feel safe to open up and trust the group, so do not force the player to open up if he or she is not ready to do it;
- ⚠ Do not forget to have a self-reflection time after a game, since conclusions and self-reflection are important elements of the whole game-based learning process.
- ⚠ Too much screen time if games are online-based.
- ⚠ Games are not always created equally.
- ⚠ Do not replace traditional learning strategies.
- ⚠ Games are not always aligned to teaching or learning goals.



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GAMIFICATION

Gamification is a learning technique based on the application of didactic methodologies in the professional educational field which helps to obtain better results when it comes to achieving the established objectives. This facilitates the internalisation of knowledge in a more fun way, generating a positive user experience.

In short, gamification means adding game elements to a non-game situation. A good example is business reward programmes. Users, workers, or clients are rewarded for certain behaviours. In youth work, gamification is often integrated in an authentic manner. Young people develop a character, play part of a team, and earn experience points, badges, and rewards based on the associated behaviour. Young people are rewarded for accomplishing tasks, working together, volunteering, providing support to others, implementing projects, and taking specific roles etc.

Key elements of the game:



Source: <https://elearningindustry.com/gamification-trends-2019-tips-ideas-packed>

Game-based learning vs. gamification

In order to understand what is meant by game-based learning and gamification, it is important to know their differences.

GAMIFICATION	GAME-BASED LEARNING
Gamification is adding game elements to a non-game scenario. You reward certain behaviors with benefits or by “unlocking” new features or services.	Game-based learning (GBL) flips gamification on its head. Rather than implement game-like tropes into lessons, GBL uses actual games to teach.
Adding game-like elements (badges, experience points, etc.) to a lesson	Using games (such as Minecraft) to teach specific learning objectives
Motivation: Likely extrinsically rewarding . I.E. the reward is tied to grades.	Motivation: Games are designed to be intrinsically rewarding . May also be extrinsically rewarding.
Assessment is not within the “game.”	Assessment is in-game .
Game-like aspects are adjusted to fit the lesson content.	Lesson content is adjusted to fit the game.

Source: <https://www.filamentgames.com/blog/5-myths-about-game-based-learning/>

Types of teaching and learning through games

The diagram below classifies these game types in terms of gaming (with all the components as described by McGonigal) and play which does not necessarily involve rules, a feedback system, and a goal but looks at the games or play as a whole or in part.

Games vs Game-Based Learning (GBL) vs Gamification						
© K.Becker 2016	Game	Serious Game	Game for Learning (G4L)	Game-Based Learning (GBL)	Game-Based Pedagogy (GBP)	Gamification
Basic Definition	This term includes all the other categories except gamification.	A game designed for purposes other than or in addition to pure entertainment.	A game designed specifically with some learning goals in mind.	The process and practice of learning using games. [From the learner's point of view]	The process and practice of teaching using games. [From the teacher's point of view]	The use of game elements in a non-game context.
Purpose	Can be for any purpose.	Change in behaviour, attitude, health, understanding, knowledge.	Normally connected with some educational goals.	Not a game - this is an approach to learning.	Not a game - this is an approach to teaching.	Often used to drive motivation, but can also be used to make something more playful and game like.
Primary Driver (why used)	Can be either play or rewards (or both).	To get the message of the game.	To learn something.	To improve learning. To increase learning effectiveness. <i>*Note GBP & GPL are related, but not the same.</i>	To improve teaching practice & effectiveness. <i>*Note GBP & GPL are related. They are like two sides of a single coin.</i>	Depending on how it's implemented, it can tap into extrinsic or intrinsic rewards (or both)
Key Question	Is it fun?	Is it engaging?	Is it effective?	Am I learning what I am supposed / need to be learning?	Is it effective?	Business: Does it improve profits? Education: Is it effective?
Focus	Player Experience (<i>how</i>)	Content / Message (<i>what</i>)	Content / Message (<i>what</i>)	Learning Objectives (<i>what & how</i>)	Learning Objectives (<i>what & how</i>)	User Experience (<i>how</i>)
Budgets	Next to nothing to 100's of millions.	Next to nothing to 100's of thousands.	Next to nothing to 100's of thousands.	Usually part of institutional budget. Largely irrelevant to the user.	Usually part of institutional budget. Largely irrelevant to the user.	Next to nothing to 10's of thousands..
Business Model	User Pays	Producer Pays	Varies	Institution Pays	Institution Pays	Producer Pays
Concept Catalyst	Core Amusement.	Message.	Performance or Knowledge Gap	Game is the lesson or is used as a part of the lesson.	Game is the lesson or is used as a part of the lesson.	In learning it usually impacts HOW things are taught and administered rather than WHAT is taught.
Fidelity	Self-consistent, otherwise irrelevant	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Not Applicable. If a narrative exists, it need have nothing to do with what's being gamified.

Source: Becker, K. (2021). *What's the difference between gamification, serious games, educational games, and game-based learning?* Academia Letters. <https://doi.org/10.20935/AL209>

BENEFITS OF THE LEARNING THROUGH GAMES

Games motivate, engage, challenge, relate, and reward. Games are generally considered to bring pleasure in learning – if a game allows its players to enjoy it, learning will be more efficient despite difficulties.

Games allow players to learn new things, thus improving their basic skills or competences. According to the research, learning through games has the following benefits:



IT IS A SAFE WAY TO EXPERIMENT

You can practice a specific behaviour, you can make choices and see what consequences are, and if you do not like the outcome, you can do it differently and see what happens then.



EVOKING BEHAVIOUR

In games you make choices, and those choices have consequences.



EVOKING EMOTIONS

Games evoke not only behaviour but also emotions. Emotions are powerful tools in learning; if a subject does not evoke emotions, it is more difficult to learn from it. Games use storytelling, aesthetics, immersion, music, atmosphere, and a variety of other ways and techniques to evoke and convey emotions.



OFFERING DIFFERENT FORMS OF INTERACTION

Games allow for different forms of interaction: from collaboration to competition, from deliberation to discussion and not just having fun.



OFFERING CONTROL & FEEDBACK

As a player you can decide what you do in an environment that constantly keeps you informed of how you are doing and whether something you do is good or bad. Thanks to this feedback, players know what they need to do to reach the end goal, and the game is organised so that you always know how far you are from that goal, and what you still need to do to reach it.



OFFERING PERSPECTIVE ON ACTION

When allowing players to experiment with all kinds of choices and their associated consequences, an action perspective is offered. The game sends a message that no matter what you choose to do in the game, there is always a solution.



CREATIVITY

Looking for solutions to problems, arriving at different strategies within a set of pre-agreed rules help to stimulate creativity of the players.



BRINGING FUN!

Games are fun. They provide a platform for an organised social interaction where everyone can participate. A game has its own reality, its own rules, activities, and agreements and thus it stands alongside our reality.

FUNCTIONS OF GAMES

Each game has its own goals and aims, but in general, all games are designed to function in similar ways. The main functions of the games are given below:

FUNCTION OF GAMES	PARTICIPANTS ARE:
MOTIVATE	inspired to take part and encouraged to try harder
ENGAGE	fascinated, captivated, and excited
CHALLENGE	forced to face obstacles, to grow and gather valuable experience
RELATE	involved and engaged, because the tasks are sensible and relevant
REWARD	rewarded for their actions; satisfied and relaxed

Sometimes during the learning process we can come across unexpected obstacles at an individual or group level. These can be lack of interest, lack of motivation etc. Game is a good tool for dealing with such aspects, since it also has the following functions:

- ➡ Increasing motivation of the people involved;
- ➡ Improving self-esteem of the people involved;
- ➡ Stimulating interest in processes in which a person shows a lack of interest or passive interest;
- ➡ Helping to get over an 'engagement gap' which is important in communication;
- ➡ Developing new patterns/habits;
- ➡ Changing people behaviour;
- ➡ Provoking new collective initiatives;
- ➡ Increasing productivity and efficiency;
- ➡ Promoting exchange of information, knowledge, and experience.

REAL EXAMPLES OF USING GAMES IN ADULT EDUCATION

(How can games be used as an educational tool / How games can be integrated?
– from Inez magazine from NDL)

For example, a language lesson, teaching entrepreneurship, communication skills etc.

EXAMPLE 1

Serious games. Example from the Netherlands

“Moving Stories”

Author: IJsfontein for Trimbos Institute

Subject: mental health

Target group: teens in secondary education

Web: www.ijsfontein.nl/en/projecten/moving-stories-2

Moving Stories is a first person, single player game in the form of an app for a phone or tablet. For five days all the students in the class play the game by themselves for about 10 minutes a day. After the fifth day there is a discussion with the class and someone who has had first-hand experience in this field. The main goal of the Moving Stories is supporting teens to help themselves and each other better in case they are not doing well. The game is designed to serve four sub-goals: reading the signs of lowered mental health, opening discussions, offering a way to cope and reduce stigma. When psychological complaints are acknowledged at a younger age and the right help is offered, long-term results are usually better.



EXAMPLE 2

Game for learning a language. Example from Latvia

“Tell your Story” cards

Author: SIA Tellyourstory

Subject: communication, team-building, language etc.

Target group: age 7-no limit

Web: www.stastustastiem.lv/product/stastu-stastiem-izstastiju/

Number of participants: unlimited

Materials to be used: Tell your Story cards (in Latvian or English, as appropriate)

Instructions: all students select one card. They read the question in Latvian and then translate it into the necessary language, and answer to the question in the specific language.

Benefits: language learning through play in an interesting way (which in turn promotes motivation), building an extensive vocabulary, students get to know each other better.










USING GAMES FOR EDUCATIONAL PURPOSES

Games do not substitute other forms of learning. Like any educational tool, they should be well-planned and integrated only in cases where they are relevant to the learning objectives. Games are an interactive way to encourage learners to explore and participate, unlike books, pictures, or movies, where learners take a passive position as an observer. Games are also useful to make learning less monotonous or explain complicated theories in formal education. From the psychological point of view, games also improve self-esteem of learners that can boost intrinsic motivation to learn more and try again.

The best way is to effectively combine different educational tools creating an effective way of learning that brings not only the best understanding and knowledge but also positive emotions and good time with peers.

Some of the most common game-based learning examples include the following:

-  Card games – games where a traditional or game-specific deck of cards is used. “War” is a traditional card game that can have a mathematical twist. Check out our list of classroom math games to learn how to play.
-  Board games – games you play on a board that usually involve the movement of pieces. Chess and checkers are probably the most popular ones, but there are hundreds if not thousands of other board games for kids to explore.
-  Simulation games – games designed to closely simulate real-world activities. The Sims, which was launched in 2000, is one of the most popular series of life simulation games that involves creating and exploring virtual worlds.
-  Word games – games which are typically designed to explore the properties of a language or the ability to use a language itself. Scrabble is an example of a traditional word game, while Words With Friends app is a more modern one.
-  Puzzle games – games that emphasise puzzle solving through one’s use of things such as logic, word completion, sequence solving, as well as spatial and pattern recognition. For example, Sudoku and 2048 are popular math puzzles.
-  Video games – electronic games where players can manipulate what appears on the screen with, for example, a joystick, controller, or keyboard.
-  Role-playing games (RPGs) – games in which players assume the role of imaginary characters who engage in adventures.






How to choose a game for the educational process?

- 1 Define the aims and goal of the game.
- 2 Choose the game depending on the target group (age, size, experience etc.)
- 3 Choose the game according to the needs and interests of the group.
- 4 Evaluate the time frame you have to play the game.
- 5 Evaluate the place and environment where to play.
- 6 Choose the game that is easy to understand and explain in a short time.
- 7 Adapt and adjust the existing game to the main goal and the group.
- 8 Create your own game if needed.
- 9 Think about the time, materials, environment, needs etc.
- 10 Always remember about the reflection time after the game.



The role of teachers and facilitators

First of all, any activity which promotes learning should be facilitated accordingly and in a thoughtful way. What should educators, teachers, and facilitators keep in mind during the education through games?

-  Always be ready for unexpected situations, reactions, challenges, obstacles. As in real life, also in the learning process different aspects can appear. Your mindset should be open to any experience and not stuck in a stressful situation.
-  Create a psychologically safe environment where participants feel free and are safe to ask, try, risk, make mistakes.
-  Mind your thoughts, attitudes, and language! The process of learning can be affected by simple comment, limiting statement or emotional reaction.
-  Use different learning tools and combine them. Try both formal and non-formal tools to see how they work and what works best for participants.
-  You are a very important person in educational process, more or less you are a role model for participants. You can also show good examples, share some personal learning story, some inspiration and motivation.

To be effective, facilitators must juggle many roles in a session. Sometimes you need to strive to keep the group focused, other times you should help them go deeper into a topic, and occasionally you will try to keep them from attacking each other! The Leadership Strategies Centre has identified eight distinct roles for a facilitator to be effective.

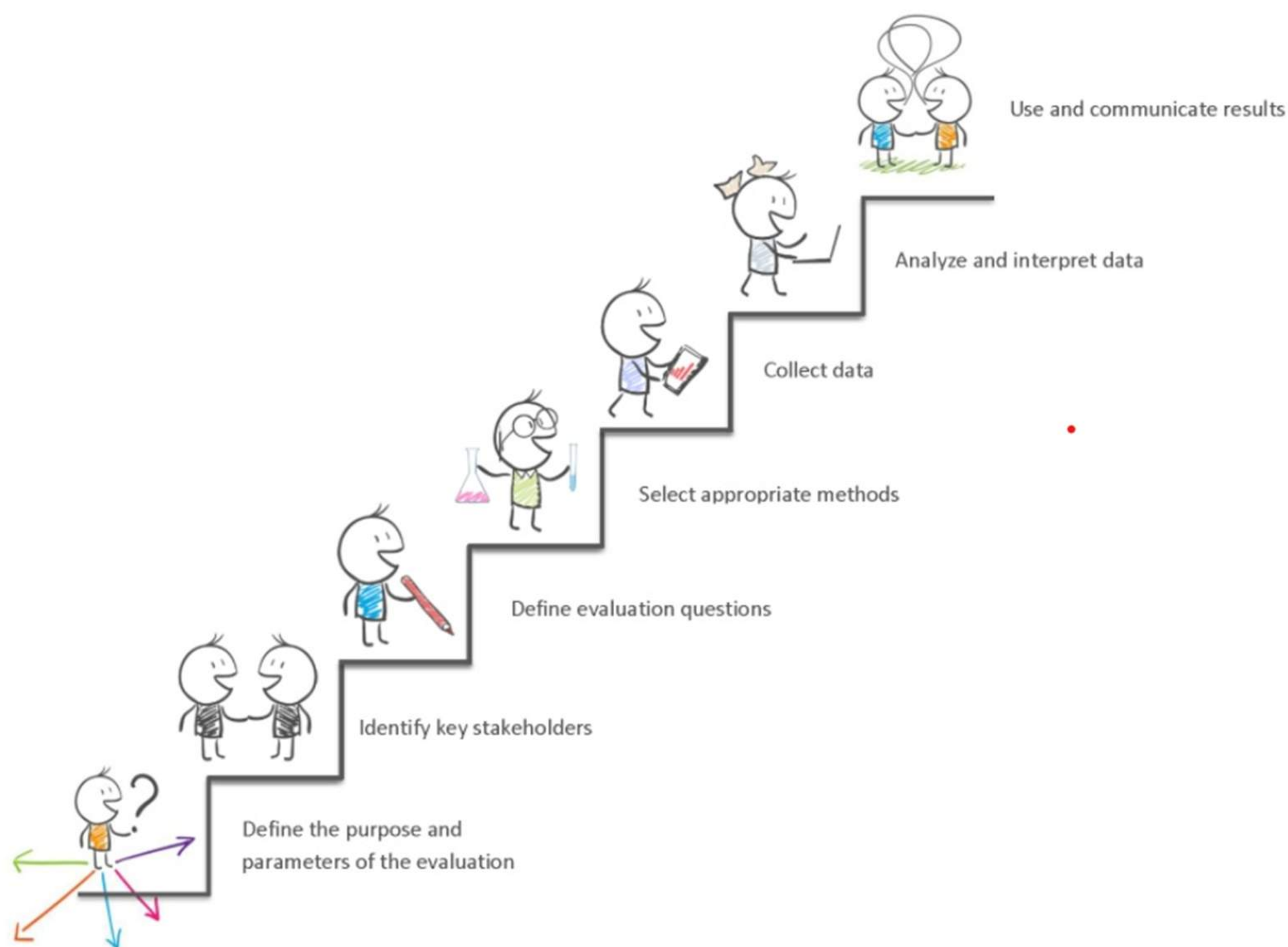
8 Roles of a Facilitator

 <p>Guide</p> <p>The facilitator must know the steps of the process from beginning to end and must carefully guide the participants through each phase.</p>	 <p>Motivator</p> <p>From the rousing opening statement to the closing words of cheer, the facilitator must ignite a fire within the group and keep it well lit. The facilitator must establish momentum and keep the pace.</p>
 <p>Bridge Builder</p> <p>Where other people see differences, the facilitator must find and use similarities to build bridges to consensus.</p>	 <p>Clairvoyant</p> <p>Throughout the session, the facilitator must watch carefully for potential signs of strain, weariness, aggravation, and disempowerment - and respond in advance to avoid dysfunctional behavior.</p>
 <p>Praiser</p> <p>At every opportunity, the facilitator should praise the effort put forth, the progress made, and the results achieved. Praise well, praise often, praise specifically.</p>	 <p>Peacemaker</p> <p>While it is almost always better to avoid a direct confrontation between participants, should one occur, the facilitator must quickly step in, re-establish order, and direct the group toward a constructive resolution.</p>
 <p>Taskmaster</p> <p>The facilitator is ultimately responsible for keeping the session on track. This means tactfully cutting short irrelevant discussions, preventing detours, and maintaining a consistent level of detail throughout the session.</p>	 <p>Active Listener</p> <p>At every opportunity, the facilitator must make a conscious effort to hear and understand the content, intent, meaning, and feeling of what is said.</p>



Source: <https://www.leadstrat.com/8-roles-of-a-facilitator/>

EVALUATION PROCESS



Source: <http://www.kmbtoolkit.ca/what-is-evaluation>

Evaluation is important, no doubt. And still, it is very often a missed opportunity to go back and understand how the experience was. Let's discover more about the evaluation for educational purposes!

Evaluation is a systematic and ongoing process of obtaining information and using it to come to conclusions. It is important to evaluate in order:

- ★ Find out participants' opinions/emotions about the activity;
- ★ Understand what was good;
- ★ Clarify how and what can be improved;
- ★ Identify specific learning outcomes;
- ★ Understand how the experience can be applied in real life;
- ★ Clear up undefined conclusions;
- ★ Promote further discussions etc.



Depending on the available time/ group dynamic / size of the group/ game / workshop flow facilitators evaluate the process and learning progress. The aims of the evaluation process are very much linked to the learning objectives, therefore it is important to think about evaluation questions before starting any activity. The specific questions could be related to some theoretical knowledge, practical skills, feelings and emotions, and other aspects. There are many methods for evaluation processes, and here are some examples of them.

EVALUATION METHODS THAT CAN BE USED AFTER WORKSHOP SESSIONS

DEBRIEFING CIRCLE

After the activity all participants sit in a circle and the facilitator leads the evaluation process. Facilitator asks questions, participants share their opinions, and that continues with the group having a discussion. There is also an option to divide participants in smaller groups (or even pairs) if it is important to get more detailed answers or give each participant more time to share their conclusions.

Examples of the questions:

- ?? What do you think about the activity?
- ?? How do you rate the activity (from 1 to 10, where 1 is the lowest score and 10 is the highest)?
- ?? What did you like? / What was good?
- ?? What did you learn during this activity?
- ?? What could be improved if the activity was run again? / How could we
- ?? improve the activity?
- ?? Are there any unclear questions? Anything else you would like to mention?

EDUCATIONAL EVALUATION

After the activity each participant gets a template with questions; the participant has individual time to reflect on the activities and find answers to the questions. In the next step, all participants sit in a circle and the facilitator leads the evaluation process asking each participant a question, they share their conclusions/ thoughts/ emotions. There is also an option for a different approach: divide participants in 4 smaller groups, each group works with only one of the evaluation categories and then (after around 20 minutes) present their summary; after group presentations all participants have a discussion about their own perspectives.

Categories and questions:

Experience	What did you observe during the activity (objective facts)? What happened??
Reflection	How did you like the activity? What was good? How did you feel? Did you find the activity easy or difficult? What was the most challenging aspect??
Conceptualise	What can we learn from it? What do you think is most important when it comes to.....??
Applying	How can we transfer it to our lives??

ADULT LEARNING

Adults need to see that the subject matter and the teaching methods are relevant to their lives and what they want to learn. Let's keep in mind that adult learning is autonomous, and adults learn what is of interest to them. As games are engaging, playful, and dynamic, players are motivated to play and discover more, and this is how game becomes a very good and engaging tool for teaching and learning.

A few principles to apply:

- ✓ Adults need to understand why.
- ✓ Adults need to stick to the point.
- ✓ Adults learn by doing.
- ✓ Adults learn by solving practical problems.
- ✓ Adults learn by applying past experiences.
- ✓ Adults learn best through a variety of training methods.
- ✓ Adults learn best in an informal environment.

And a few ideas of how to create an open and supportive environment for learning, growth, and development:

- 💡 Encourage people to be active, involved, participating;
- 💡 Promote and support the individual's discovery of personal meaning and application;
- 💡 Recognise and encourage people's right to make mistakes (in the safe environment created);
- 💡 Embrace and accept the beauty of differences;
- 💡 Tolerate uncertainty and ambiguity;
- 💡 Encourage openness, self- and mutual respect;
- 💡 Foster a collaborative process.



Sources

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Theories that support learning through games

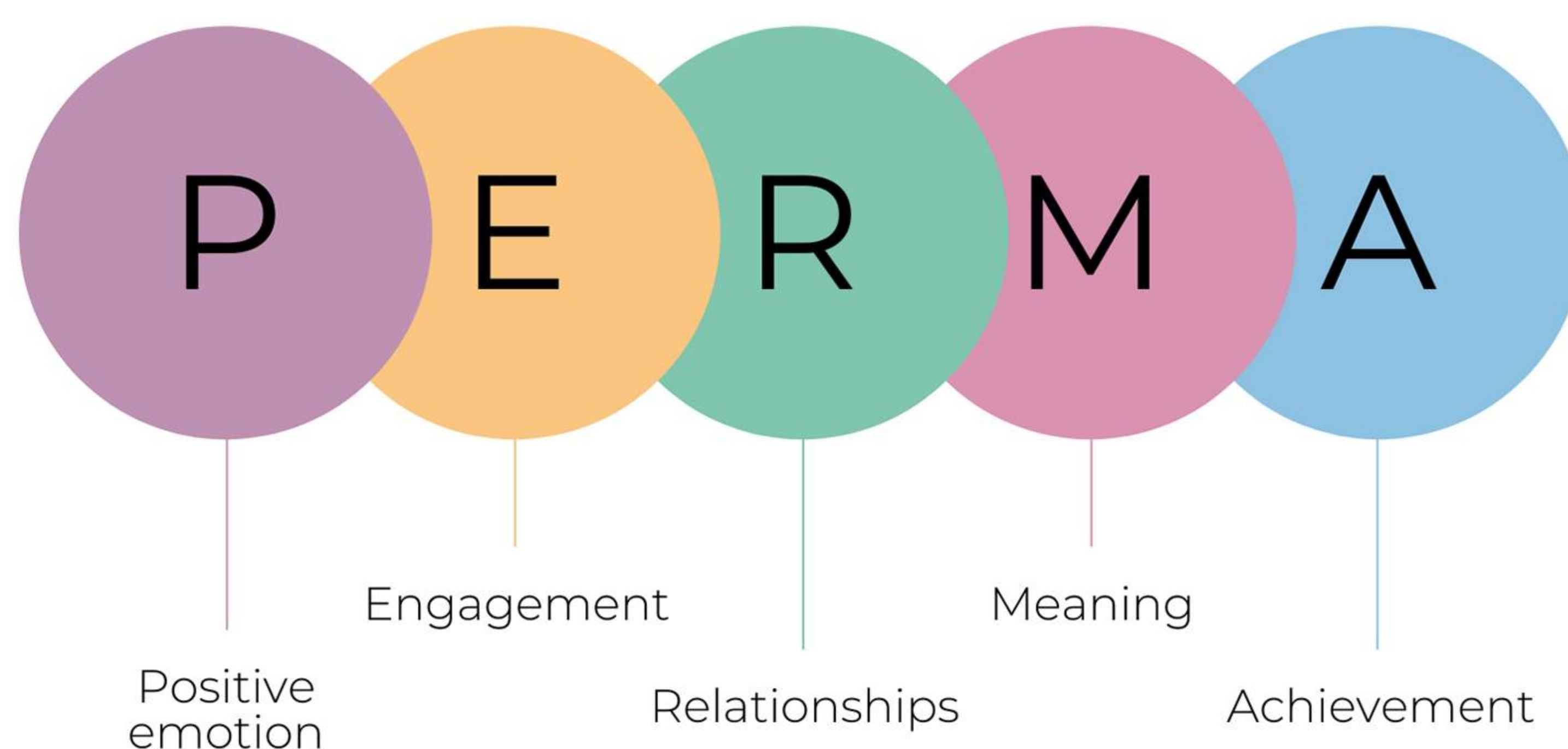
There are some theories we would like to explore more to understand the efficacy of the games as a tool for learning. These, of course, are not the only ones, but they are widely known in other fields such as psychology, sociology, pedagogy etc. In order to comprehend the reasons for the effectiveness of the game, it is important to have an insight of the psychological processes underlying the play of the game as well as to identify the needs of the person who is playing the game, and also to understand his or her motives during the game.

Some of the theories are directly focused on the game and the process of the game, while others have not been developed to explain game functions and processes, yet we would like to analyse them in the context of the game.

SO, LET'S START!

1. PERMA MODEL

Perma model was created by Dr. Martin Seligman (PERMA; Seligman, 2012). He defined five components that people pursue in their lives to achieve higher well-being in their lives. This aspiration towards these five elements is based on a person's intrinsic motivation; that means it is true motivation that keeps a person to go on, not the external aspects and motivators or evaluations. What are the five components of Perma model?



POSITIVE EMOTIONS

Positive emotions play an important role in the well-being, moreover, they can be learned and cultivated. Positive emotions are joy, interest, inspiration, satisfaction, surprise, enthusiasm, optimism, pride, gratitude, hope, love, compassion, amusement, altruism.

As we can see, all these and other emotions are experienced during the game. Learning with the help of games means improving intrinsic motivation through joy, interest, enthusiasm which arise as soon as we engage in the game.

ENGAGEMENT

This component relates to a person's ability to use his or her strength in a new way, to have a challenge that goes together with his or her skills and abilities, and also to be mindful and present in the current moment, to do the thing which is bringing the person joy and satisfaction.

Learning through games supports this component, since each game is a challenge to a person and his or her skills. Games can also help a person to engage and develop his or her abilities in new situations and in a new form.

RELATIONSHIPS

Relationships component in the Perma model is related to a person's individual feeling of being connected to others, receiving support, friendship, love, having strong bonds and meaningful interactions. Since every human is a social being, interactions are very important to improve the person's well-being and feeling of being accepted.

Learning through games supports this component with the help of social interaction that takes place during the game. Either it is a more individual game or a team game, in any case, there is a meaningful common and united activity that keeps players together.



MEANING

This component of Perma model refers to a person's need for a purpose and meaningful life, and also a need to serve higher and greater idea. The Meaning component is connected to the person's values.

Learning through games can help to see a greater idea or common aim between players. Different games are made differently, but there is always a learning outcome for everyone that needs to be highlighted. During the play each individual can connect to his or her values and principles that are guiding him or her through the life.












ACCOMPLISHMENTS

The final component of Perma model refers to the need to achieve personal goals in life, to have self-efficacy, and to feel satisfaction and pride. It is important to follow personal goals which are relevant to a specific person rather than ones set by society from outside.

Learning through games fully supports this component as well, since games are designed in a manner which envisages to set goals and allows to easily follow the progress and to clearly understand results of the game. In a non-competitive game design, the challenge and the goal can be set as a personal challenge encouraging a person to get out of his or her comfort zone and do something the person has never done before.

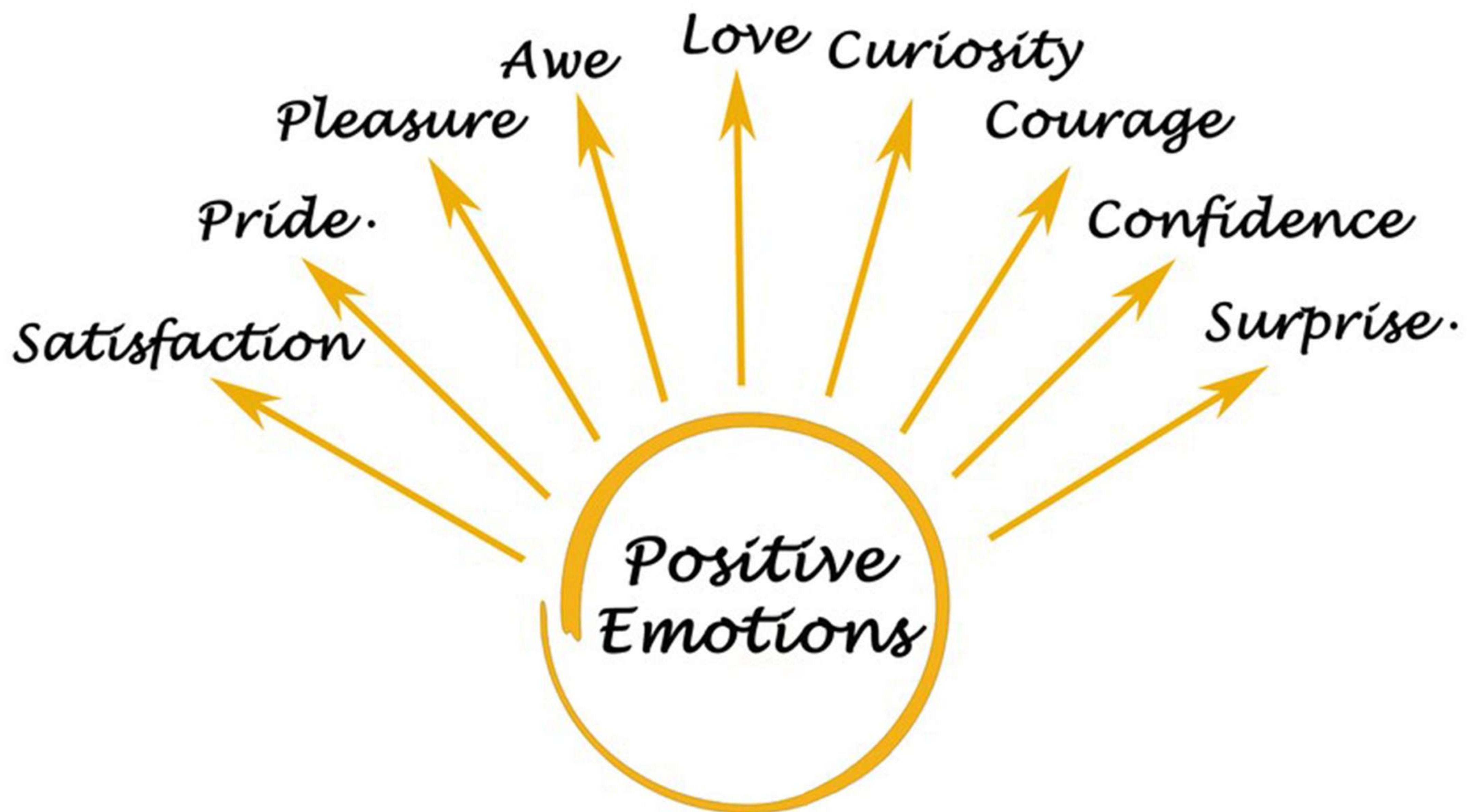


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2. POSITIVE EMOTIONS

Broaden-and-build theory of positive emotions was presented by its author Barbara Fredrickson in 1998. The main idea of the theory is that experiencing positive emotions opens our minds and expands our awareness, as well as helps to develop personal resources such as skills, abilities, knowledge etc.



Source: <https://judetrederwolff.medium.com/happiness-skills-apply-the-principles-of-positive-psychology-through-improvisation-training-6a7d922e9f1c>



Positive emotions are joy, interest, inspiration, satisfaction, surprise, enthusiasm, optimism, pride, gratitude, hope, love, compassion, amusement, altruism.

What are the main benefits of positive emotions in general?

- ☀️ Mental and physical health
- ☀️ Engagement
- ☀️ Higher self-efficacy
- ☀️ Leadership
- ☀️ Job satisfaction
- ☀️ Higher resilience etc.
- ☀️ Relationships
- ☀️ Learning through games enhances all the aspects above, since during the game players experience all kinds of positive emotions which have an impact on their personality and emotional experience in general.

What are the main benefits of positive emotions during the learning through games?

- ☀ Engagement
- ☀ Intrinsic motivation
- ☀ Development of different skills (leadership, teamwork)
- ☀ Development of personal abilities (resilience, self-efficacy, discipline, patience, strategical vision etc.)
- ☀ Learning through emotional and interesting experience is more effective.

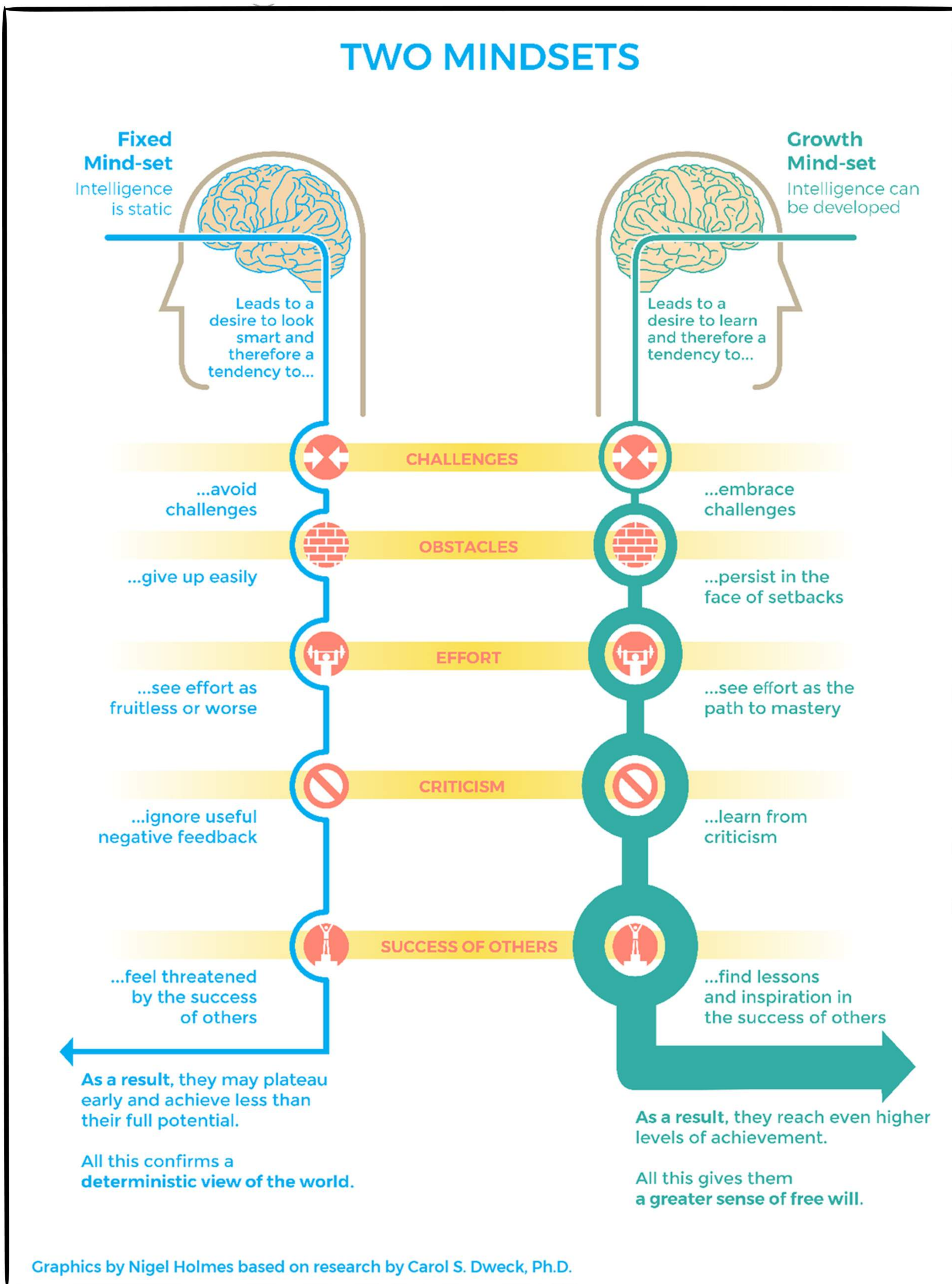


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3. FIXED AND GROWTH MINDSETS

A growth mindset is a belief that abilities and understanding can be improved and developed, while a fixed mindset means that abilities and understanding cannot be changed.



Source: <https://fs.blog/carol-dweck-mindset/>

Carol Dweck, the author of the Mindset Theory (2008), has collected her observations and research in her book showing how important our beliefs are when it comes to our potential in life. What is our reaction when we face difficulties during the game? Are we throwing the game away? Or are we trying to find out what kind of wrong move we made? How to become better next time?

The Mindset Theory of fixed and growth mindsets shows us the need to recognise some behavioural patterns and deeper beliefs we have and to replace them with the ones that can help us to realise our personal potential.

✿ Learning through games creates a favourable environment for a person to see his or her automatic reactions from the outside and possibly replace them with more effective and helpful ones.

✿ The game environment allows people to assume a new role, use new behaviour patterns, react in different ways, feel emotions that are otherwise unattainable.

✿ Appropriate support during the game can help players to recognise their fixed thoughts which may be blocking their achievements.



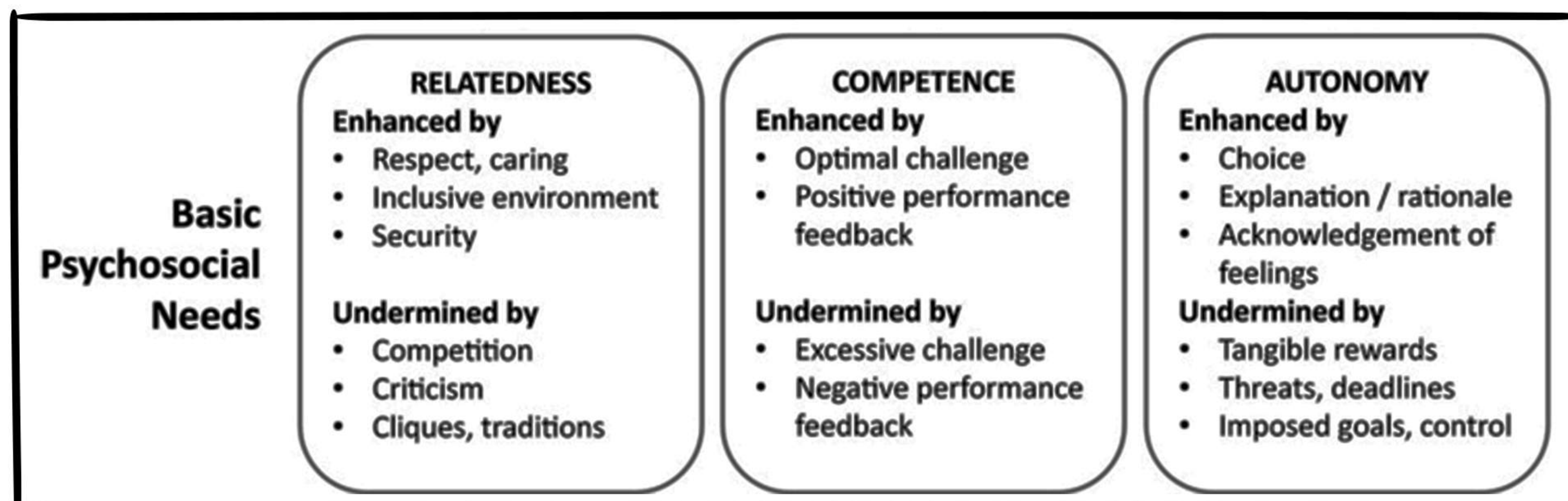
Source: <https://www.mindsetworks.com/science/>

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4. SELF-DETERMINATION THEORY

According to this theory developed by Richard Ryan and Edward Deci, human behaviour is driven by the need for competence, autonomy, and relatedness. This also relates to the learning through games – if these needs of a learner are met, the person will enjoy the game more and engage more actively in the game and the learning process which would result in better learning outcomes.



RELATEDNESS

★ This constitutes the need to belong, to be respected and have a safe environment, to make friends and relationships. That goes together with the main principles of the learning process through games – a safe environment, safe self-expression.

★ Most of the games are based on competition and competitive goals that can be a challenge during the learning process and needs to be facilitated carefully, since secure relationships and common goals can be more helpful in learning situations.

COMPETENCE

★ Competence can be achieved by optimal challenge which means that the challenge and skills and abilities are going hand in hand.

★ During the learning through games it is important to maintain a balance between the challenge and skills, to keep up the interest and engagement.

AUTONOMY

★ This need is met by having control in the process.

★ The need for autonomy is addressed in the learning through games by having a free choice to participate in the game and make your own decisions during the game.



Sources

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📌 <https://tryevidence.com/blog/why-we-play-games-player-types-and-psychology/>

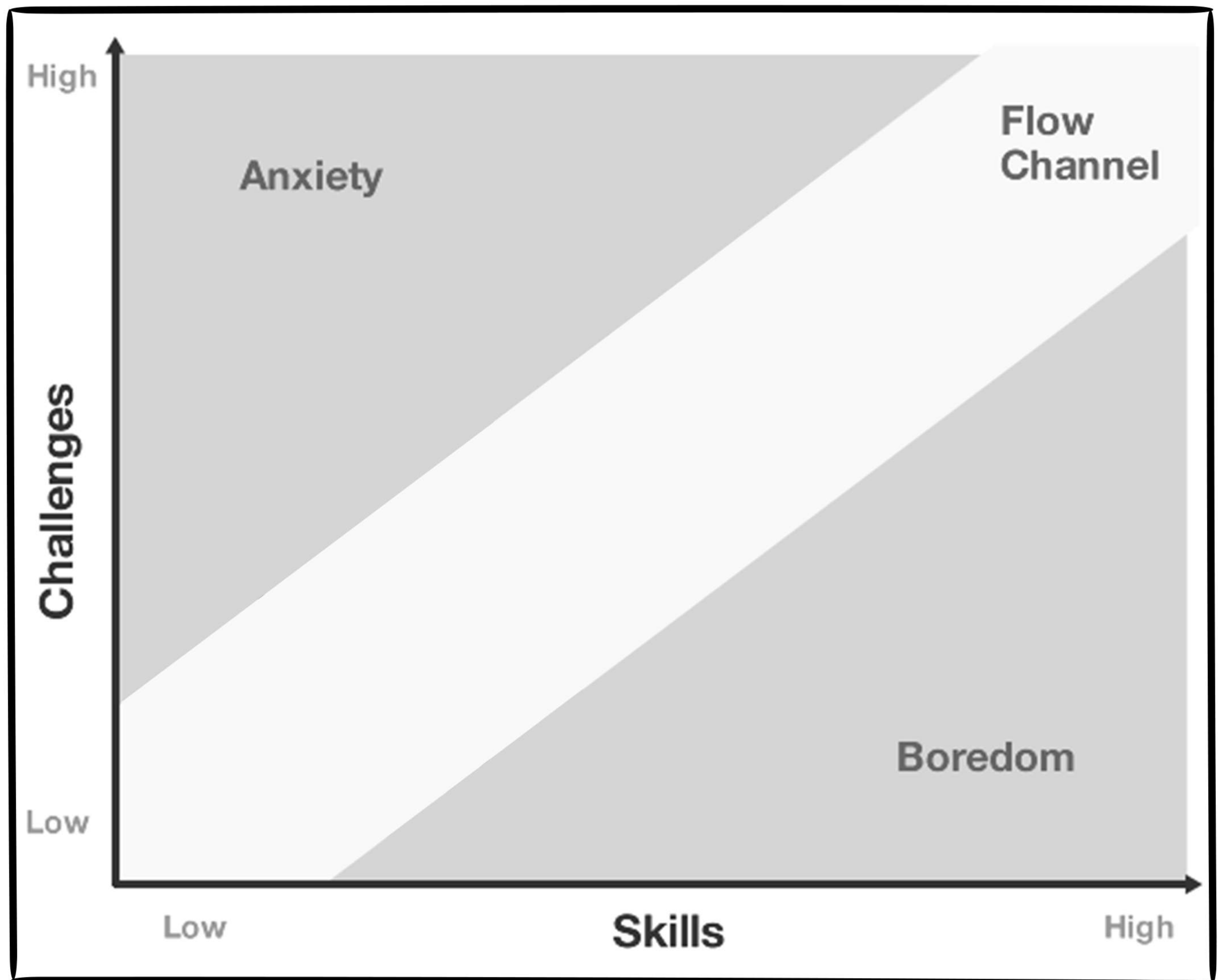
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5.FLOW THEORY

According to the Flow theory by Mihaly Csikszentmihaly, flow is “a state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it” (Csikszentmihalyi, 2008).



Source: https://www.researchgate.net/figure/Flow-Theory-Csikszentmihalyi-1988-1991-1993-cited-in-Hood-2007_fig1_321318455

Flow is the complete engagement in an activity that person finds enjoyable. This activity is challenging and requires skills and knowledge, but it is not too hard or unachievable. Challenge should serve a motivator to try, to test personal skills, to believe in personal ability to achieve the result. During the Flow person can feel excitement and interest, and levels of intrinsic motivation are high.



The author of the theory has defined some of the elements which are useful for achieving this flow:

- ★ We have a challenging task which we believe we can achieve.
- ★ Goals of the activity are clearly defined.
- ★ We focus on the task we do.
- ★ We receive feedback on what we do.
- ★ We feel that "time is flying".
- ★ We are fully engaged in the process.

Rossin, Ro, Klein, & Guo (2009) findings "support a relationship between flow and students' perceived learning of the subject matter, students' perceived skill development, and student satisfaction."

Aspects of the Flow theory are the ones that make the play of the game engaging, challenging, and interesting at the same time, as well as a tool to develop personal skills and abilities in a most engaging way.



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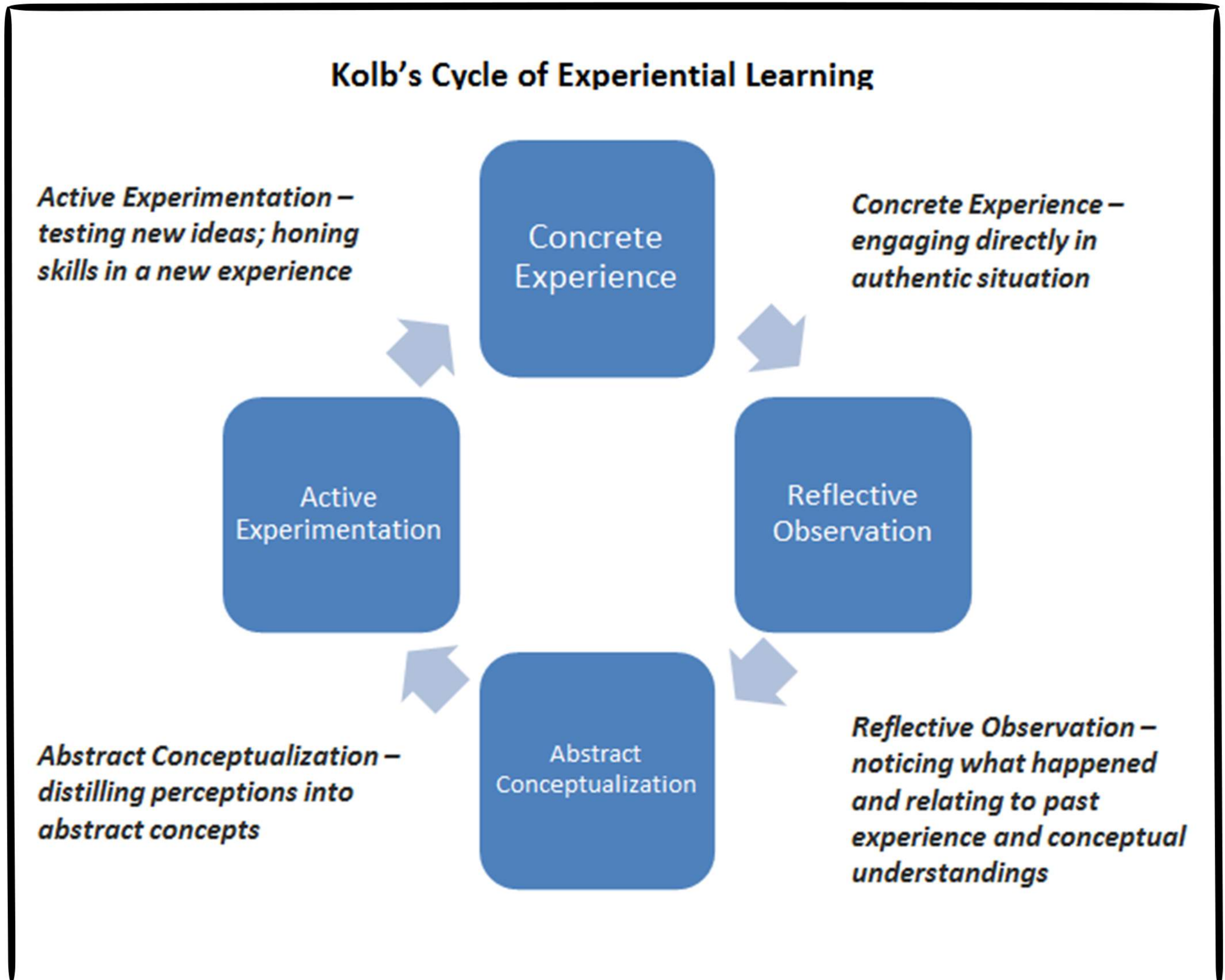
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6. EXPERIENTIAL LEARNING

Experiential learning is a learning process where students learn by doing and by reflecting on the experience. Experiential learning is a learning experience outside the formal classroom and brings learning to real-life environment and real-life situations. Thus the experiential learning improves intrinsic motivation in learners, so that their engagement and interest to learn are higher. Kolb's (1984) cycle of learning depicts the experiential learning in the picture below.



Source: <https://www.bu.edu/ctl/guides/experiential-learning/>

As we can see from the Kolb's Cycle of Experiential Learning, the next step after having concrete experience is to observe the real situation or environment and this is where reflective observation takes place. This phase is very important and should be led by a facilitator that helps learners to reflect on their experience. The role of emotions and feelings in the learning process has been defined as an important part of experiential learning (Moon, 2004), and that is an important element for creating an optimal, positive, and safe experience for the learners.



Jacobson, M. & Ruddy, M. (2004) have defined some questions that could assist in the phase of reflective observation and also help to understand how this experience is connected to real life and can be used in the future:

- ❓ Did you notice?
- ❓ Why did that happen?
- ❓ Does that happen in life?
- ❓ Why does that happen?
- ❓ How can you use that?

If we think about the learning through games, the experiential learning explains how the process of the game should be facilitated. Game is a tool which can help learners to get the experience, to observe, to try, or to hear other experiences, while self-reflection is the learning moment where new conclusions, new ideas, and new knowledge of a person are formed and fixed in the mind in order to be used afterwards in the real life.



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7. GOAL SETTING THEORY

The main idea of the Goal setting theory is that specifically defined and difficult (also challenging) goals can improve performance and achievement of the goals (Locke, Latham, 1990).

HOW DOES THE GOAL SETTING WORK?

- 🎯 Setting a specific and achievable goal helps to keep the focus on the main task instead of concentrating on other, not so important tasks.
- 🎯 Setting a specific and achievable goal energises a person to achieve it and to put more energy in attaining it.
- 🎯 Also, a clear goal promotes higher persistence in person's behaviour.
- 🎯 Setting a goal also helps our mind to organise information and knowledge that are useful and helpful for achieving the goal.
- 🎯 It is important to have regular feedback on the progress of achieving the goal, to keep the motivation to go on.
- 🎯 Playing games is also a goal-oriented activity. It can be concluded that specific and achievable (yet not too easy but requiring effort) goals in the game keep players motivated and engaged.
- 🎯 According to the review conducted by Gustavo Tondello for the HCI Games Group, elements such as badges and leaderboards are used most often in gamification.



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How to create your own educational game?

STEP 0: INTRODUCTION

If you have decided that creating a game is what you need, then let's get started and see what steps you will need to take. It is better to take this journey along with some friends. You will have to confront your ideas and test different elements many times, so the more the merrier. We have identified some stages you will go through, so now you should just stay motivated, think about ideas, and plan ahead. We should tell you in advance that game development is never as easy and pretty as you may think. There will be good days and bad days, inspiration and loss of motivation, ups and downs...

BUT...

You are already among the brave ones who do not accept defeat. You will enjoy all aspects of brainstorming and experience creativity and innovation, always keeping in mind the desired end result. You will also go through the testing phase numerous times and face time pressure and endless working nights as well as other challenges which would arise during the development cycle.



Let's go through all the steps to make sure that you have plenty of time to plan ahead!



STEP 1: PREPARATION

As you are coming closer to the end of this handbook, you are more and more ready to present your game. But before getting on board, it is recommended to take some steps of preparation. Play-discover-reflect!

STEP 2: CREATING A TEAM OR WORKING SOLO

Building a successful team can be tough because it brings together a variety of opinions, values, experiences, goals, and skills. However, teamwork always means more fun, more ideas, and more aspects. Just follow the steps and you will be able to create a magical team.

STEP 3: PLANNING

Developing a game has never been an easy task. Talk about your ideas and requirements, create a clear vision, set working rules, and analyse the possible risks. Planning will be your best friend during the process, so take the time to make it special.

STEP 4: DISCOVERING

Let's start the work with a bit of fun! Play some games to discover what you and other people like. Yes, this is the time before the development process when you get to know more about the needs of your target group and how people see different games in general. So this is it – just start playing and reading reviews.

STEP 5: LEARNING

Do you know how a game can become an educational tool? Or how many things we can actually learn only by playing? Game-based learning elements are going to form the base for your game. So find out what it means.

STEP 6: CREATING THE IDEA

A perfect idea will not just come out of nothing (unless you are a special person who will just wake up one morning with this perfect idea), so before developing your final concept of the game make sure you define your idea perfectly. It will be very useful to collect feedback from everyone, therefore take some time and talk to people.

STEP 7: DEVELOPING THE CONCEPT AND CONTENT

This step involves creating game mechanics, a story, characters, environment, challenges etc. Are you ready to put your ideas together?

STEP 8: PROTOTYPING

Before proceeding with the development, it is the time to make a working prototype to see how the game will work and what changes you need to make. Do not worry too much, just make use of all the materials you can find around the house!

STEP 9: TESTING

Our testers play the game through and give feedback about all the bugs (if any). Make sure all the initially planned mechanics are implemented and changed during the testing period, where necessary.

STEP 10: DESIGNING

This is the final formation of the game after the graphic materials have been created and finalised. We know that not everyone is Monet, so do not be afraid to ask a professional to lend a helping hand where necessary.

STEP 11: FINALISING

You are almost ready. Make the last changes and start to plan the future of your game.

STEP 12: LAUNCHING AND CELEBRATING

There is no need to explain this.
Enjoy your big moment and celebrate your success!



STEP 1: PREPARATION

Soon you will present your game to a wider audience. In order to make the most of this experience, it is worth to do some preparation before starting the planning and development processes. Find some time in this month to sit down alone or with your team to PLAY and DISCOVER.



PLAY SOME NEW GAMES TOGETHER!

- ★ Try out new games that none of you have played before.
- ★ Discover new game mechanics.
- ★ Check how complicated the rules are.
- ★ Analyse and rate the game according to the learning experience.
- ★ Check the design, make notes to yourself marking down what you liked the most.
- ★ And the most important one is the FUN FACTOR – how much did you enjoy the game?



GAME MECHANICS:

- ★ How easy is it to make mistakes in the game?
- ★ How much time is spent on making decisions, as opposed to overheads invested in updating the state of the game?
- ★ Are the decisions obviously good or obviously bad?
- ★ Does the game reward long-term planning, short-term planning, or is it absolutely random and does not reward planning at all?



DISCOVER

- ★ What do you think about...
 - ...the game development process ahead
 - ...of you? the importance of games in learning?
- ★ Why do you want to...
 - ...develop a game?
- ★ With whom do you want to...
 - ...develop a game?
 - ...test your game?
- ★ What...
 - ...is the story (concept) you want to tell with your game?



REFLECT

- ★ What are you looking for?
- ★ What is your favourite game? Explain to a friend why.
- ★ I need to find some time to chat with...
- ★ The game I really want to try out is...
- ★ Today I learnt...
- ★ A good game is...
- ★ I will be proud of my/our work because/if...



START SMALL AND BE READY TO FAIL

Before you get too excited, please keep in mind that learning how to design and develop games takes time and practice, just as any other skill. Your first game will certainly not look like the polished games you are used to, and this is perfectly fine.

So always remember one thing during your journey:

**DO NOT
FORGET
TO PLAY!**

TEMPLATE TO START YOUR GAME PLAN:

NAME OF THE GAME:

DESIGN:

STORY:

RULES:

HOW FRIENDLY IT IS TO NEW PLAYERS?:

STEP 2: BUILD YOUR TEAM

You can choose to work alone, but everything is much more fun in teams. And how we could create better than with full enjoyment and inspiration from others. In a team you complete each other, yet you also need to pay attention to some important aspects when working in teams. There are legendary teams such as the Fellowship of the Ring, the Avengers, or the Expendables which worked pretty well for a while without thinking too much of their capacities and different roles of the team members. But even they could have saved them some extra rounds if they had been more aware of their weaknesses. There are several models in the business sector which can help you to carry out team mapping and identify the possible difficulties before it is too late.

THE BELBIN TEAM INVENTORY

The research conducted by Dr. Meredith Belbin in the 1970's led to the development of Belbin Team Roles, nine clusters of behaviour that individuals adopt when participating in a team. During extensive experiments at Henley Management College, it became clear that teams comprising a balanced mix of team roles outperformed unbalanced teams.



He found and described 9 different team roles which can be grouped into 3 groups. These are team roles rather than type of personalities. One might have different team roles in different teams or maybe not even one. As the professor said, a team of four could represent all the 9 roles. There are no champion roles in this list, each role has its own strengths and weaknesses. An effective team means a balanced mixture of roles, and team success relies on the interdependence and mix of its members.

The author has made a nutshell summary of the roles for students, find out more here:



EDVARD DE BONO - SIX THINKING HATS

“Nominated for the Nobel Prize for Economics in 2005, Edward de Bono is regarded by many as the leading authority in the field of creative thinking, innovation and the direct teaching of thinking as a skill. He is equally renowned for his development of the Six Thinking Hats technique and the Direct Attention Thinking Tools. He is the originator of the concept of Lateral Thinking, which is now part of the language and is listed in the Oxford English Dictionary.”



The Six Thinking Hats is a tool which could be used to improve efficiency of a team. Six hats, six different colors, six different focuses. This playful method can help to find common points more easily by focusing on one aspect of issue at a time. If all members are wearing the same-coloured hats (and changing them for different ones together when necessary), meetings can become more effective, and less time is spent on fruitless discussions.

DR. SUZ BUSINESS CHEMISTRY

Business Chemistry identifies four primary patterns of characteristics: The Driver pattern is characterised by a quantitative and/or technical perspective, logic, directness, and competitiveness. The Integrator pattern is distinguished by empathy, a focus on relationships and consensus, and a comfort with ambiguity. The Guardian pattern is exemplified by practicality, reserve, a structured approach, and a focus on details.

The Pioneer pattern is typified by spontaneity, adaptability, imagination, and a fondness for brainstorming.

Of course, no one fits perfectly into any of these categories. In fact, each person is a unique combination of all the four. Yet most of us find that we strongly associate with one or two of them and understanding which patterns someone associates with gives us a bit of insight into what makes them tick and how we can strengthen our relationships with them.

Find out more about the patterns in these videos



STEP 3: PLANNING

Do you want to produce a successful outcome at the end of your journey as a new game developer? Then this is the time to make a proper plan, a step-by-step guide for yourself which will be the key to your success.



Why is it so important to plan ahead?

First of all, it will substantially improve your time efficiency, you will have clear goals and steps to follow in order to succeed, there will definitely be less mistakes and stuff forgotten, and last but not least, planning ahead will bring a strong feeling of progress and achievement that will strengthen motivation and engagement during the whole process. Yes, we know your passion will keep you going, but better safe than sorry, right?

It is up to you whether you will use a whole set of project planning methodology, a single tool, or just make a to-do list on paper, but here are some common aspects you need to think about and steps to go through.

SUGGESTED TOOLS:

Check them out, they might be useful:

Trell – trello.com/en



Wrike – wrike.com



Timely – memory.ai/timely



TeamGantt – teamgantt.com



STEP 4: DISCOVERING

GOOD DAYS, BAD DAYS - GOOD GAMES, BAD GAMES

It is time to work on your idea and look at it from a different angle. So let's play! You have just finished the planning process, you have some specific idea, and you feel ready to start the development process. During lab-months when your game still exists just on post-its and sketchbooks and only you and your team understand what it is about, it is quite difficult to get feedback or find reference points. It would be useful to read some reviews in these weeks. Try to find out what others like and dislike in games. What are the main angles of reflections?

Here is a useful page where you can see/read reviews: www.boardgamegeek.com



Here you can find a forum about different games and reviews, and there is a video channel with the admins' reviews as well.

A screenshot of the BoardGameGeek website homepage. The page features a navigation bar at the top with links for Browse, Forums, GeekLists, Shopping, Community, and Help. Below the navigation bar, there are tabs for Explore and Dashboard. The main content area is divided into several sections: a featured game overview for 'Trampoline Park' with a colorful illustration of people jumping; a section for 'BGG.CON 2022 Virtual Charity Auction' by DFW_Nerd_Night; a 'We Finally Did It...We Have a Podcast!' announcement by candidrum; a 'SPIEL '22 Preview' by W Eric Martin; and a 'Designer Diary: Lacrimosa' by gerardasc. Below these, there is a 'THE HOTNESS' section titled 'The top 50 trending games today' with a 'SEE ALL >' link. This section displays six game cards: 'Wingspan: Asia', 'Revive', 'Starship Captains', 'John Company: Second Edition', 'Woodcraft', and 'Chc bal: nat'. Each card includes a small image of the game box and a brief description. At the bottom, there is a 'CROWDFUNDING COUNTDOWN' section with a 'SEE ALL >' link and the text 'Projects ending soon'.

STEP 5: LEARNING

Game-based learning is an important factor to consider when developing a game which will also be used as an educational tool. You will need to keep this in mind during the development process, however, do not forget about the game itself. It means that the game should facilitate the learning process but not necessarily serve as a tool for direct educational purposes. We actually believe that you can hardly play a game without learning something, and this will be the key in your hands. "Game based learning is thus the act of appropriating games or game mechanics, recreating the scenario-based, problem oriented learning processes found in games in order to fulfill specific learning purposes", as explained by Mathias Poulsen and Ebba Køber in the GamelT Handbook.

So if we wanted to define games as educational and motivational tools for learning, we would need to follow some basic principles:

FREEDOM

When playing you are applying your knowledge and using your skills voluntarily. Failure is not an option, it is a must. Players need to try again and again, so they begin to develop strategies to overcome the challenge.

CHALLENGE

A story is essential to set the actions of the player. Games emphasise problem solving and creativity in order to get through the challenges the player faces while playing.

SIMULATION

Create a scenario that could be a real-life situations in which players can practice and develop their set of skills and competences.

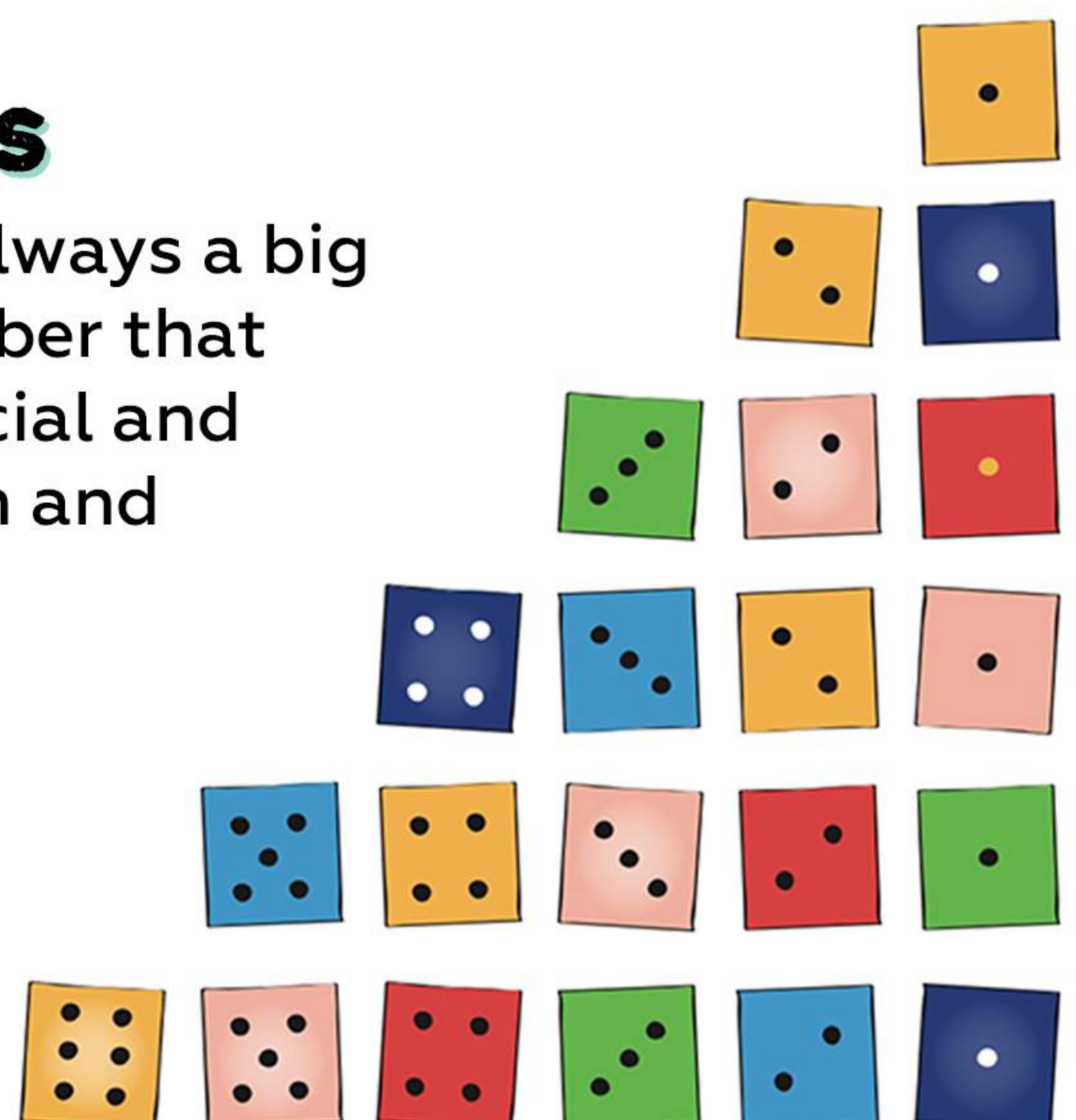
REWARD

Players will be motivated by the possible satisfaction. The end reward is something mostly invisible: learning.

COMPETITIVENESS/COOPERATIVENESS

Competing or cooperating with other players is always a big question in games. Whatever you choose, remember that at the end of the game playing should lead to social and personal well-being and willingness to play again and be better next time.

We recommend keeping in mind that games are interesting for learning purposes exactly because they are games. A good game creates a space for learning and everyone in it will be the winner at the end.




STEP 6: CREATING THE IDEA

You probably got a couple of new ideas and inspirations during discovery phase, you have familiarised yourself with some reviews, and now you have a clear picture of how a perfect game should look like. So what are we waiting for? Just take the idea and let's get started!

You might think it is very easy to come up with a good and original idea, however, this happens very rarely, and it will most likely not be your case.

It is true that sometimes you might really experience a 'eureka' and/or 'aha' moment and the idea just falls into your lap, but more often it is the end result of a long and hard brainstorming process, revision, discussion, refining and so on.

 That is why we would suggest that you do not push so hard for getting the perfect idea straight away, but rather take your time and analyse all the things that come into your mind. How to do it? Start with your friends, family members, colleagues, peer students, or simply anyone you come across and present your idea to them briefly asking for their feedback. When you have diverse feedback from your future target group, you can integrate all the ideas into a concept of your game.

CREATE A PITCH

"An elevator pitch, elevator speech, or elevator statement is a short description of an idea, product or company that explains the concept in a way such that any listener can understand it in a short period of time. This description typically explains who the thing is for, what it does, why it is needed, and how it will get done. Finally, when explaining an individual person, the description generally explains one's skills and goals, and why they would be a productive and beneficial person to have on a team or within a company or project. An elevator pitch does not have to include all of these components, but it usually does at least explain what the idea, product, company, or person is and their value" – thanks Wikipedia for the clear explanation.

When you have finally come up with your idea, you should be able to share it with your target group in a short period of time. Create your own pitch and share the idea with as many people as you can. The feedback will help you finalise your concept and perfectly meet the needs and interest of the target group of your game. (Not to mention it is great for developing your communication skills too – oh, what an advantage!)

TAKE SOME NOTES OF THE FEEDBACK:







Is the concept clear enough?	
Can the game be unique in its type?	
What needs to be emphasised more?	
Is it interesting enough?	
What is the learning outcome of playing?	

*** After getting the feedback you might want to change a few things in the idea of your game before creating the final concept. That is totally fine. Do it, do not hesitate!

STEP 7: DEVELOPING THE CONCEPT AND CONTENT

Many people are eager to create games that are similar to those they love to play themselves, but in most cases, this would cause a lot of confusion. What we like to play and what we can develop do not necessarily go hand in hand. You should always keep in mind that you are developing a game which also aims to facilitate some learning and development of users. Can you imagine doing it with zombies? Good for you! Go with the idea and create the context of the game!

No matter what you decide, remember that the game is not only a tool for learning but most importantly it is a tool of enjoyment. Fun factor is a necessary factor of all games. But let's go through all the elements you should consider:

-  Basic elements of my game
-  Name of the game
-  Target group
-  Number of players
-  Time to play
-  Type (board game, card game, deck building, strategic, party game etc.)

Please keep in mind that every thought and idea should be tried first. Maybe start with kids, they are usually very truthful and share their opinion openly. The more you play the game, the more it will develop, the mechanics will work more smoothly, and the rules and the main characteristics will become clearer.



**YOU NEVER KNOW WHAT WORKS UNTIL YOU TRY IT!
SO KEEP TRYING.**

SPECIFIC ASPECTS OF YOUR GAME YOU NEED TO THINK ABOUT DURING DESIGNING:

Victory conditions:	
Rules:	
Theme:	
Components:	
Mechanics:	
Time to play:	
Design elements:	
Message, learning possibilities:	

STEP 8. PROTOTYPING

HANDS-ON APPROACH

It is time to create. Create a prototype for your game. At first one month might seem like a long time for creating a prototype but during the process you will soon discover that it is in fact not as long as you thought.

EVERYTHING STARTS WITH THE ALPHA

Paper, scissors, pencils, dice (if necessary). For the very first version, it is enough. It is definitely enough for your team to try out the game. Check the mechanism. See what is working and what is not. Get an inspiration for the design. What is the reasonable size of certain tools of the game?

Check, for example, the Tortuga 1667, the actual board of the game is not bigger than a keyboard.



AFTER THE ALPHA AND SEVERAL TRYOUTS INVOLVING IT, NOW IT IS THE TIME TO DESIGN THE PROTOTYPE.

Since the aim is to convince others that this is a fantastic game, try to find a design which represents your ideas the most.

Get some inspiration from other games. **Which design of games your team finds most attractive?**

CHECKLIST:

- A** Get the physical prototype ready. It is too much of a trouble to do this on Tabletop Simulator, and you need data based on the real physical experience.
- B** Get all the print files ready and perfectly aligned with the manufacturer's templates.
- C** Check everything for grammar and clarity.
- D** Make sure all the components are good, especially in terms of accessibility (physical, visual etc.)
- E** Make sure there are no broken parts left in the game.
- F** Proofread everything again.
- G** Create a spreadsheet to track the following: game number, date, time, players, length of the game, critical stats*, and comments.
- H** Find play-testers

STEP 9: TESTING



It is time to play. I mean, it is time to test.
But before you jump into it, let's make a plan!

THE NUMBER OF PLAYS:

(Consider how many weeks you have ahead, so at least four test plays are done, but, of course, the more you test, the better your game becomes.)

WHEN?

(Calculate the time carefully taking into account that a person who plays your game for the first time will need much more time than the actual length of your game. In general, you can expect that it will take half an hour for reading and understanding the rules, plus the length of the play, plus time for reflection which could be another half an hour.)

WITH WHOM?

(When designing your game you probably had a specific target group or at least an age group in mind, so now at least half of the plays should be with the members of this group. The rest could be with any of your friends who are willing to give feedback.)

HOW?

Try to be in the background. Do not interfere at all. Let the players discover the game. Listen to their comments. Follow the rhythm of the play. You can get valuable information without their direct feedback as well.

ASPECTS OF REFLECTION

You can start from each end of the reflection either from a general questions or specific ones.

Specific aspects can be as follows:

- Victory conditions
- Rules
- Theme
- Components Mechanics Time
- Design Message

YOU

Asking for feedback is not easy, and listening to it could be even more challenging, since somehow we did not learn at school how to give supportive feedback. It is important that you do not start countering the feedback. Just write it down. It is a personal opinion and you asked for it.

So even if you do not agree with it, just write it down. You can learn from it a lot later. And if the players forget to tell you what they liked about the game, ask them specifically.

FEEDBACK 1

Date:

Players:

Feedback:

FEEDBACK 2

Date:

Players:

Feedback:

FEEDBACK 3

Date:

Players:

Feedback:

FEEDBACK 4

Date:

Players:

Feedback:

STEP 10: DESIGNING

Just before you finalise the game, let us give you a checklist which might be helpful for designing.

CHECKLIST ABOUT THE COLOURS:

- ▶ Are they supporting the game and function?
- ▶ Can you see them for a long time?
- ▶ Can you read the text on them?
- ▶ Can colourblind people get the color-coding?

A LITTLE INSIGHT:

“Pay Close Attention to Colors and Color Contrast. Some eye diseases lead to a decrease of sensitivity to color contrast. Many modern design layouts are very detail-oriented, using very subtle colors to create a clean and modern interface design. This is great for someone who has 20/20 vision. However, subtle colors make it difficult for a user who struggles to distinguish colors. Using a white font on a light gray background may look great to you, but another user may not even know there is text there. Never use color as the only means of conveying your message or information. Instead of using color to show something, you should use color to outline and highlight information that is already visible.”

SHAPES, FORMS, ACCESSORIES, AND SIZE

- ▶ How big is the final set of the game?
- ▶ Big enough to play without lenses?
- ▶ Small enough to take it with me on a trip?
- ▶ Are they safe to play with?

MATERIALS

- ▶ How durable are the materials?
- ▶ How many times we can play with them before they break or fade?
- ▶ Are they sustainable?
- ▶ Are they safe to play with?

VISUAL AESTHETICS

- ▶ Is it arousing curiosity?

Please keep in mind that graphic design is a profession, and graphic design for games is even a more specialised area, but still, this is a moment for learning by doing or at least trying.

STEP 11: FINALISING THE GAME

ALMOST READY

IT IS NOT THE END OF THE ROUTE, BUT IT IS A REALLY IMPORTANT MILESTONE. IT IS TIME TO FINALISE THE GAME AND MAKE IT READY FOR THE CONTEST.

STEP 1

Summarise the received feedback and carefully measure them. Of course, big data count a lot, but check the reference people as well.

STEP 2

Analyse your own observations and compare them with the players' feedback.

STEP 3

The most difficult step. Decide.

Decide what you want to keep and what you want to change. Or, in other words, what you need to keep and what you need to change in order to have a great enjoyable game which is fun for others as well.

This step might affect the content and format as well. So just before you finalise the visuals of the game, let me give you a checklist which might be helpful for designing.

Please keep in mind that graphic design is a profession, and graphic design for games is even a more specialised area, but still, this is a moment for learning by doing or at least trying.



STEP 4

When you have the final (beta) version of your game, you need to think about the future. So even before the final version gets its design elements, start to think about promotion. After all, how else will people learn about it?

Ideas:

- ★ Create your own hype video or plan a tutorial
- ★ Contact influencers who will talk about your game
- ★ Participate in gamer events and/or conventions

Do you have some other creative ideas? List them here:

STEP 5

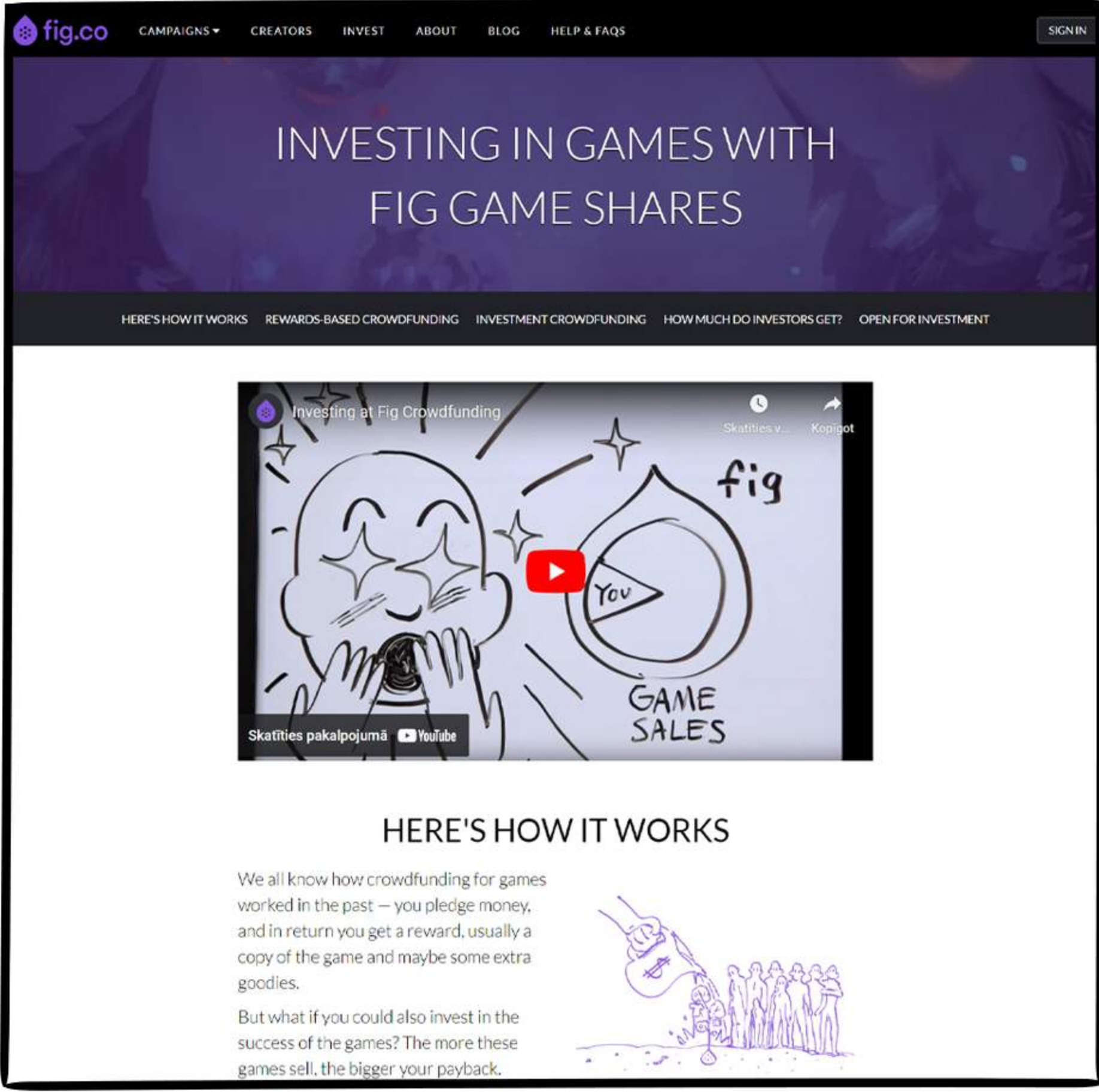
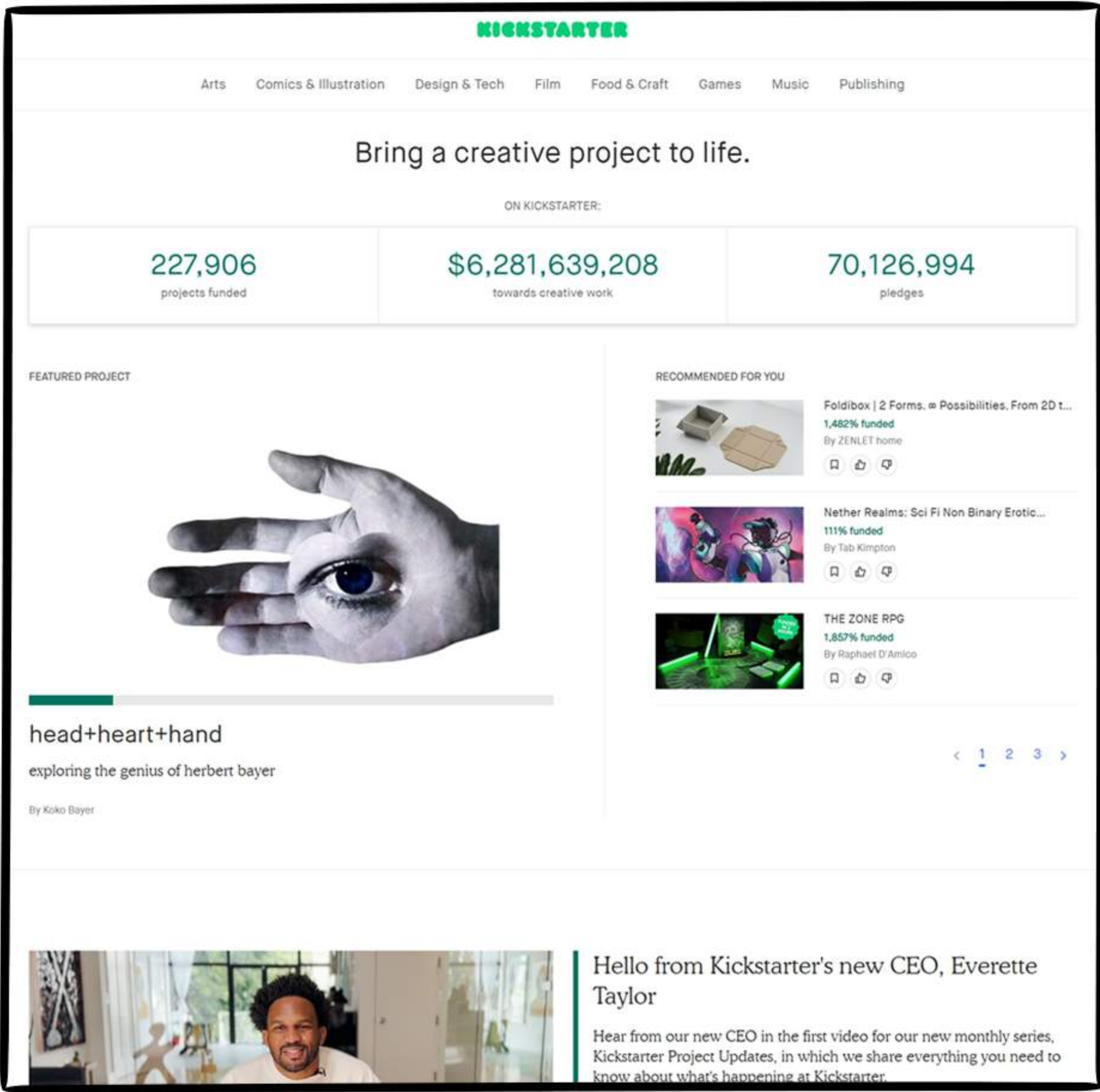
Look for funding opportunities for production. One of the simplest ways to get funding for production is to use crowdfunding opportunities. Did you know that some very successful games were completely crowdfunded?

It is never easy, but at least give it a try. Kickstarter and Fig pages are especially recommended.

www.kickstarter.com



www.fig.co



STEP 12: LAUNCHING AND CELEBRATING

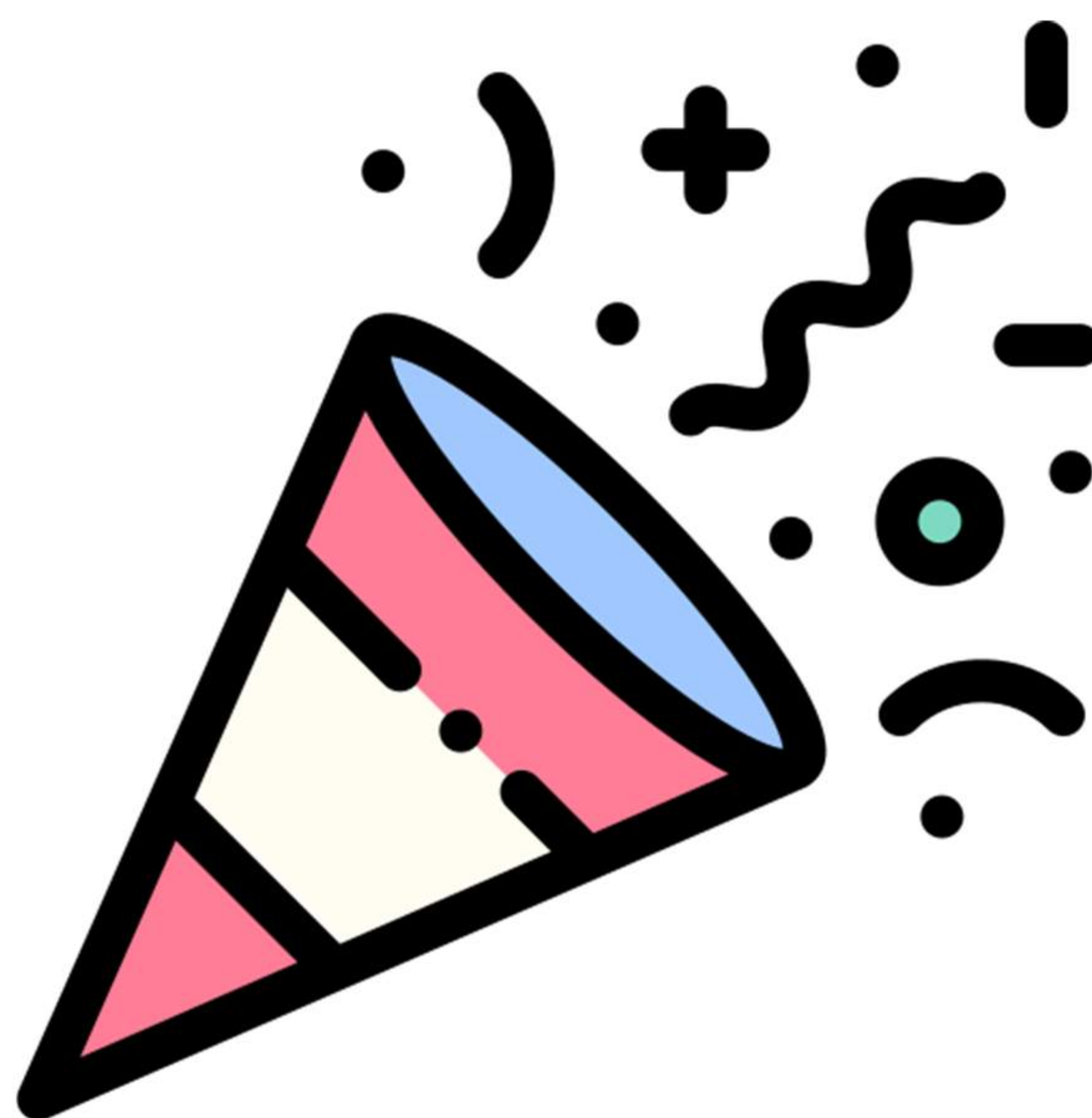
IT IS TIME TO CELEBRATE.

Yes, celebrate yourself and all the hard work and efforts you made!

Did you realise that in this handbook you have gone through a playful learning experience? We believe that game-based learning is not only reachable by playing the game but also by developing it. And yes, you did this!

So congratulations! You have just created something big and broadened a generic competence related to moving from an idea phase through the development to the final product – entrepreneurship.

Besides celebrating your success, find some time to reflect on your learning achievements as well. Go through the key competences of life-long learning and find out what you could develop.



Closing



Every game has goals.



Every game has rules.



Every game has players.



Every game has challenges.



Every game involves motivation.



Every game creates emotions.



Every game is learning.

We invite you to use more games as an educational tools because:

“Play is our brain’s favourite way of learning”

/Diane Ackeman