MINDSET

**MINDSET.
Supporting youth organisations and youth workers for the Identification and Prevention of Youth Gaming Disorder (gaMINg DiSordEr youTh)**
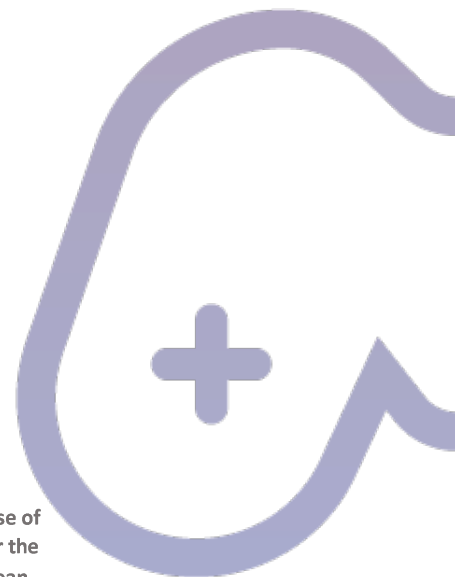
Capacity Building Program

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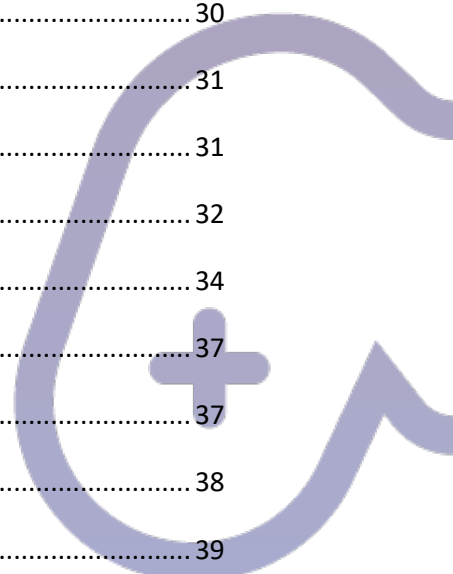Patricia SILVA (Mobiliza-Te)

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Learning Objectives

Skills: Participation, communication, active listening, self-assessment

Knowledge: Aims and scope of the MINDSET project, purpose of the Capacity Building Curriculum

Attitudes: Open-mindedness, willingness to learn new things, willingness to self-assess existing knowledge and attitudes

Behaviours: Respect for the group settings and all participants, engagement with new topics and exploration of its various aspects, participation in activities and discussions

Learning Activities and Flow

1. Welcome and introduction (15 mins)

2. Ice-breaking activity and participants (15 mins)

3. Introduction Understanding the scope of the project (15 mins)

4. Learning outcomes and project objectives (15 mins)

5. Overview of the training program (15 mins)

6. Pre-assessment (15 mins)

Needed materials
- PowerPoint Presentation
- Name tags
- Pre-assessment evaluation
- Overview of the training program

Session 1: Welcome and introduction, Ice-breaking activity

The participants all arrive at the venue, get acquainted with each other and register by filling out the signature list and other relevant documents. It is recommended to create and use name tags for all participants.

A short ice-breaking activity is conducted in order to get to know each other, introduce ourselves and our backgrounds and discuss initial expectations and understanding of the learning activity at hand.

The ice-breaking activity can be chosen by the activity facilitator based on the conditions, resources, group size and schedule. A simple example of an ice-breaking activity is provided below, but it is left at the discretion of each group conducting the activity.

Ice-breaking activity

Take turns around the room, having each participant shortly present:

- Themselves and their background
- The organisation they are a part of / the work they do
- The expectations they have of the training at hand
- How familiar are they with gaming disorder already

Session 2: Understanding the project scope, objectives and learning outcomes

The participants are introduced to the MINDSET project, its aims, objectives and scope. The purpose and organisation of the learning activity is presented, and its core ideas and learning outcomes are discussed.

MINDSET is an Erasmus+ KA2 project that aims to develop tools to better equip and support youth organisations and youth workers to better understand, identify early signs and contribute to the prevention of the development of gaming disorder among young people aged 15-29. The project is implemented by an international consortium of 8 partners in total, namely Succubus Interactive (France), KMOP Education Hub (Greece), Future in Perspective (Ireland), Fundacja Innowacja i Wiedza (Poland), die Berater (Austria), Mobiliza-te (Portugal), Citizens in Power (Cyprus) and Impact Circles (Germany).

In 2018, gaming disorder was classified by the World Health Organization (WHO) in the International Classification of Diseases (ICD-11). ICD-11 is the global standard for diagnostic health information, a tool that is used by health professionals in order to diagnose and make treatment plans for medical conditions. The inclusion of gaming disorder in the ICD-11 list increases the interest of researchers and professionals in the healthcare sector for this issue and highlights the importance of meeting the needs of young people at risk of gaming disorder and professionals that are called to help them.

The first difficult task that professionals are called to perform is to identify if a patient is exhibiting normal or pathological gaming behaviour. It is highly important to be aware of the telling-signs of gaming disorder and how to (begin to) address them, but the recent emergence of the topic did not yet allow for readily-available training or resources.

The decision to integrate gaming disorder in ICD-11 has been preceded by the emergence of treatment programs for people who match the symptoms of gaming disorder all over the world. Additionally, research data from Europe, USA and Japan, has revealed that the Covid 19 pandemic has greatly increased the time young people spend playing video games, also increasing the risk of gaming

disorder, and making the need for tangible solutions and training of relevant professionals increasingly urgent.

Gaming disorder has severe consequences on the mental, physical and social health of the person suffering from it. Internet and video game addictions are associated with psychological and social comorbidities, such as depression, attention-deficit/hyperactivity disorder, alcohol use, anxiety, and poor psychosocial support. The fact that there is no objective framework for diagnosing and/or treating this condition makes it dangerous as we cannot estimate the amount of young people suffering from this condition, and even if professionals do manage to diagnose it, there is little information available about ways of treatment and social reintegration of patients.

The project will provide relevant training to youth workers, enabling them to easier identify possible cases of gaming disorder amongst the young population, allowing the youth workers to take necessary actions improving their services and helping the people affected by this condition.

In short, the objectives of the MINDSET project include:

- Preparing youth organisations and youth workers to identify early signs of gaming disorder and contribute to the prevention of gaming disorder development
- Raising awareness about the negative effects of gaming disorder
- Providing youth organisations and youth workers with the resources and information to recognize the signs of gaming disorder and to differentiate between healthy and unhealthy gaming behaviours
- Raising awareness about the need to develop new policies and initiatives to combat gaming disorder

The COVID-19 pandemic reshaped our daily lives, forcing us to be confined in our houses for long periods of time and grow increasingly isolated. This fact, coupled with the advancements in gaming and internet, changed our daily entertainment model from outdoor activities to digital activities, with gaming being among the most popular within youth. This increased the extent and effects of an already present problem called gaming addiction, which is described as the excessive need for gaming, overshadowing other responsibilities or needs of the

person. Youth workers need an objective framework that teaches them how to identify this condition and how to best approach and combat it from their position. The key problems that make it currently hard to create such a framework, as well as the relative needs include:

- Gaming disorder identification

There is no clear framework of gaming disorder identification among young people, creating the need for the development of a clear guide that will help youth workers identify the condition and disambiguate it from normal gaming behaviour. This guide will allow youth workers to identify gaming disorder cases, as well as early signs of the condition before it becomes problematic

- Education materials and manuals

After the identification of gaming disorder, youth workers must find a way to handle the people suffering from it and better serve their needs. This means that specially designed education materials and manuals need to be created, aiding their efforts and improving their services. These materials need to instruct youth workers about the correct way of tackling the condition, the correct way of approaching young people who suffer from gaming disorder and ways of better integrating people into their activities and services, as well as ways to adapt their services and activities towards more fitting formats.

- Capacity building program

Capacity building activities for youth workers that communicate and cooperate with gaming disorder patients need to aim at improving the knowledge base of youth workers around this condition. This knowledge base needs to include appropriate reporting and referral procedures. Youth workers also need to build up a degree of familiarity with institutions, organisations and initiatives that provide services for the inclusion and treatment of gaming disorder patients.

- Policy recommendations

Youth workers and their organisations need to be keeping a close eye on the policies and recommendations that relevant organisations are trying to establish. These policies are often being solidified as international standards that need to be respected, presenting a set of guidelines about the way of providing services

and organising activities. Youth workers are in need of continuous support on this aspect, having improved dissemination and policy design and implementation services.

In short, the key results of the MINDSET project include:

- Handbook for youth
- Organisational change guide for youth organisations
- Capacity Building program for youth workers
- Self-evaluation questionnaire for youth
- Assessment questionnaire for youth workers
- Action sheets
- E-learning platform

Session 3: Overview of the training program

Gaming disorder has severe consequences on the mental, physical, and social health of the person suffering from it. In this regard, the MINDSET project aims to prepare youth organisations and workers to identify the early signs and prevent the development of gaming disorder among youth.

As a first step, the project has conducted extensive qualitative and quantitative research through desk and field research on the national level of the participating countries (France, Poland, Germany, Ireland, Austria, Cyprus, Portugal, and Greece), which resulted in national reports and an overall European report. The research results revealed a wide gap in knowledge as well as empowering opportunities for youth workers. The existing offers are mainly about raising awareness with no significant intervention possibilities in youth work. However, raising awareness only is not enough.

Therefore, it is crucial to build the practical capacities and improve the skills of youth workers to effectively intervene and prevent gaming disorders from becoming problematic. In this regard, as the second step of the project, we built a comprehensive capacity building program with multiple results to provide the most possible tools and methods for youth workers to enable them to counter gaming disorder effectively. A capacity-building program in youth work is of critical importance because it equips youth workers (YWs) with new skills, while strengthening existing ones, enabling them to deliver better support to the young people who they work with. This also increases the relevancy and effectiveness of youth work as aimed by the ERASMUS+ Programme by providing comprehensive youth work that prioritises the mental health of young people. It is also worth keeping in mind that the goal of this capacity-building program is not to replace or build professional health workers and psychologists, psychiatrists, or therapists. But the goal is to sufficiently equip YWs who are concerned as the first defence line, and they play a crucial role in guiding young people to seek support from professionals.

Furthermore, capacity building empowers both the youth workers and their respective organisations, enhancing their potential to affect meaningful change and leave a lasting positive impact on young people's lives. This process also

infuses organisations with resilience, preparing them to effectively handle changes, setbacks, or difficulties. In the long run, capacity building contributes to the relevancy, quality, innovation, and sustainability of youth organisations by fostering a skilled and capable network of trained YWs that ensures the continuity of valuable interventions and guidance over time with young people. Ultimately, the capacity building program will further contribute to the organisational change which is another goal of the project, and will also advocate for more health prioritisation as well as sources and resources to sufficiently build the capacities of social workers such as youth workers and be of complementary support to the health systems. This is also in line with the research results that demonstrate that the majority of young people would rather seek help from friends and colleagues or deal with the problem on their own.

The objectives of the Capacity Building Program for Youth Workers are to:

- Provide youth workers (YWs) the necessary knowledge on gaming disorder;
- Enhance the skills of YWs on identifying and preventing gaming disorder in youth;
- Familiarise youth workers with useful tools and methods that assist them in the process of identification and prevention of gaming disorder in a professional manner;
- Building the proactive attitudes/behaviours of YWs towards prioritised mental health;
- Increase the capacities of trainers to train youth workers on the materials produced.

In this regard, the overall guiding learning outcomes of the Capacity Building Curriculum are:

- KNOWLEDGE: provide YWs with the necessary knowledge on gaming disorder (GD);
- SKILLS: equipping YWs with practical tools and methods to actively counter gaming disorder by identifying (early) symptoms of GD, preventing their symptoms from becoming problematic, and assisting those at higher risk to seek professional support.

- **ATTITUDES:** developing the emotional intelligence and empathy of YWs that enables them to perform in complex settings with young people who might be at risk of mental health/GD.
- **BEHAVIOURS:** prioritising mental health and wellbeing in regular work with youth.

The curriculum consists of 7 main topics, each one representing one session that is 60 to 90 minutes. In addition, an introductory unit & an evaluation unit are included. This amounts to a total of 9 sessions to be organised within a 2/3-days program. Each session has its own learning objectives, materials, and sources, step-by-step implementation using active language directed to the youth workers. Each session should use different interactive and stimulating elements. Each session should have a comprehensive PowerPoint (if possible) which will be used as the main input for the e-learning. This can be supported with short readings, videos, and so on. An overview of the topics covered in this curriculum are available in the Table of contents of this document.

Session 4: Pre-assessment questionnaire

At the beginning of the training ahead of us, and following the introduction to the project, its objectives and the overall topic, it is useful to administer a pre-assessment questionnaire to the participants in anticipation of the learning content and methodologies used to deliver it. This serves the purpose of evaluating the entire training program and its curriculum by evaluating the starting point first, conducting the same evaluation exercise at the conclusion of the training, and analysing the differences between the two. Throughout this process, we perform a traceable collection of valuable feedback, which can in turn be used to further adapt, expand, modify the curriculum and its practical application. The pre-assessment questionnaire is attached as an Annex to this document, but can be further modified if necessary, depending on the needs of the group conducting the training.

Annex: Pre-assessment Questionnaire

Please answer the questions below by marking a number on the scale.

SCALE:

1 "totally disagree"

2 "somewhat disagree"

3 "neutral"

4 "somewhat agree"

5 "fully agree"

I understand what constitutes a gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I am aware of the importance of mental health

1◯ 2◯ 3◯ 4◯ 5◯

I understand the synergies between mental health and gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I can differentiate between healthy gaming habits and gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I am capable of identifying common signs and symptoms of gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I understand the effects of gaming disorder on social relationships and mental and physical health

1◯ 2◯ 3◯ 4◯ 5◯

I am aware of the risk factors that contribute to the development of gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I feel well-equipped to recognize and take the first steps of addressing gaming disorder
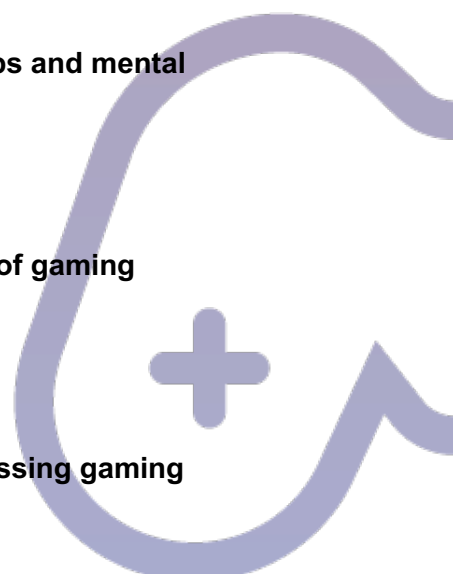
1◯ 2◯ 3◯ 4◯ 5◯

I am aware of the type of activities, support structures and lifestyles with the potential to offset the development of gaming disorder

1◯ 2◯ 3◯ 4◯ 5◯

I feel well-equipped to discuss gaming disorder in an informed, inclusive and non-judgemental manner

1◯ 2◯ 3◯ 4◯ 5◯

What are your expectations of this Capacity Building Program (CBP)?

Which aspects of the CBP's topics are you most interested in?

The second session of the Capacity Building Program (CBP) will focus on some specific topics such as

- What mental health is and its importance
- Definition of Gaming Disorder (GD), including DSM-5 and ICD-11 classification and criteria for gaming disorder
- Some facts about Gaming Disorders, including the identification of common signs and symptoms of gaming disorder and of risks factors
- Case studies or personal stories to illustrate the problem

As usual, Session 2 is characterised by setting its learning objectives, developing the learning activities addressing the topics, and by providing the supplementary information for further readings and material required.

Learning Objectives & Activities

Skills

By developing these skills, youth workers can better support and guide young people who may be struggling with gaming disorder and might be affected by mental comorbidities:

1. **Awareness and Understanding**: Youth workers can develop a comprehensive awareness and understanding of mental health, its importance, and its relationship with disorders like gaming disorder. This includes knowledge of definitions, diagnostic criteria, and the ability to differentiate between healthy and disordered gaming behaviours.
2. **Identification and Assessment**: By learning about the signs, symptoms, and criteria for gaming disorder, youth workers can develop skills in identifying and assessing potential cases among the youth they work

with. This involves recognizing warning signs, using appropriate screening tools, and making informed referrals when necessary.

3. **Communication and Rapport-Building**: Understanding personal stories and case studies can help youth workers develop effective communication skills and the ability to build rapport with individuals affected by gaming disorder. This includes active listening, empathy, and creating a non-judgmental environment for open dialogue.

4. **Intervention and Support Strategies**: Youth workers can acquire skills in implementing appropriate intervention and support strategies for individuals struggling with gaming disorder. This may involve promoting healthy gaming habits, setting boundaries, providing psychoeducation, and connecting individuals to professional resources and treatment options.

5. **Advocacy and Awareness-Raising**: By gaining knowledge about the prevalence, risk factors, and impacts of gaming disorder, youth workers can develop skills in advocating for this issue and raising awareness within their communities. This includes challenging stigma, promoting early intervention, and collaborating with stakeholders to address gaming disorder effectively.

Knowledge

By acquiring this knowledge, youth workers can develop a comprehensive understanding of mental health, gaming disorder, and their interrelationships.

1. **Understanding Mental Health**: Youth workers should gain knowledge about the concept of mental health, its definition, and its importance for overall well-being. This includes understanding the various dimensions of mental health, such as emotional, psychological, and social aspects.

2. **Relationship between Mental Health and Disorders**: Youth workers need to acquire knowledge about the synergies and interconnections between mental health and disorders, particularly gaming disorder. This involves understanding how gaming disorder can impact mental health

and how underlying mental health issues may contribute to the development of gaming disorder.

3. **Diagnostic Criteria and Classification**: Youth workers should develop knowledge about the diagnostic criteria and classification of gaming disorder as outlined in the DSM-5 (Internet Gaming Disorder) and ICD-11 (Gaming Disorder). This includes understanding the specific criteria, symptoms, and duration required for diagnosis.

4. **Differentiating Healthy and Disordered Gaming**: Youth workers need to acquire knowledge that allows them to differentiate between healthy gaming habits and disordered gaming behaviour. This involves understanding the characteristics of each, such as time management, control over gaming, and the impact on various aspects of life.

5. **Signs and Symptoms of Gaming Disorder**: Youth workers should gain knowledge about the common signs and symptoms of gaming disorder, such as preoccupation with gaming, withdrawal symptoms, tolerance, loss of control, and negative consequences in personal, social, or occupational domains.

6. **Understanding Risk Factors**: Youth workers should gain knowledge about the various risk factors that can contribute to the development of gaming disorder among young people. This includes biological, psychological, social, and game-related factors, as well as their complex interplay.

7. **Impact on Well-being**: Youth workers should develop knowledge about the potential effects of gaming disorder on a young person's physical health (e.g., sedentary lifestyle, poor sleep habits), mental health (e.g., anxiety, depression, low self-esteem), and social relationships (e.g., isolation, strained family dynamics).

8. **Personal Experiences and Case Studies**: Youth workers should gain knowledge through exposure to personal stories, case studies, and real-life examples that illustrate the lived experiences of individuals affected by gaming disorder. This can help them better understand the human impact and challenges faced by those struggling with this condition.

Attitudes

By cultivating these attitudes and mindsets, youth workers can approach the topics of mental health and gaming disorder with a constructive and supportive mindset:

1. **Openness and Curiosity**: Youth workers should approach these topics with an open and curious mindset, willing to learn and understand the complexities involved. They should be receptive to new information and perspectives, avoiding preconceived notions or judgments.

2. **Empathy and Compassion**: When learning about personal experiences and case studies related to gaming disorder, youth workers should cultivate an attitude of empathy and compassion. This involves understanding the struggles and challenges faced by individuals affected by the disorder, without judgment or stigmatization.

3. **Growth Mindset**: Youth workers should embrace a growth mindset, recognizing that gaming disorder is a condition that can be addressed and overcome with the right support and interventions. They should believe in the potential for positive change and personal growth, both for themselves and the individuals they work with.

4. **Proactive and Solution-Oriented**: Youth workers should adopt a proactive and solution-oriented attitude when addressing mental health and gaming disorder. This involves actively seeking ways to prevent, identify, and address these issues within their communities, rather than taking a passive or reactive stance.

5. **Collaboration and Inclusivity**: Youth workers should foster an attitude of collaboration and inclusivity when addressing mental health and gaming disorder. This involves recognizing the importance of involving various stakeholders, such as parents, educators, mental health professionals, and the youth themselves, in developing comprehensive and effective strategies.
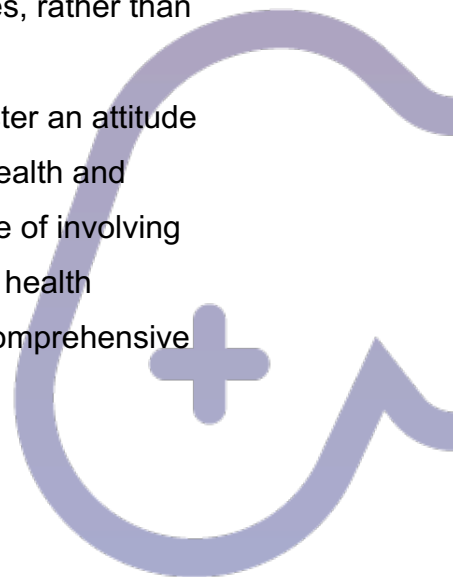
Behaviours

These behaviours should emphasise a holistic, supportive, and evidence-based approach to addressing gaming disorder among youth, focusing on understanding, prevention, and intervention.

1. **Practice Non-Judgmental Active Listening**: Youth workers should actively listen to young people's experiences with gaming without judgment. This involves creating a safe space for open dialogue, showing empathy, and seeking to understand the underlying motivations and challenges related to gaming behavior.

2. **Promote Balanced Gaming Habits**: Youth workers should encourage and model healthy gaming practices. This includes helping young people set reasonable time limits, prioritize other activities, and maintain a balance between gaming and other aspects of life such as academics, physical activity, and social interactions.

3. **Implement Evidence-Based Interventions**: Youth workers should utilize evidence-based approaches, such as group-based interventions (GBIs) or cognitive-behavioral therapy (CBT), when addressing gaming disorder. This involves staying informed about current research and best practices in treating gaming disorder.

4. **Foster Supportive Peer Environments**: Youth workers should facilitate peer support and group activities that provide alternatives to excessive gaming. This can include organizing group counseling sessions, workshops, or recreational activities that promote social skills and healthy coping mechanisms.

5. **Collaborate with Stakeholders**: Youth workers should actively engage and collaborate with parents, educators, mental health professionals, and other stakeholders in addressing gaming disorder. This involves sharing information, coordinating interventions, and working together to create a supportive environment for young people struggling with gaming-related issues.

Values

By upholding these values, youth workers can create a supportive and ethical environment for addressing mental health issues and gaming disorder among the youth they work with:

1. **Respect and Dignity**: Youth workers should approach these topics with a deep sense of respect and dignity for individuals affected by mental health issues and gaming disorder. This involves recognizing their inherent worth, avoiding stigmatization, and treating them with compassion and understanding.

2. **Non-discrimination and Inclusivity**: Youth workers should embrace the values of non-discrimination and inclusivity, ensuring that their approach to addressing mental health and gaming disorder is accessible and inclusive to all, regardless of background, identity, or personal circumstances.

3. **Confidentiality and Trust**: When working with individuals affected by mental health issues or gaming disorder, youth workers should uphold the values of confidentiality and trust. This involves maintaining the privacy and confidentiality of personal information shared and fostering an environment of trust and safety.

4. **Empowerment and Self-determination**: Youth workers should value the principles of empowerment and self-determination, recognizing the agency and autonomy of individuals affected by mental health issues or gaming disorder. This involves supporting their ability to make informed choices and actively participate in their own well-being and recovery.

5. **Professionalism and Ethical Conduct**: Youth workers should embody the values of professionalism and ethical conduct in their approach to mental health and gaming disorder. This includes adhering to ethical standards, maintaining objectivity, and providing accurate and evidence-based information and support.
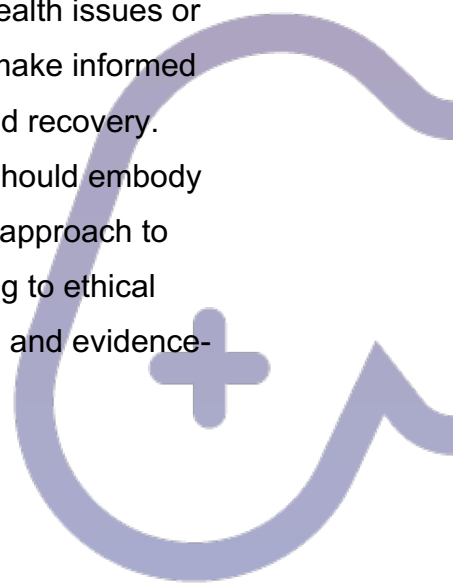
Learning Activities and Flow

The learning content of this chapter is organised in

- a presentation meant to provide youth workers with the necessary knowledge about Gaming Disorder (45'), accompanied by
- engaging activities supporting self- and collective reflection, feedback and exchanges among gamers and between youth workers and gamers (15' for the quiz, and up to 120' for some of the proposed activities), and by
- supporting material for sources, in-depth focus, and the roll-out of the activities (60').

Needed materials

- PowerPoint Presentation for chapter 2
- Devices (mobile phone/computer) with access to the internet
- Exercises
  - Paper / flipchart / post-its
  - Pens /pencils / markers

Session 1 What mental health is and its importance

Mental health is a state of well-being in which individuals realize their own abilities, can cope with the normal stresses of life, work productively, and contribute to their community. It is fundamental to our collective and individual ability as human beings to think, express ourselves, interact with others, earn a living and enjoy life.

Good mental health is crucial for maintaining healthy relationships, making meaningful contributions to the community, and achieving personal well-being. It allows us to adapt to changes and cope with adversity, enhancing our quality of life and supporting the functioning of our society. Globally, **1 in 5 adults** experiences a mental health issue each year, with anxiety and depression being the most common. In Europe, over **84 million** people are affected by mental health conditions, highlighting the need for comprehensive mental health care and support.

Mental disorders are widespread, with anxiety and depression being the most common among youth.

In 2019 (according to WHO[1]), 301 million people had an anxiety disorder, and 280 million suffered from depression.

Various factors can affect mental health, including genetics, life experiences, and environmental factors. Stressful life situations, such as financial problems, a loved one's death, or a divorce, can have a significant impact, as can biological factors like genetics or brain chemistry.

Adolescents and young adults face unique challenges that can impact their mental health, including **academic pressure**, **social media influence**, and

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[1] https://www.who.int/news-room/fact-sheets/detail/mental-disorders

identity development. Supporting the mental health of youth is critical for their transition into healthy and fulfilled adults.

Mental health disorders range from common conditions like **anxiety** and **depression** to more severe disorders such as **schizophrenia** and **bipolar disorder**. Recognizing the signs and symptoms of these conditions is the first step towards seeking help and treatment.

Mental health issues can lead to significant social and economic costs, including decreased productivity, increased healthcare expenses, and a higher burden on social services. Promoting mental health and well-being is essential for building resilient communities.

Effective strategies for promoting mental health include

- increasing **awareness** and **understanding** of mental health issues,
- **reducing stigma**,
- improving **access** to mental health care, and
- **supporting** mental health in schools, workplaces, and communities.

Mental health is a critical component of overall well-being. By working together, we can create supportive environments that promote mental health, offer resources for those in need, and build a healthier, more resilient society.
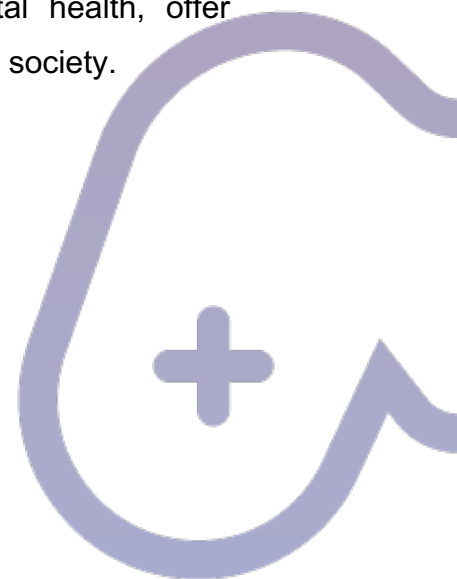
Session 2 Definition of gaming disorder

Gaming disorder is recognized by the World Health Organization (WHO) in the International Classification of Diseases (ICD-11) as a pattern of gaming behaviour characterized by

- **impaired control over gaming**,
- **increasing priority given to gaming over other activities**, and
- **continuation of gaming despite negative consequences**.

For gaming disorder to be diagnosed, the behaviour must be of *sufficient severity* to result in **significant impairment** *in personal, family, social, educational, occupational, or other important areas of functioning*.

The pattern of gaming behaviour may be **continuous** or **episodic and recurrent**.

Gaming disorder is recognized by both the American Psychiatric Association (APA) and the World Health Organization (WHO) as a mental health condition.

The APA includes it in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) as "**Internet Gaming Disorder**", while the WHO classifies it in the International Classification of Diseases, ICD-11 as "**Gaming Disorder**".

While DSM-5 focuses on Internet Gaming specifically and requires *five criteria* for diagnosis, ICD-11 does not specify the gaming medium and uses three essential features for its diagnosis.

Both classifications emphasize the *significant impairment* caused by the disorder in various life domains.
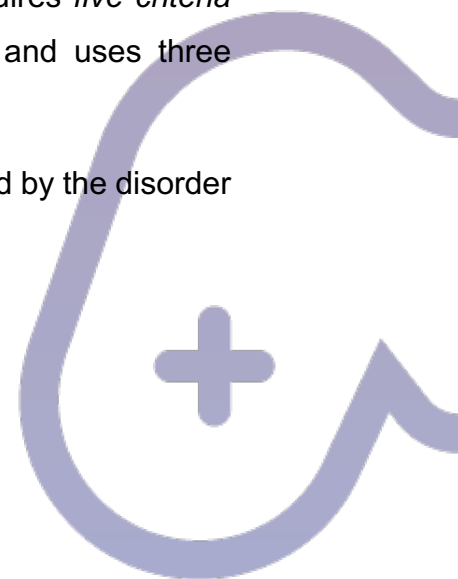
9 DSM-5 criteria for Internet Gaming Disorder

- **Preoccupation with Internet Games**: The individual thinks about previous gaming activity or anticipates playing the next game; Internet gaming becomes the dominant activity in daily life,

- **Withdrawal Symptoms**: When gaming is taken away, these symptoms are typically described as irritability, anxiety, or sadness, but there are no physical signs of pharmacological withdrawal,

- **Tolerance**: The need to spend increasing amounts of time engaged in Internet games,

- **Loss of Control**: Unsuccessful attempts to control the participation in Internet games,

- **Loss of Interest in Previous Hobbies and Entertainment**: As a result of, and with the exception of, Internet games,

- **Continued Excessive Use Despite Knowledge of Psychosocial Problems**: The individual continues to play Internet games despite knowing that excessive gaming is causing social, academic, or occupational problems,

- **Deception**: The individual has deceived family members, therapists, or others regarding the amount of Internet gaming,

- **Escape Adverse Moods**: Use of Internet games to escape or relieve a negative mood (e.g., feelings of helplessness, guilt, anxiety),

- **Jeopardised or Lost a Significant Relationship, Job, or Educational or Career Opportunity**: Because of participation in Internet games.

Table 1: The APA's Nine DSM-5 Criteria for Internet Gaming Disorder

WHO's Three ICD-11 Criteria for Gaming Disorder

- The World Health Organisation (WHO) defines Gaming Disorder as a pattern of gaming behaviour (digital-gaming or video-gaming) characterised by impaired control over gaming, increasing priority given to gaming over other activities to the point where gaming takes precedence over other interests and daily activities, and continued or escalation of gaming despite the presence of negative consequences.

- To be diagnosed with gaming disorder, the behavioural pattern must be severe enough to cause considerable impairment in personal, family, social, educational, occupational, or other critical areas of functioning.

- The pattern of gaming behaviour might be continuous or episodic and recurring. For a diagnosis to be made, the behaviour must be present for at least 12 months, though this time frame might be reduced if all diagnostic criteria are met and symptoms are severe.

Table 2: WHO's Three ICD-11 Criteria for Gaming Disorder

Session 3 Some facts about Gaming Disorder

In this chapter we introduce some content that will be detailed further in the following course chapters.

Prevalence

According to the US National Institute of Mental Health (NIMH) "prevalence is the proportion of a population who have a specific characteristic in a given time period, regardless of when they first developed the characteristic"[2].
Therefore, it can be represented by a very simple formula:

$$\text{Prevalence} = \frac{\text{\# of people in sample with characteristic}}{\text{Total \# of people in sample}}$$

Research on prevalence highlights gaming disorder as a growing public health concern, especially among youth and adolescents who are at higher risk. More research is still needed, but the available data indicates millions of young people across Europe may be impacted.

According to a 2020 report, 72% of the European population aged between 15 and 24 play video games. Over 2 billion gamers worldwide; estimated 3-4% may have gaming disorder.

Systematic review found **global prevalence** around 3.05%, suggesting 60+ million affected. Rates even higher among youth aged 8-18 at 8.5%. Number of cases increasing as gaming becomes more popular each year.

While gaming disorder affects a small percentage of gamers, it's crucial to recognize the signs and symptoms to prevent and address the issue.

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[2] https://www.nimh.nih.gov/health/statistics/what-is-prevalence

Impact of Gaming Disorder

Gaming disorder can lead to various negative physical and mental health outcomes.

Physical Health Effects
- Poor sleep habits and sleep deprivation due to excessive gaming
- Sedentary lifestyle leading to obesity, poor fitness, muscle deconditioning
- Physical inactivity increasing risk of obesity, cardiovascular issues, metabolic problems
- Neglect of basic needs like proper nutrition, hydration, personal hygiene
- Repetitive strain injuries from prolonged gaming sessions without breaks

Mental Health Effects
- Increased stress, anxiety, irritability and mood disturbances
- Social isolation and withdrawal leading to loneliness, depression
- Diminished self-esteem and sense of self-worth
- Impaired cognitive abilities like attention, focus due to gaming preoccupation
- Potential for comorbid mental health disorders like ADHD, anxiety disorders

Social Effects
- Strained relationships with family and friends due to gaming prioritization
- Social disconnection and lack of real-world interaction
- Challenges with school/work performance and attendance
- Financial issues from excessive spending on games/gaming
- Increased interpersonal conflicts due to gaming preoccupation
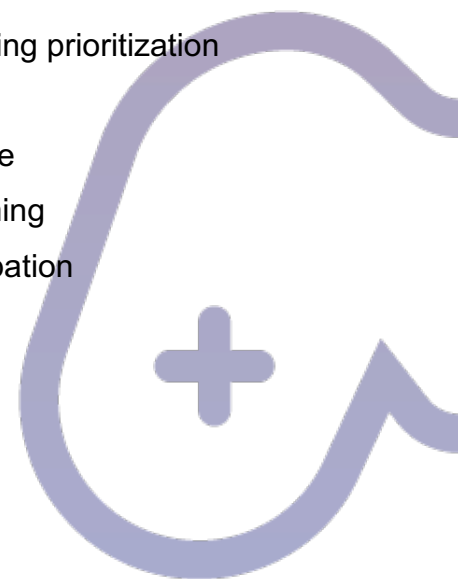
Risk Factors

Some generic risk factors for gaming disorder include:

- Poor impulse control
- Social anxiety or isolation
- Low self-esteem
- Lack of parental involvement or supervision
- Pre-existing mental health conditions (e.g., depression, anxiety)

A more systematic classification of risk factors includes Biological Risk Factors, Psychological Risk Factors, Social Risk Factors, Game-related Risk Factors.

Biological Risk Factors

- Genetic predisposition - some evidence based on brain imaging seems to show that males are more susceptible
- **Dopamine desensitization** from excessive gaming may drive tolerance and cravings
- Differences in brain structure and function in reward processing and decision-making areas

Psychological Risk Factors

- **Escapism** - gaming excessively to avoid stress and real-life problems
- **Social anxiety** and fear of face-to-face interactions
- Need for **instant gratification** and sense of achievement from *in-game rewards*
- Existing mental health issues like depression, ADHD, autism spectrum disorder

Social Risk Factors

- Loneliness and lack of real-life social connections
- Peer pressure to game excessively, especially in multiplayer games
- Problematic family dynamics and lack of parental limits on gaming
- Lower socioeconomic status and education level
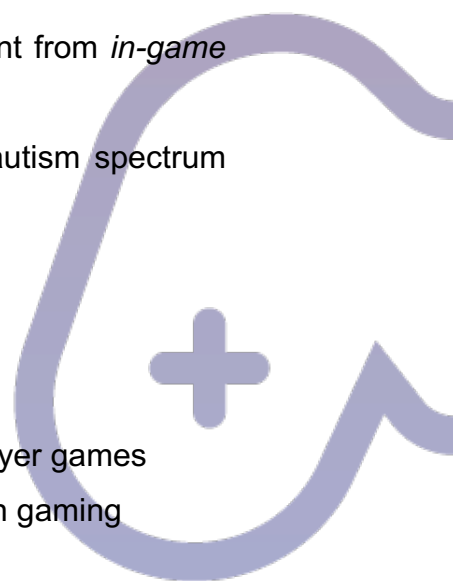
Game-related Risk Factors

- Addictive game mechanics and reward systems designed to keep players hooked
- Immersive virtual worlds that feel more rewarding than real life
- Competitive elements and pressure to advance in multiplayer games
- Accessibility and portability of games on smartphones enable constant access

Common Signs and Symptoms of Gaming Disorder

Some common signs and symptoms of gaming disorder include:

- **Preoccupation with gaming**

- **Withdrawal symptoms** when gaming is taken away

- **Tolerance** (needing to spend more time gaming to achieve satisfaction)

- **Loss of control** over gaming habits

- **Neglecting other interests, hobbies, and activities**

- **Continued gaming** despite negative consequences

- **Deception about the extent of gaming activities**

- **Relationship problems** due to gaming

- **Poor academic or occupational performance**

Preoccupation with Gaming

Individuals with gaming disorder may become preoccupied with gaming, exhibiting:
- Constant thoughts about gaming, even when not playing
- Anticipation of the next gaming session
- Neglect of other interests and activities in favour of gaming

Withdrawal Symptoms

When gaming is taken away or reduced, individuals with gaming disorder may experience withdrawal symptoms, such as:
- Irritability, restlessness, or anxiety
- Sadness or depression
- Difficulty sleeping or changes in sleep patterns
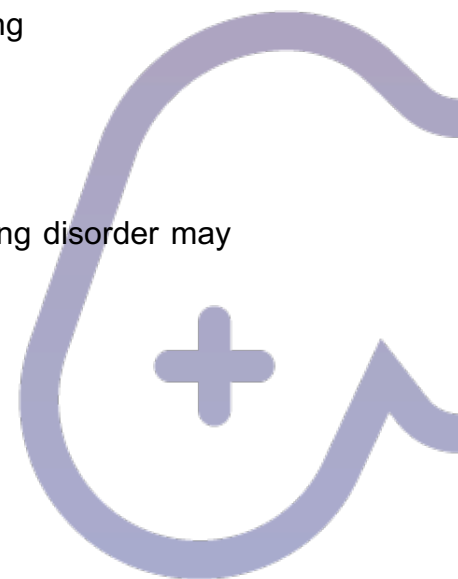
Tolerance

Over time, individuals with gaming disorder may develop a tolerance, requiring more time or more intense gaming experiences to achieve the desired satisfaction or excitement. This can lead to:

- Longer gaming sessions
- Neglect of responsibilities and self-care
- Increased isolation from others

Impaired Control Over Gaming

One of the key signs of gaming disorder is the inability to control or limit gaming activities. This may involve:

- Failed attempts to reduce or stop gaming
- Continuing to game despite negative consequences
- Gaming for longer periods than intended

Gaming's Impact on Daily Life and Relationships

Gaming disorder can result in various negative consequences, including:

- Decreased academic or work performance
- Strained relationships with family and friends
- Neglect of personal hygiene and health
- Financial problems related to gaming expenses

Hiding or Lying About Gaming Habits

Individuals with gaming disorder may attempt to hide or lie about their gaming habits, such as:

- Underreporting the amount of time spent gaming
- Hiding gaming activities from family or friends
- Becoming defensive or angry when questioned about gaming

Prevention and Healthy Gaming Habits

Encourage young people to use self-assessment tools, such as the Gaming Disorder Test (GDTest), to evaluate their gaming habits and identify potential warning signs.

Early identification and intervention can help prevent gaming disorder from developing.

If you suspect a young person is struggling with gaming disorder, it's essential to provide them with information on where to seek help.

This may include mental health professionals, support groups, or specialized organizations focused on gaming disorder.

Encourage young people to maintain healthy gaming habits by:

1. Setting time limits and boundaries for gaming
2. Engaging in alternative activities and hobbies
3. Prioritizing social interactions and relationships
4. Monitoring and reflecting on their gaming habits regularly

In other words, gaming doesn't have to interfere with personal responsibilities or social life.

Addressing gaming disorder involves a comprehensive approach that includes psychotherapy, medication (if necessary), and psychosocial support.

Session 4 Case studies or personal stories to illustrate Gaming Disorder

Here a couple of fictional case studies that illustrate the impact of gaming disorder on young people, the realities and the challenges:

Case Study 1: "Alex's Struggle" (Gamer's perspective)

"My name is Alex, and I'm a 22-year-old recovering gaming addict. It started innocently enough in middle school when I got my first gaming console. Gaming was an escape from the pressures of school and making friends. But it quickly spiralled out of control in high school and college.

I would game for 12+ hours a day, skipping classes, neglecting hygiene, and losing touch with reality. My grades tanked, I lost friends, and my family was at their wits' end trying to help me. I lied constantly about how much I was gaming. On my worst days, I wouldn't eat or even use the bathroom because I couldn't pull myself away from the game.

It took failing out of college for me to hit rock bottom. With the help of counselling and setting strict boundaries, I've been in recovery for over a year now. But it's still a daily battle against the urges to escape back into the virtual world. Gaming disorder is very real and can destroy your life if left unchecked."

Case Study 2: "Sarah's Path to Balance"

From a young age, Sarah was drawn to the world of video games. The bright colours, fantastical stories, and endless challenges captivated her imagination. As she grew older, gaming became more than just a pastime – it became her main priority.

Sarah would come home from school and immediately turn on her console or computer, losing herself in virtual realms for hours. She loved the sense of achievement from levelling up and unlocking new content. Gaming provided an escape from the stresses of everyday life.

However, Sarah's excessive gaming habits soon began to impact other areas of her life. Her grades suffered as she neglected homework assignments. She grew irritable with her parents when they urged her to take breaks or engage in other activities. Sarah's sleep schedule became erratic, and she stopped seeing friends outside of school.

Despite her parents' concerns, Sarah insisted she could control her gaming. She became defensive and secretive about her habits, often lying about how much time she spent playing each day. Sarah's self-esteem plummeted as she felt like a failure for not being able to set boundaries.

It wasn't until Sarah's junior year that she realized her gaming had spiralled into an addiction. She struggled with anxiety and depression, using gaming as a coping mechanism that only made things worse. With the support of a counsellor, Sarah began the difficult process of regaining balance.

She learned to set firm time limits, schedule regular breaks, and find joy in other hobbies like art and reading. While the cravings were intense at first, Sarah persisted. She rebuilt her self-worth beyond the scope of gaming achievements. Most importantly, she developed a healthier relationship with games as just one part of her life, not the driving force.

Case Study 3: Impact on a family (Parent's perspective)

"As a parent, it was heart-breaking to watch my once happy, outgoing son James become a complete recluse due to gaming addiction. He went from a straight-A student and star athlete to failing classes and quitting all his sports teams.
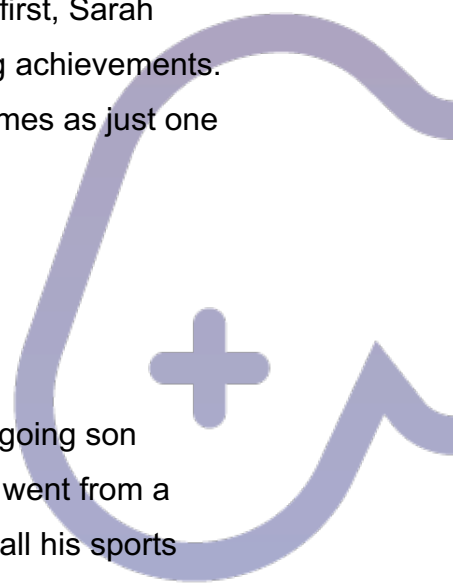
James would be awake gaming all night and sleep all day. He stopped hanging out with friends, showering, or even coming out of his room except for quick meals. We had constant screaming matches when I tried to get him to stop. He would make up elaborate lies about his gaming habits.

I knew something was really wrong, but I didn't know how to help him. James became depressed, anxious and would fly into rages if I tried to take his games away. It wasn't until I found him passed out and took him to counselling that he finally got the help he needed. Gaming addiction tore my family apart for years before we got James into recovery."

Case Study 4: What the others see (Youth Worker's perspective)

"In my years as a youth counsellor, I've seen gaming addiction devastate too many young lives to count. Just recently, I worked with a 16-year-old boy named Jayden who was referred to me for excessive truancy.

When I met with Jayden, it was clear he was sleep-deprived and malnourished. He admitted to gaming upwards of 16 hours a day, only taking breaks to use the bathroom and grab snacks. Jayden had completely withdrawn from school, sports, and his friend group to obsessively play multiplayer games.

His parents were at a loss - they had taken away his consoles multiple times, but Jayden would sneak and play at friends' houses. He was defensive and lied constantly about his gaming. Jayden's grades had plummeted and he was on the verge of being held back a year.

It took months of counselling, setting firm time limits, and getting Jayden into group therapy before he made any progress in controlling his gaming disorder. Relapses are still common, but he's slowly rebuilding his life. As youth workers, we need more training to identify gaming addictions early and get kids the help they need."
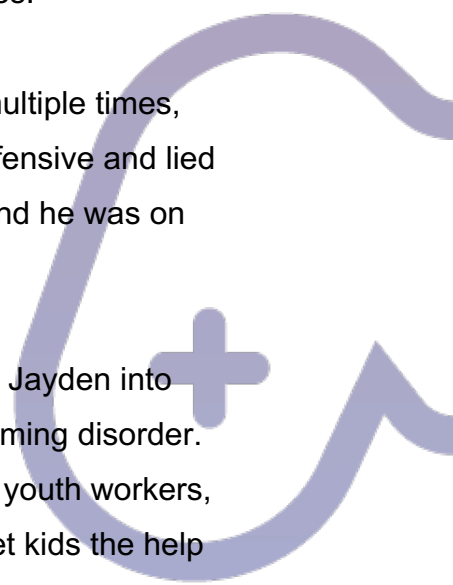
Case Study 5: A real personal account

"**I'm Addicted to Video Games and Dopamine | How I Overcame my Video Game Addiction**", John Sorrentino, 8 Jan 2021, 24m 22s, available at
https://youtu.be/9ar3vZ_SWzg?si=LyfBgjNObApWjei1
In this video, John Sorrentino shares his personal experience with video game addiction in hopes to spread awareness and also inspire others with video game addiction to fight it as well.

These fictional and real accounts from different perspectives highlight the very real struggles and impacts of gaming disorder on mental health, relationships, responsibilities and overall well-being. They underscore the isolation, deception, academic/career impacts, and strains on family and personal relationships that can result from severe gaming addiction as well as the importance of awareness. While recovery is possible with support, these stories highlight how gaming disorder can devastate lives when left unaddressed.

Minds on fire!

QUIZ

Please answer to the following questions. Tick all correct answers.

(Please note: if you are not alone, answer the questions as a team by applying the 1-2-4-ALL facilitation technique to all of them and try to reach a consensual feedback on the answers to provide. Then verify the results.

- Question 1: What are the DSM-5 criteria for Internet Gaming Disorder (IGD)?

Proposed Answers	Correct Answers
1. Preoccupation with gaming	Correct. This is one of the nine criteria for IGD in DSM-5, where the individual is often absorbed in thoughts about previous gaming activity or anticipates playing the next game
2. Withdrawal symptoms when gaming is taken away	Correct. This includes symptoms such as irritability, anxiety, or sadness when unable to play
3. Tolerance—the need to spend increasing amounts of time engaged in Internet games	Correct. This refers to the need to spend more time gaming to achieve satisfaction
4. All of them	Correct. All the listed options are part of the DSM-5 criteria for IGD
5. None of them	Incorrect. The listed options are indeed part of the DSM-5 criteria for IGD

- Question 2: What are the similarities between DSM-5 and ICD-11 criteria for gaming disorder?

Proposed Answers	Correct Answers
1. Both include preoccupation with gaming as a criterion	Incorrect. Preoccupation with gaming is a DSM-5 criterion, but it is not explicitly listed as a criterion in the ICD-11
2. Both require the gaming behaviour to cause significant impairment in personal, family, social, educational, occupational, or other important areas of functioning	Correct. Both DSM-5 and ICD-11 require the gaming behaviour to cause significant impairment
3. Both include withdrawal symptoms as a criterion	Incorrect. Withdrawal symptoms are a DSM-5 criterion, but not explicitly listed in the ICD-11
4. All of them	Incorrect. Not all listed options are similarities between DSM-5 and ICD-11 criteria
5. None of them	Incorrect. One of the options listed is a similarity between DSM-5 and ICD-11 criteria

- Question 3: What are the differences between DSM-5 and ICD-11 criteria for gaming disorder?

Proposed Answers	Correct Answers
1. DSM-5 requires at least five criteria to be met for diagnosis, while ICD-11 does not specify a number	Incorrect. DSM-5 does require at least five criteria to be met, but ICD-11 also has specific criteria that must be met for a diagnosis
2. ICD-11 includes gaming disorder as a diagnosable condition, while DSM-5 lists it under conditions for further research	Correct. ICD-11 includes gaming disorder as a diagnosable condition, whereas DSM-5 includes it in the section recommending conditions for further research
3. DSM-5 focuses on Internet gaming, whereas ICD-11 includes all forms of gaming	Correct. DSM-5 specifies Internet gaming, while ICD-11 refers to gaming behaviour in general
4. All of them	Incorrect. Not all listed options are differences between DSM-5 and ICD-11 criteria
5. None of them	Incorrect. Some of the options listed are indeed differences between DSM-5 and ICD-11 criteria

Let's do it together!

Here are some ideas for engaging activities youth workers could use to engage gamers on gaming disorder. The key is making activities interactive, hands-on and creating space for self-reflection while also educating on responsible gaming. Hyper Island and Liberating Structures provide great frameworks for engaging learning experiences.

Activity #1: reflecting on and sharing own gaming experience

Facilitate a discussion group using Liberating Structures like 1-2-4-All[3].
Have individuals reflect on their gaming habits, then build to group discussions unpacking motivations, struggles, and strategies for balance.

Figure 1: 1, 2, 4, ALL facilitation technique

Questions (one per iteration):

1. What does **motivate** you?
2. What are / have been your **struggles**?

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[3] https://www.liberatingstructures.com/1-1-2-4-all/

3. What are / could be your **strategies** for balance?

4. What have you learnt from this experience?

Activity #2: timed game-free challenge

Have a game-free challenge for a set period where participants replace gaming time with other activities and track progress. Discuss struggles and successes.

Tips:

- You can still use 1-2-4-ALL facilitation technique to support the exchanges, also for deciding what to do, but, at the end, reflect in particular on the perception of **Time**:
  - How did you perceive **setting a time limitation**?
  - Was it hard **stopping** at some point?
  - Do you think you can **manage time by yourself**?
    - If yes, why aren't you able to do it while gaming?
  - If not, why? And what kind of support would you need or like to have?

  Another kind of questions could be about the kind of activities performed:
  - Did you feel engaged?
  - Were you bored?
  - What did you like the most?
  - What did you like the less?
- Try outdoor activities, but do not neglect also indoor ones.
- Try social activities, but do not neglect individual ones.
- Suggested duration of the alternative activity 60'.

Activity #3: alternative activities fair

Run an alternative activities fair where participants can try different hobbies like art, music, sports, etc. Debrief afterward on how the activities made them feel compared to gaming. Suggested duration 90'-120'.

Tips for the debriefing:
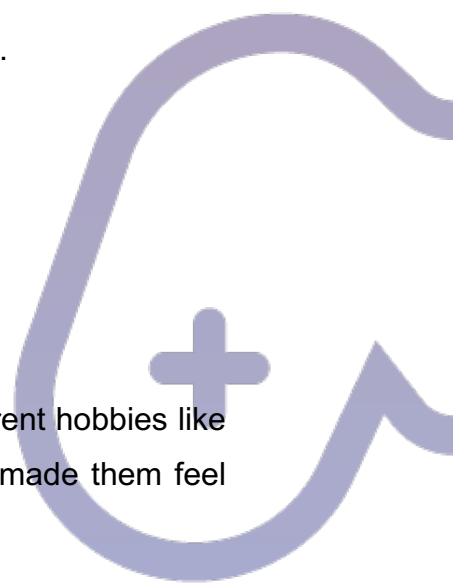
- Use 1-2-4-ALL facilitation technique to support the exchanges. Sample questions to iterate:
    - How do you **feel** now?
    - What have you **liked** the most?
    - What have you liked the **less**?
    - What **similarities** have you found?
    - What **differences** have you found?
    - What have you **learnt** from this experience?

Activity #4: mapping own personal Gamer's Journey

Do a "Gamers Journey" where participants map out their personal gaming story from when they started to present day using visuals and artifacts. Discuss inflection points and what led to more/less balanced gaming.

Tips:

- Try to use the Connecting Stories[4] format to see whether the young people are able to develop a common narrative about their experiences
- You can still use 1-2-4-ALL facilitation technique to support the exchanges, in particular when differences emerge.
- 90'-120'. Make breaks every 20'.

Activity #5: reconnect with your inner self

Try mindfulness activities like guided meditation, yoga, or breathing exercises to build self-awareness of gaming triggers and impulses. Ask for support to a practitioner in order to learn how to do it properly. If possible invite the practitioner. Suggested duration is 10'.

Activity #6: leverage the power of storytelling

Use the Campfire[5] format to share personal experiences or stories related to gaming disorder in an intimate setting. Suggested duration is 30'-60'.

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[4] https://www.icebreakerspot.com/activities/connecting-stories (see also the Annexes of this chapter)

[5] https://toolbox.hyperisland.com/campfire (see also the Annexes of this chapter)

Annexes

1. Age Of Onset, Lifetime Prevalence, Lifetime Morbid Risk

John J McGrath, et al. (2023). "**Age of onset and cumulative risk of mental disorders: a cross-national analysis of population surveys from 29 countries**" paper, published on 'The Lancet Psychiatry' provided a "cross-national analysis [with] data from respondents aged 18 years or older to the World Mental Health surveys, a coordinated series of cross-sectional, face-to-face community epidemiological surveys administered between 2001 and 2022."

- 156 331 participants
  - 85 308 [54·5%] female respondents
  - 71 023 [45·4%] male respondents.
- 29 countries
  - 12 low-income and middle-income countries
  - 17 high-income countries
- including 16 surveys from the 2007 study and 16 more recent surveys with 13 additional countries

13 DSM-IV/DSM-5 mental disorders
• Panic disorder and/or agoraphobia,
• Generalized anxiety disorder,
• Post-traumatic stress disorder (PTSD),
• Social phobia,
• Specific phobia,
• Major depressive disorder,
• Bipolar disorder,
• Alcohol abuse disorder,
• Alcohol dependence disorder,
• Drug abuse disorder,
• Drug dependence disorder,
• Attention deficit / hyperactivity disorder (ADHD),
• Intermittent explosive disorder

Table 4: The 13 DSM-IV/DSM-5 mental disorders

What has been measured?
• **Age-of-onset** (**AOO**): the chronological age at which symptoms of a disease or disorder first appear in an individual. One of the hallmarks of some genetic syndromes is that the age of onset is earlier in individuals with hereditary susceptibility than in other cases (https://dictionary.apa.org/age-of-onset).
• **Lifetime Prevalence**: the proportion of survey respondents with a history of disorder at the time of assessment.
• **Lifetime Morbid Risk**: the projected lifetime prevalence in the sample as of a fixed age.

Table 3: Age of Onset, Lifetime Prevalence, Lifetime Morbid Risk

In the surveys, the WHO Composite International Diagnostic Interview (CIDI), a fully structured psychiatric diagnostic interview, was used to assess age of onset, lifetime prevalence, and morbid risk of thirteen DSM-IV/DSM-5 mental disorders until age 75 years across surveys by sex.

Main results

- By age 75 years, about **one in two individuals** (46.4% male; 53.1% female) will develop at least one of the 13 mental disorders considered.
- Lifetime prevalence for any mental disorder of 28.6% for male respondents and 29.8% for female respondents.
- The peak incidence was at around age 15 years, and the median age of onset was 19 years for male respondents and 20 years for female respondents.
- The incidence of anxiety and mood disorders was higher in female respondents, and the incidence of externalising disorders was higher in male respondents.
- The two most prevalent disorders were alcohol use disorder and major depressive disorder for male respondents and major depressive disorder and specific phobia for female respondents.
- These disorders typically first emerge in childhood, adolescence, or young adulthood.

Recommendations

- Services should have the capacity to detect and treat common mental disorders promptly and to optimise care that suits people at these crucial parts of the life course.

Limitations

- Existing data on age of onset and morbid risk are prone to under-reporting because survey data rely on memory.
- Recall bias might result in a systematic bias against recalling events in the distant past or telescoping the recalled age (e.g., temporally distant events might be incorrectly recalled as having occurred more recently).
- Not all mental disorders were included in the CIDI.
- Comorbidity was not considered either.
- More of 20 years of surveys.

2. Global Burden of Disease Study 2019

GBD 2019 Mental Disorders Collaborators (2022) "**Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019**", The Lancet Psychiatry provided an assessment of "prevalence and burden estimates from GBD 2019 for 12 mental disorders, males and females, 23 age groups, 204 countries and territories, between 1990 and 2019."

What has been measured?

Disability-adjusted life-years (DALYS): a measure of the influence of disease or injury on the length and quality of a person's life. It takes into account the potential loss of years due to premature mortality and the value of years lived with disability. One DALY represents one lost year of "healthy" life (APA: https://dictionary.apa.org/disability-adjusted-life-years).

Years lived with disability (YLDs) is a measure reflecting the impact an illness has on quality of life before it resolves or leads to death. YLDs account for the severity of a disability and are typically weighted so that young adult ages are valued higher than infants or the very elderly (Peterson-KFF Health System Tracker: http://tinyurl.com/yafvmadk).

Years of life lost (YLL) is a measure of premature mortality that takes into account both the frequency of deaths and the age at which it occurs. Definition: One YLL represents the loss of one year of life. (WHO: http://tinyurl.com/mvnefkav).

- Depressive disorders
- Anxiety disorders
- Schizophrenia
- Other mental disorders
- Bipolar disorder
- Conduct disorder
- Idiopathic developmental intellectual disability
- Autism spectrum disorders
- Eating disorders
- Attention-deficit/hyperactivity disorder
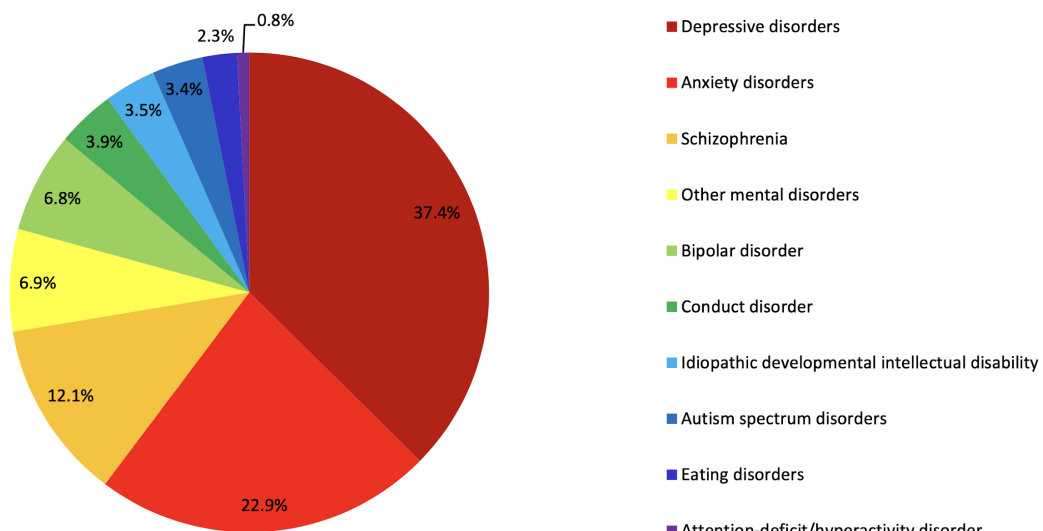
Figure 2: Proportion of global mental disorder DALYs attributable to each disorder for both sexes and all ages in 2019

- GBD 2019 showed that mental disorders remained among the top ten leading causes of burden worldwide, with no evidence of global reduction in the burden since 1990.

- Between 1990 and 2019, the global number of DALYs due to mental disorders increased from 80.8 million to 125.3 million (93.0–163.2), and the proportion of global DALYs attributed to mental disorders increased from 3.1% to 4.9%.
- Age-standardised DALY rates remained largely consistent between 1990 (1581.2 DALYs per 100 000 people) and 2019 (1566·2 DALYs per 100 000 people).
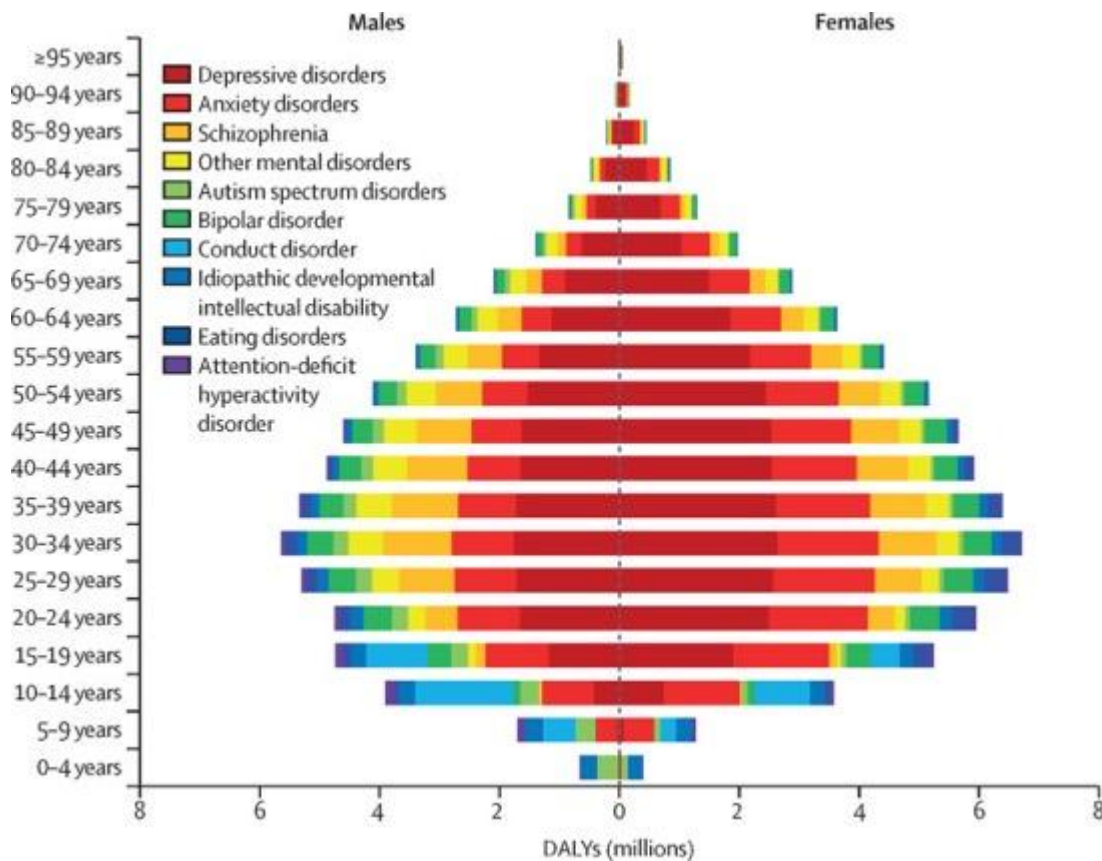
Figure 3: Global DALYs by mental disorder, sex, and age, 2019 (DALYs=disability-adjusted life-years)

- YLDs contributed to most of the mental disorder burden, with 125.3 million YLDs (14.6% of global YLDs) in 2019 attributable to mental disorders. In particular, eating disorders accounted for 17 361.5 YLLs.
- Globally, the age-standardised DALY rate for mental disorders was 1426.5 per 100,000 population among males and 1703.3 per 100,000 population among females.
- Age-standardised DALY rates were highest in Australasia, Tropical Latin America, and high-income North Americ

Table 5: Mental disorders included in GBD 2019. DSM-IV-TR: Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision; ICD-10: International Classification of Diseases and Related Health Problems 10th Revision

Cause	Definition
Major depressive disorder	Involves the presence of at least one major depressive episode, which is the experience of either depressed mood or loss of interest/pleasure, for most of every day, for at least two weeks.
Dysthymia	Involves the experience of chronically depressed mood for most of the day, more days than not, for at least two years (or at least one year in children and adolescents).
Anxiety disorders	Involves experiences of intense fear and distress, typically in combination with other physiological symptoms. Anxiety disorders were modelled as a single cause for "any" anxiety disorder to avoid the double-counting of individuals meeting criteria for more than one anxiety disorder. Epidemiological estimates reporting an outcome for "any" or "total" anxiety disorders were included if they reported on at least three anxiety disorders.
Schizophrenia	Involves the experience of positive symptoms (e.g., delusions, hallucinations, thought disorder) and negative symptoms (e.g., flat affect, loss of interest, and emotional withdrawal).
Bipolar disorder	Bipolar I is characterised by at least one manic episode, which can also alternate with a major depressive episode. Bipolar II is characterised by hypomanic episodes alternating with major depressive episodes.

Cause	Definition
	Cyclothymia is characterised by subsyndromal hypomanic and major depressive episode. Bipolar disorder not otherwise specified is characterised by clinically significant symptoms of bipolar disorder which do not meet criteria for the other diagnoses. We estimated burden for the entire spectrum of bipolar disorder simultaneously, rather than individually for each subtype of the disorder. At a minimum, epidemiological studies needed to report on bipolar I and bipolar II.
Anorexia nervosa	Characterised by refusal to maintain body weight at or above a minimally normal weight for age and height, intense fear of gaining weight, and disturbance in the way in which one's body weight or shape is experienced.
Bulimia nervosa	Characterised by recurrent episodes of binge eating and inappropriate compensatory behaviour to prevent weight gain. These must occur, on average, at least twice a week for three months.
Conduct disorder	Occurs in those under 18 years of age and is characterised by a pattern of antisocial behaviour that violates the basic rights of others or major age-appropriate societal norms.
Attention-deficit/hyperactivity disorder (ADHD)	Characterised by persistent inattention and/or hyperactivity-impulsivity. Diagnosis requires six or more symptoms of inattention or hyperactivity-impulsivity to have persisted for at least six months, in two or more settings; with at least some impairing symptoms being present prior to 7 years of age.

Cause	Definition
Autism Spectrum Disorder	Characterised by pervasive impairment in several areas of development, including social interaction and communication skills, along with restricted and repetitive patterns of behaviours and/or interests. Symptoms must be present in the early developmental period, cause clinically significant impairment, and not be better explained by intellectual impairment or global developmental delay.
Other mental disorders	A residual cause within GBD which incorporates disability from an aggregate group of personality disorders. Personality disorders are characterised by pervasive, inflexible and maladaptive patterns of behaviour and inner experience which are markedly different from what is considered to be acceptable in the individual's culture.
Idiopathic developmental intellectual disability	Idiopathic developmental intellectual disability modelled as part of the intellectual disability impairment envelop in GBD 2019. Idiopathic developmental intellectual disability arises from any unknown source after the prevalence of all other sources of Intellectual Disability is accounted for.

YLDs

All ages	0–14 years	15–24 years	25–49 years	50–69 years	≥70 years
2 Depressive disorders	5 Conduct disorder	2 Depressive disorders	3 Depressive disorders	5 Depressive disorders	11 Depressive disorders
8 Anxiety disorders	8 Anxiety disorders	4 Anxiety disorders	6 Anxiety disorders	16 Anxiety disorders	19 Anxiety disorders
20 Schizophrenia	18 Idiopathic developmental intellectual disability	12 Bipolar disorder	9 Schizophrenia	19 Schizophrenia	27 Other mental disorders
27 Other mental disorders	23 Autism spectrum disorders	13 Conduct disorder	19 Other mental disorders	22 Other mental disorders	36 Schizophrenia
28 Bipolar disorder	24 Depressive disorders	22 Schizophrenia	20 Bipolar disorder	27 Bipolar disorder	45 Bipolar disorder
38 Conduct disorder	39 ADHD	28 Eating disorders	36 Eating disorders	52 Autism spectrum disorders	63 Autism spectrum disorders
43 Idiopathic developmental intellectual disability	54 Bipolar disorder	30 Idiopathic developmental intellectual disability	42 Autism spectrum disorders	64 Idiopathic developmental intellectual disability	87 Idiopathic developmental intellectual disability
46 Autism spectrum disorders	65 Eating disorders	32 Autism spectrum disorders	44 Idiopathic developmental intellectual disability	133 ADHD	152 ADHD
55 Eating disorders	92 Schizophrenia	36 Other mental disorders	86 ADHD	NA Eating disorders	NA Eating disorders
84 ADHD	94 Other mental disorders	60 ADHD	NA Conduct disorder	NA Conduct disorder	NA Conduct disorder

Figure 4: Rankings of YLD and DALY rates for mental disorders by all ages and five age groups for both sexes combined, 2019

Mental disorders were ranked out of all Level 3 causes within the Global Burden of Diseases, Injuries, and Risk Factors Study. Disorders are ordered from highest to lowest ranking for the all ages group. Each colour represents a different mental disorder. Grey cells marked NA show disorders for which burden was not estimated within the age group. ADHD=attention-deficit hyperactivity disorder. DALYs=disability-adjusted life-years. YLDs=years lived with disability.

DALYs

All ages	0–14 years	15–24 years	25–49 years	50–69 years	≥70 years
13 Depressive disorders	22 Conduct disorder	4 Depressive disorders	6 Depressive disorders	13 Depressive disorders	28 Depressive disorders
24 Anxiety disorders	25 Anxiety disorders	7 Anxiety disorders	15 Anxiety disorders	33 Anxiety disorders	43 Anxiety disorders
42 Schizophrenia	49 Idiopathic developmental intellectual disability	32 Bipolar disorder	22 Schizophrenia	41 Schizophrenia	66 Other mental disorders
64 Other mental disorders	56 Autism spectrum disorders	34 Conduct disorder	36 Other mental disorders	55 Other mental disorders	82 Schizophrenia
67 Bipolar disorder	57 Depressive disorders	42 Schizophrenia	39 Bipolar disorder	62 Bipolar disorder	94 Bipolar disorder
84 Conduct disorder	84 ADHD	51 Eating disorders	65 Eating disorders	104 Autism spectrum disorders	120 Autism spectrum disorders
90 Idiopathic developmental intellectual disability	98 Bipolar disorder	54 Idiopathic developmental intellectual disability	73 Autism spectrum disorders	122 Idiopathic developmental intellectual disability	132 Idiopathic developmental intellectual disability
92 Autism spectrum disorders	105 Eating disorders	56 Autism spectrum disorders	77 Idiopathic developmental intellectual disability	154 ADHD	159 ADHD
110 Eating disorders	125 Schizophrenia	59 Other mental disorders	135 ADHD	NA Eating disorders	NA Eating disorders
145 ADHD	127 Other mental disorders	87 ADHD	NA Conduct disorder	NA Conduct disorder	NA Conduct disorder

Figure 5: Rankings of YLD and DALY rates for mental disorders by all ages and five age groups for both sexes combined, 2019
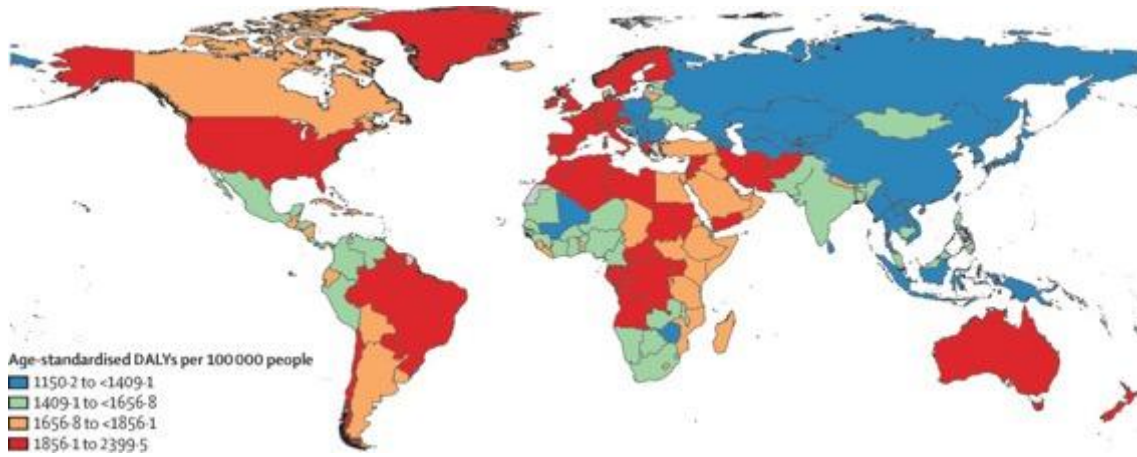
Figure 6: Age-standardised DALYs per 100 000 attributable to mental disorders, 2019 (DALYs=disability-adjusted life-years)
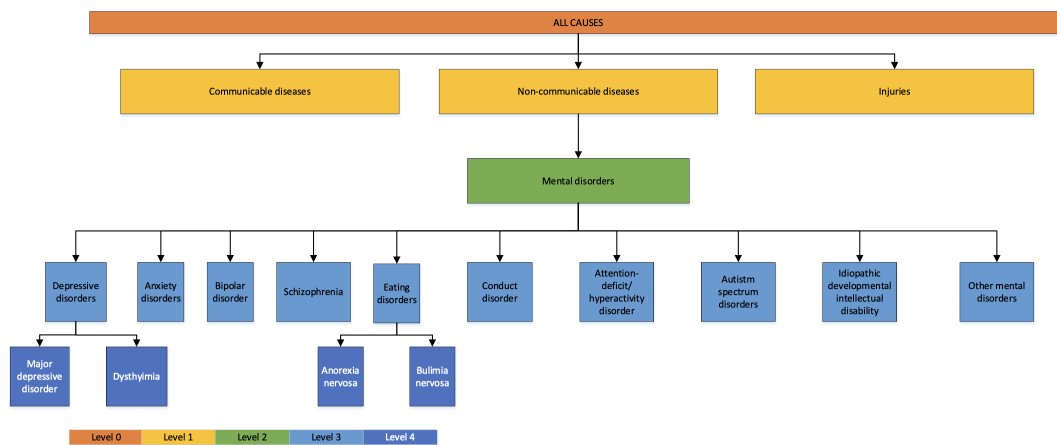
Figure 7: GBD 2019 cause hierarchy for mental disorders

YLDs/DALYs for males					
All ages	*0-14 years*	*15-24 years*	*25-49 years*	*50-69 years*	*70+ years*
4/21 Depressive disorders	3/20 Conduct disorder	2/5 Depressive disorders	3/11 Depressive disorders	5/18 Depressive disorders	11/31 Depressive disorders
8/29 Anxiety disorders	10/33 Anxiety disorders	4/9 Anxiety disorders	5/18 Schizophrenia	15/37 Anxiety disorders	21/55 Anxiety disorders
17/43 Schizophrenia	15/40 Autism spectrum disorders	9/29 Conduct disorder	8/20 Anxiety disorders	17/42 Schizophrenia	26/62 Other mental disorders
23/56 Other mental disorders	18/51 ID intellectual disability	12/32 Bipolar disorder	16/31 Other mental disorders	19/50 Other mental disorders	38/84 Schizophrenia
26/64 Bipolar disorder	29/66 Depressive disorders	15/39 Schizophrenia	17/41 Bipolar disorder	29/64 Bipolar disorder	43/93 Bipolar disorder
31/77 Autism spectrum disorders	35/75 ADHD	22/44 Autism spectrum disorders	31/56 Autism spectrum disorders	44/88 Autism spectrum disorders	52/106 Autism spectrum disorders
32/78 Conduct disorder	53/97 Bipolar disorder	27/51 ID intellectual disability	40/73 ID intellectual disability	65/118 ID intellectual disability	91/129 ID intellectual disability
45/92 ID intellectual disability	67/105 Eating disorders	28/54 Other mental disorders	42/77 Eating disorders	120/148 ADHD	146/153 ADHD
63/119 Eating disorders	87/119 Schizophrenia	35/63 Eating disorders	71/120 ADHD	N/A Eating disorders	N/A Eating disorders
71/130 ADHD	89/122 Other mental disorders	46/75 ADHD	N/A Conduct disorder	N/A Conduct disorder	N/A Conduct disorder

Figure 8: All-cause rankings of YLD and DALY rates for mental disorders for males by all ages and five age groups in 2019

Note: This table shows YLD and DALY rankings for each mental disorder. Mental disorders are ranked out of all Level 3 causes within the GBD study. Disorders are ordered from highest to lowest ranking for the overall age group (ie, all ages). Each colour represents a different mental disorder. Cells marked 'N/A' (in grey) show disorders for which burden was not estimated within this age group. ID=idiopathic developmental. ADHD=attention-deficit/hyperactivity disorder. DALYs=disability-adjusted life-years. YLDs=years lived with disability.

YLDs/DALYs for females					
All ages	**0-14 years**	**15-24 years**	**25-49 years**	**50-69 years**	**70+ years**
4/11 Depressive disorders	4/21 Anxiety disorders	2/2 Depressive disorders	4/5 Depressive disorders	4/8 Depressive disorders	11/23 Depressive disorders
8/20 Anxiety disorders	10/29 Conduct disorder	4/5 Anxiety disorders	6/10 Anxiety disorders	15/28 Anxiety disorders	18/33 Anxiety disorders
19/44 Schizophrenia	19/45 Depressive disorders	13/25 Bipolar disorder	11/21 Schizophrenia	19/38 Schizophrenia	29/68 Other mental disorders
29/56 Bipolar disorder	20/50 ID intellectual disability	18/35 Eating disorders	18/35 Bipolar disorder	24/51 Other mental disorders	36/76 Schizophrenia
31/63 Other mental disorders	35/73 Autism spectrum disorders	23/39 Schizophrenia	23/41 Other mental disorders	26/57 Bipolar disorder	41/85 Bipolar disorder
44/88 ID intellectual disability	51/96 Bipolar disorder	26/47 Conduct disorder	33/54 Eating disorders	58/116 ID intellectual disability	80/129 ID intellectual disability
47/92 Eating disorders	56/99 ADHD	28/48 ID intellectual disability	42/65 ID intellectual disability	66/123 Autism spectrum disorders	81/130 Autism spectrum disorders
54/99 Conduct disorder	60/101 Eating disorders	45/64 Other mental disorders	61/99 Autism spectrum disorders	134/155 ADHD	150/157 ADHD
68/120 Autism spectrum disorders	91/122 Schizophrenia	54/79 Autism spectrum disorders	91/137 ADHD	N/A Eating disorders	N/A Eating disorders
98/150 ADHD	94/129 Other mental disorders	68/99 ADHD	N/A Conduct disorder	N/A Conduct disorder	N/A Conduct disorder

Figure 9: All-cause rankings of YLD and DALY rates for mental disorders for females by all ages and five age groups in 2019

Note: This table shows YLD and DALY rankings for each mental disorder. Mental disorders are ranked out of all Level 3 causes within the GBD study. Disorders are ordered from highest to lowest ranking for the overall age group (ie, all ages). Each colour represents a different mental disorder. Cells marked 'N/A' (in grey) show disorders for which burden was not estimated within this age group. ID=idiopathic developmental. ADHD=attention-deficit/hyperactivity disorder. DALYs=disability-adjusted life-years. YLDs=years lived with disability.

Recommendations

- To reduce the burden of mental disorders, coordinated delivery of effective prevention and treatment programmes by governments and the global health community is imperative.
- Research is needed to improve these measures to provide a more accurate picture of the true burden due to mental disorders.

Limitations

- Findings highlighted the limitations of measures for estimating years of life lost for determining the effects of mental disorders on premature mortality.

3. Engaging activities

Connecting Stories

Connecting Stories[6] is a fun and engaging icebreaker activity that encourages small groups to find common experiences or themes between people. Here are the key details about this activity:

Purpose

To create a chain of mini-stories, where each person shares a related memory or experience based on the previous story. This helps participants learn more about one another, discover shared interests, and build connections in a relaxed way.

How to Play

1. Divide participants into small groups.
2. One person starts by sharing a short personal story or experience.
3. The next person then shares a related story or experience that connects to the previous one.
4. This continues around the group, with each person contributing a new mini-story that links to the previous one.
5. The chain continues until everyone has had a chance to share or the group runs out of related stories.
6. The groups share their stories and, optionally, the group with the longest chain is declared winner

Benefits

It promotes active listening, allows people to find commonalities, encourages sharing personal experiences, and helps build rapport within the group.

Variations

The stories can be themed around specific topics like travel, childhood memories, or work experiences to provide more direction if needed.

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[6] https://www.icebreakerspot.com/activities/connecting-stories

Duration

60'.

Material

- Post-its and pens to write down keywords that help remembering parts of the collective story in progress
- (optional) Cards with prompts to trigger the sharing.

Campfire

Campfire[7] is an activity designed to facilitate storytelling and sharing experiences within a group. It is often used in a corporate environment. However, it can be customised for any purposes including sharing about gaming experiences, or, about anything strictly not related to gaming. Here's a summary of how it works:

Purpose

The Campfire activity aims to create an environment where participants can learn more about each other, find common ground, and build connections through the sharing of personal narratives and experiences. The use of prompts and themed storytelling helps guide the discussion in a positive direction. This is actually the only main difference with respect to the Connecting Stories where the stories sharing should left free.

Preparation

1. Before the session, brainstorm 10-20 words or phrases that can be used as "trigger words" to start the storytelling. Write these on sticky notes.

2. Suggest themes for the storytelling session, with a main focus on positive or neutral stories.

During the Activity

1. Participants take turns selecting a trigger word or phrase from the sticky notes.

2. The person who selected the trigger word/phrase shares a personal story or experience related to that prompt.

3. Other participants are encouraged to build upon that initial story by sharing their own connected experiences or stories.

4. This storytelling chain continues, with each person's contribution linking back to the previous stories shared.

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[7] https://toolbox.hyperisland.com/campfire

Duration

30'-60'

Material

- Flipchart / paper

- Post-its and pens/Markers

4. Further readings & sources

The WP2 deliverables of MINDSET are the base ground for the whole document:

MINDSET Project Deliverables
- MINDSET Project Consortium (2023) "**Playbook for digital well-being. How young people can develop balanced gaming habits**". Available at https://admin.mindset.succubus.dev/uploads/Mindset_WP_2_Handbook_EN_0eab4b66db.pdf
- MINDSET Project Consortium (2023) "**Organisational Change Guide for youth organisations to address online gaming disorder among young people**". Available at https://admin.mindset.succubus.dev/uploads/Mindset_WP_2_Guide_eaf9bc6ac5.pdf

Session 2

For more information on mental health and available resources, visit the World Health Organization (WHO) website and the European Commission's page on mental health and related issues
- World Health Organization (WHO) website, FAQ, Gaming disorder: available at https://www.who.int/standards/classifications/frequently-asked-questions/gaming-disorder .
- World Health Organization (WHO) website, Q&A, Addictive behaviours: Gaming disorder: available at https://www.who.int/news-room/questions-and-answers/item/addictive-behaviours-gaming-disorder
- Horizon 1.1, European Research Council (ERC), ERC-2021-STG, Grant agreement ID: 101042052: **An Ontological Reconstruction of Gaming Disorder: A Qualitative Meta-Phenomenological Foundation**, coordinated by JYVASKYLAN YLIOPISTO, available at https://cordis.europa.eu/project/id/101042052

Papers

- John J McGrath, et al. (2023). "**Age of onset and cumulative risk of mental disorders: a cross-national analysis of population surveys from 29 countries**", The Lancet Psychiatry, Volume 10, Issue 9, 2023, Pages 668-681, ISSN 2215-0366, https://doi.org/10.1016/S2215-0366(23)00193-1. (available at https://www.sciencedirect.com/science/article/pii/S2215036623001931, open access at http://tinyurl.com/muhjrh63)

- GBD 2019 Mental Disorders Collaborators (2022) "**Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019**", The Lancet Psychiatry, Volume 9, Issue 2, Pages 137-150, 2022, https://doi.org/10.1016/S2215-0366(21)00395-3 (available at https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(21)00395-3/fulltextl)

Videos

- **Mental health in adolescence**, World Health Organization (WHO), Sep 17, 2018, 4m 08s, https://www.youtube.com/watch?v=HMRaun9yRWk

- **Out of the Dark: Teens Talk Mental Health,** June 28, 2022, 25m 27s, https://www.pbs.org/video/out-of-the-dark-teens-talk-mental-health-0xefai/, transcript: https://ga.video.cdn.pbs.org/captions/out-dark-teens-talk-mental-health/7967ff6c-892b-4f2d-8d64-da493d5737d5/captions/oNL7eN_caption_en.txt

Websites

- https://www.betterup.com/blog/growth-mindset
- https://www.futurelearn.com/info/blog/general/develop-growth-mindset
- https://www.learnlife.com/learning-paradigm/developing-a-growth-mindset
- https://www.psychologytoday.com/gb/blog/click-here-happiness/201904/15-ways-build-growth-mindset

Session 3

Videos

- **Understanding anxiety in teens**, The Therapy Hub, Sep 30, 2021, 35m 48s, https://youtu.be/449u8nko7gA?feature=shared

Session 4

Websites

- World Health Organization (WHO) website, FAQ, Gaming disorder: available at https://www.who.int/standards/classifications/frequently-asked-questions/gaming-disorder .
- World Health Organization (WHO) website, Q&A, Addictive behaviours: Gaming disorder: available at https://www.who.int/news-room/questions-and-answers/item/addictive-behaviours-gaming-disorder
- American Psychiatric Association's definition of Internet Gaming, available at https://www.psychiatry.org/patients-families/internet-gaming
- Horizon 1.1, European Research Council (ERC), ERC-2021-STG, Grant agreement ID: 101042052: **An Ontological Reconstruction of Gaming Disorder: A Qualitative Meta-Phenomenological Foundation**, coordinated by JYVASKYLAN YLIOPISTO, available at https://cordis.europa.eu/project/id/101042052

Papers

- Colasante E, Pivetta E, Canale N, Vieno A, Marino C, Lenzi M, Benedetti E, King DL, Molinaro S. (2022). "Problematic gaming risk among European adolescents: a cross-national evaluation of individual and socio-economic factors". Addiction. 2022 Aug;117(8):2273-2282. doi: 10.1111/add.15843. Epub 2022 Feb 28. PMID: 35165980; PMCID: PMC9544763 available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9544763/.
- Fam JY (2018). "Prevalence of internet gaming disorder in adolescents: A meta-analysis across three decades". Scand J Psychol. 2018

Oct;59(5):524-531. doi: 10.1111/sjop.12459. Epub 2018 Jul 13. PMID: 30004118. Available at https://pubmed.ncbi.nlm.nih.gov/30004118/

- Gao, Y.-X., Wang, J.-Y., & Dong, G.-H. (2022). "The prevalence and possible risk factors of internet gaming disorder among adolescents and young adults: Systematic reviews and meta-analyses." Journal of Psychiatric Research, 154, 35–43. https://doi.org/10.1016/j.jpsychires.2022.06.049 available at https://psycnet.apa.org/record/2023-02112-007

- King, D. L., & Delfabbro, P. H. (2020). "Gaming disorder in young people". In M. Hodes, S. S.-F. Gau, & P. J. de Vries (Eds.), Starting at the beginning: Laying the foundation for lifelong mental health (pp. 159–187). Elsevier Academic Press. https://doi.org/10.1016/B978-0-12-819749-3.00007-5

- Kircaburun K., Pontes H.M., Stavropoulos V., Griffiths M.D.. (2020). "A brief psychological overview of disordered gaming", Current Opinion in Psychology, Volume 36, 2020, Pages 38-43, ISSN 2352-250X, https://doi.org/10.1016/j.copsyc.2020.03.004. Available at https://www.sciencedirect.com/science/article/pii/S2352250X20300336

- Macur, M., Pontes, H.M. (2021). Internet Gaming Disorder in adolescence: investigating profiles and associated risk factors. BMC Public Health 21, 1547 (2021). https://doi.org/10.1186/s12889-021-11394-4 available at https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11394-4

- Martončik, M., Ropovik, I., Adamkovič, M., (2024). **Development of gaming disorder: Underlying risk factors and complex temporal dynamics**, Computers in Human Behavior, Volume 153, 2024, 108112, ISSN 0747-5632, https://doi.org/10.1016/j.chb.2023.108112 (https://www.sciencedirect.com/science/article/pii/S0747563223004636).

- Paulus, F.W., Ohmann, S., von Gontard, A. and Popow, C. (2018), Internet gaming disorder in children and adolescents: a systematic review. Dev Med Child Neurol, 60: 645-659. https://doi.org/10.1111/dmcn.13754 available at https://onlinelibrary.wiley.com/doi/epdf/10.1111/dmcn.13754

- Przybylski A.K., Weinstein N., Murayama K., (2017). "Internet Gaming Disorder: Investigating the Clinical Relevance of a New Phenomenon". Am J Psychiatry, Volume 174, Issue 3, March 01, 2017, Pages 230-236, available at https://ajp.psychiatryonline.org/doi/pdf/10.1176/appi.ajp.2016.16020224

- Ropovik, I., Martončik, M., Babinčák, P., Baník, G., Vargová, L., Adamkovič M. (2023). "Risk and protective factors for (internet) gaming disorder: A meta-analysis of pre-COVID studies", Addictive Behaviors, Volume 139, 2023, 107590, ISSN 0306-4603, https://doi.org/10.1016/j.addbeh.2022.107590 . Available at https://www.sciencedirect.com/science/article/pii/S0306460322003562

- Singh YM, Prakash J, Chatterjee K, Khadka B, Shah A, Chauhan VS (2021). Prevalence and risk factors associated with Internet gaming disorder: A cross-sectional study. Ind Psychiatry J. 2021 Oct;30(Suppl 1):S172-S177. doi: 10.4103/0972-6748.328810. Epub 2021 Oct 22. PMID: 34908685; PMCID: PMC8611597, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8611597/

- Stevens M.W.R., Dorstyn D., Delfabbro P.H., and King D.L. (2021). "Global prevalence of gaming disorder: A systematic review and meta-analysis", Australian & New Zealand Journal of Psychiatry 2021 55:6, 553-568. Available at https://journals.sagepub.com/doi/full/10.1177/0004867420962851

- van der Neut D, Peeters M, Boniel-Nissim M, Klanšček HJ, Oja L, van den Eijnden R (2023). "A cross-national comparison of problematic gaming behavior and well-being in adolescents". J Behav Addict. 2023 Apr 14;12(2):448-457. doi: 10.1556/2006.2023.00010. PMID: 37060555; PMCID: PMC10316172. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10316172/

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- Wei, Q., Zhang, S., Pan, Y. et al. (2022). "Epidemiology of gaming disorder and its effect on anxiety and insomnia in Chinese ethnic minority adolescents". BMC Psychiatry 22, 260 (2022). https://doi.org/10.1186/s12888-022-03894-3 available at https://bmcpsychiatry.biomedcentral.com/articles/10.1186/s12888-022-03894-3

Recommended videos

- **12 Ways Gaming Harms Your Life**, Game Quitters, 5 Jan 2022, 13m 31s, available at https://youtu.be/qyR6uI0Y7JM?si=ov-ckfeKw0a6hSP_ (Gaming, when not played in moderation, can be harmful to your life. So in this video I share how this can occur and what you can do to keep your gaming under control.)
- **Gaming Addiction: Understanding Excessive Gaming, Risk Factors and Warning Signs**, Generation Next, 24 Nov 2016, 5m 16s, available at https://youtu.be/x65zomcw43k?si=fggcK72MWHGmTQiZ
- **How Gaming Affects Your Brain (Andrew Huberman)**, Game Quitters, 3 Apr 2023, 12m 40s, available at https://youtu.be/D0JafEWu-lg?si=4BraZ6kuc6zVPIp5 (How does gaming and addiction affect motivation, drive and potential? Learn the science according to Andrew Huberman.)
- **How TV Affects the Brains of Young Children** (16'11") by TEDxRainier, available at: https://www.youtube.com/watch?v=v2SdEpHjrjw
- **Jordan Peterson's WARNING About VIDEO GAMES**, Game Quitters, 27 Jun 2022, 6m 55s, available at https://youtu.be/dAMMv-J_Sww?si=G4XBuRzQwpBn5jIO
- **Signs of Video Game Addiction** (3'27") by Psych2Go, available at https://www.youtube.com/watch?v=2Y8H9vD3aZ8 (please note that there is an advert at the end of the video)

The third session of the Capacity Building Program (CBP) will focus on some specific topics such as

- Games & Gamification
- Game Design Elements (Dynamics, Mechanics, Components)
- Game Design Examples (e.g. Hero's Journey and Treasure Hunt)
- How to build a useful game for you
- Some powerful tools of engagement built through Game Design

As usual, Chapter 3 is characterised by setting its learning objectives, developing the learning activities addressing the topics, and by providing the supplementary information for further readings (including relevant knowledge background) and material required.

Learning Objectives

Skills

By developing these skills through learning about game design principles, psychological theories, and background knowledge, youth workers can be better equipped to address gaming disorder among youth effectively.

- *Understanding gamers' perspectives*: Youth workers should develop skills to effectively communicate with and gain insights from young gamers themselves as it is key involving the gaming community and understanding their perspectives when developing prevention strategies.
- *Designing engaging alternative activities*: To prevent excessive gaming, youth workers should learn how to design alternative activities that are engaging and fulfilling for young people, drawing for instance, from principles of game design like narrative, challenges, feedback loops, and social connectivity.

- *Better understanding the psychological needs of youth*: It is very important to understand the basic psychological needs of autonomy, relatedness, and competence, as outlined in Self-Determination Theory. Youth workers that are better equipped to identify when these needs are not being met in a young person's family environment, as this can increase their risk of compensating through excessive gaming, can greatly contribute to take the right steps for helping the gamer in distress.

Knowledge

By acquiring knowledge in these areas, youth workers can better analyse how game design elements influence youth engagement, motivation, and decision-making, ultimately helping them address issues related to gaming disorder more effectively.

- *Understanding psychological needs and motivation theories*: The document highlights the importance of understanding theories like Self-Determination Theory, which explains the psychological needs of autonomy, competence, and relatedness that drive intrinsic motivation. Youth workers should learn how games can fulfill or undermine these needs.
- *Game design principles and elements:* Youth workers need to gain knowledge of core game design principles like goals, rules, feedback, as well as the dynamics, mechanics, and components that make up game designs (e.g., narrative, progression, challenges, rewards). This understanding can help analyse how games engage youth.
- *Positive psychology concepts*: Concepts like flow, growth mindset, and their connections to game design principles are important for youth workers to understand how games can foster positive experiences and personal growth when used responsibly.
- *Neuroscience of learning and decision-making*: Knowledge of neuroscientific principles related to attention, memory, emotions, cognitive biases, and decision-making processes can help youth workers understand the psychological impact of game design elements on youth.

- *Learning theories and models*: Familiarity with learning theories like experiential learning, connectivism, and how they relate to game design can provide youth workers with frameworks to design engaging and effective learning experiences using games.

Attitudes

By cultivating these attitudes and mindsets, youth workers can approach the topics of mental health and gaming disorder with a constructive and supportive mindset:

- *Openness and Curiosity*: Youth workers should approach these topics with an open and curious mindset, willing to learn and understand the complexities involved. They should be receptive to new information and perspectives, avoiding preconceived notions or judgments.
- *Empathy and Compassion*: When learning about personal experiences and case studies related to gaming disorder, youth workers should cultivate an attitude of empathy and compassion. This involves understanding the struggles and challenges faced by individuals affected by the disorder, without judgment or stigmatization.
- *Growth Mindset*: Youth workers should embrace a growth mindset, recognizing that gaming disorder is a condition that can be addressed and overcome with the right support and interventions. They should believe in the potential for positive change and personal growth, both for themselves and the individuals they work with.
- *Proactive and Solution-Oriented*: Youth workers should adopt a proactive and solution-oriented attitude when addressing mental health and gaming disorder. This involves actively seeking ways to prevent, identify, and address these issues within their communities, rather than taking a passive or reactive stance.
- *Collaboration and Inclusivity*: Youth workers should foster an attitude of collaboration and inclusivity when addressing mental health and gaming disorder. This involves recognizing the importance of involving various stakeholders, such as parents, educators, mental health professionals,

and the youth themselves, in developing comprehensive and effective strategies.

Behaviours

These youth workers behaviours should tap into the theoretical knowledge of game design with practical approaches to support youth, aiming to address gaming disorder in a comprehensive and empathetic manner.

- *Empathetic understanding*: Youth workers should approach young people affected by gaming disorder with empathy, recognising that gaming can fulfil psychological needs such as autonomy, competence, and relatedness as described in Self-Determination Theory.
- *Critical analysis of game design*: Apply knowledge of game mechanics, dynamics, and components to understand how specific games might be particularly engaging or potentially problematic for youth.
- *Facilitation of reflective practice*: Encourage youth to engage in reflective observation about their gaming experiences, helping them to critically examine their motivations and behaviours, in line with Kolb's Experiential Learning Theory.
- *Promotion of balanced activities*: Utilise understanding of the "magic circle" concept to help youth create boundaries between gaming and other life activities, encouraging a healthy balance.
- *Application of gamification principles*: Use knowledge of game design elements to create engaging, non-digital activities that can provide alternative sources of fulfilment and skill development for youth affected by gaming disorder.

Values

By upholding these values, youth workers can create a supportive and ethical environment for addressing mental health issues and gaming disorder among the youth they work with:

- *Respect and Dignity*: Youth workers should approach these topics with a deep sense of respect and dignity for individuals affected by mental health issues and gaming disorder. This involves recognizing their inherent worth, avoiding stigmatization, and treating them with compassion and understanding.

- *Non-discrimination and Inclusivity*: Youth workers should embrace the values of non-discrimination and inclusivity, ensuring that their approach to addressing mental health and gaming disorder is accessible and inclusive to all, regardless of background, identity, or personal circumstances.

- *Confidentiality and Trust*: When working with individuals affected by mental health issues or gaming disorder, youth workers should uphold the values of confidentiality and trust. This involves maintaining the privacy and confidentiality of personal information shared and fostering an environment of trust and safety.

- *Empowerment and Self-determination*: Youth workers should value the principles of empowerment and self-determination, recognizing the agency and autonomy of individuals affected by mental health issues or gaming disorder. This involves supporting their ability to make informed choices and actively participate in their own well-being and recovery.

- *Professionalism and Ethical Conduct*: Youth workers should embody the values of professionalism and ethical conduct in their approach to mental health and gaming disorder. This includes adhering to ethical standards, maintaining objectivity, and providing accurate and evidence-based information and support.

Learning Activities

The learning content of Session 3 is organised in

- a presentation accompanied by this document, that are meant to provide youth workers with the basic knowledge about Game Design, (45') along with
- engaging activities supporting self- and collective reflection, feedback and exchanges among gamers and between youth workers and gamers, (15' for the quiz and up to 120' if suggested activities in the optional part are performed)
- supporting material for sources, in-depth focus, and the roll-out of the activities (120')

Needed materials

- PowerPoint Presentation for session 3
- Devices (mobile phone/computer) with access to the internet
- Exercises
    - Paper / flipchart / post-its
    - Pens /pencils / markers

Session 1 Games & Gamification

A Sci-Fi Short Film : "Sight" - by Sight Systems | TheCGBros

Let's start with a short video:

Video 1: A Sci-Fi Short Film : "Sight" - by Sight Systems | TheCGBros[8]

What have you seen?

Patrick, the main character, played a game

Figure 10: Sight screenshot

He lives in a gamified world

Figure 11: Sight screenshots

With consequences and a real impact on his life

Figure 12: Sight screenshot

And other lives too!

But apart from this dystopian scenario, there are many elements that jointly relate to games and gamification, or, likely, better to say, to game design.

Let's start from the "game" Patrick plays at the beginning of the video.

- Patrick has to assume a specific posture to play the game.
- Through it he can plunge into ethereal circles that represent his intermediate *objectives* along a predefined path towards a *final goal*, the finishing line which is still represented by a circle.
- Each circle represents a numbered gain that adds up to his overall score.
- Each time he succeeds or fails to meet a target, that is, plunging into a circle, different signals provide him with *feedback* on his performance: by voice (e.g. "excellent", "good job", "well done", "level completed"), words (often same feedback given by voice: "excellent", "good job", but also "perfect"), and various indicators such as speed, altitude, *level* of difficulty, current score (e.g. 100 *points*), overall score (e.g. 2900 *points*), next target (3000 to get to Gold *level*) until he reaches it eventually ("3000", "perfect", "level completed").

Let's move now to the gamification parts of this short film:

- Once again, our hero must act in a very specific way to succeed: "Put cucumber here", cut along the dashed lines you can see through your Augmented Reality-boosted lenses, move the egg towards the *target* displayed on the frying pan.

- There are some visually displayed feedbacks like the level of difficulty ("HARD"), the performance in cutting the cucumber expressed in words ("nice", "good", "bad") or visually (e.g. by the number of cook hats that represent the *level* of proficiency acquired so far: increasing if doing well, decreasing if not, which means that the player has to restart the level), or by numbers with the current score ("10+") and the overall one ("0060").

- The same happens for scrambling the egg: "tilt the pan to move the egg", "amazing", "Stage Two Scramble an egg". Here we see a new element: the time, as the task has to be performed in a specific time set that cannot be overcome.

- And what about the interaction between Patrick and Daphne? Try to identify yourself the similarities with the other examples presented in the video. Just note the big wall of badges that is visible in Augmented Reality on the wall that is missing elsewhere, and the constant feedback on the ongoing progression of Patrick's seduction efforts.

Figure 13: Sight screenshot

The distinctive traits of Games and Gamification

What are then the conclusions we can derive from this analysis?

- Both games and gamification present some objectives, goals that have to be attained. These targets drive the rollout of the activities, set their accomplishments. Let's say that both games and gamification are *goal-oriented*.
- In order to get to the desired results, that is achieving the objectives set, players and participants to gamified activities have to follow some *rules*.
- In all the cases we have seen in the short film, there is constant *feedback* that informs about the impact of activities performed in the game or in the gamified experience by Patrick. He always knows if he does well or not all the time through different kinds of indicators so that he can redirect and adjust his behaviour and performance at will, eventually.

Actually, games and gamification share the same constitutive design elements: *Goals*, *Rules*, *Feedback*.

Fun and Voluntary participation

There is a great debate among scholars and in literature on the true nature of games and of gamification and on the fact that games are also characterised by two other distinctive elements, that is *Fun* and *Voluntary participation*.
However, neuroscientific research suggests that it is the release of the dopamine neurotransmitter induced by novel and surprising experiences that make games enjoyable and even addictive to play. It is therefore questionable whether novelty and surprise are solely responsible for the fun. Challenges can have the same effect, and actually, one can argue that fun is just a symptom, a consequence of a well-designed activity and not part of the design itself.
As far as voluntary participation is concerned, of course, self-determination theory, human rights and common sense highlight the role of autonomous choices in one's own life, but it is also true that sometimes people are obliged to things that they would not have thought or liked to do. If one considers all the

training programs that employees and managers have to follow for reskilling and upskilling purposes, more and more of such activities are rolled out through games. They are often called *Serious Games*, to differentiate from the ones that are conceived just for pure entertainment. Purists might argue that such games are actually *simulations* of real-life professional cases if not even *simulators* and not real games. In any case, whenever they are goal-oriented, have rules to be followed and provide feedback to the participants, they can be called games. Then, how many of these trainees are really willing to play the game, or to follow the training overall? Maybe, initially, not many. But they have to! If the game is well designed, if it is engaging, they might eventually be fully absorbed by it. Would have they played the game if they could not? Likely not, but they have been asked to do it and then they might have troubles to detach from it. In some particular cases, some business and management related Serious Games are so viciously designed that it is virtually impossible to win. This is done on purpose and by design as the main learning objective is to train managers to face hard situations they can meet in their real professional life. Are they fun? Not really, they might be a source of frustration, but they bring "players" to a full involvement in the game. They are challenged and brought to stretch and improve their competences and knowledge. Often, when they fail, they want to do it again: "Now I know what to do!".

All in all, neither fun nor voluntary participation are really necessary to design a game or a gamification activity. Although they are nice to have.

Context and Leading purpose

So, if games and gamification are made up of the same design elements, what really differentiates them?

The context and objective make games worlds apart, whereas gamification, i.e. gamified activities, is in itself embedded in reality.

Of course, also games might intervene, use and have an impact on reality. Think of *Alternate Reality Games* where the gaming actions are played in the real world. However, all such game's rules are confined to the game itself and real world's

ones cannot or should not interfere with them. This might be a fascinating perspective, but it always depends on the purpose:

- One can really use Alternate Reality Games in a profitable way to bring game objectives into reality: this is an excellent way to bring gamers back to the real world.
- One can take advantage of the reality settings to manipulate behaviours. A couple of examples might explain how.

Example #1) Dangerous Challenges that (mostly) teenagers are called to answer to on social media might even put their lives in peril[9]. In this case, an important co-factor that reinforces the other motivational sources of the behaviour that are related to the specific age, like peer pressure, group identity, norms-breaking (Sherman et al., 2016), is given by the *Rewarding* mechanic applied to the social media: the number of *likes* displayed is source of behavioural imitation, often regardless of the possible negative consequences. This is the reason we can include this example as a case of game and not of a gamification implementation, since the participants to the challenge want to share the same experience in a bubble of their own along with their peers and the external world cannot either access to or understand it. It is a real world apart.

Example #2) Consider David Fincher's The Game film (1997)[10]. Nicholas Van Orton (Michael Douglas) is a wealthy but emotionally detached investment banker in San Francisco. On his 48th birthday, his estranged brother Conrad (Sean Penn) gives him an unusual gift: entry into an immersive game run by a mysterious company. Initially sceptical, Nicholas finds himself drawn into an elaborate series of disturbing and life-threatening events orchestrated by the game company. His orderly existence unravels as he is subjected to psychological torture and threats, blurring reality and fiction. The game culminates in a staged scenario where Nicholas believes he has killed Conrad and attempts suicide, only to discover it was an elaborate ruse designed by his

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[9] https://eu.usatoday.com/story/life/health-wellness/2021/04/27/tiktok-challenge-kills-12-year-old-how-peer-pressure-has-evolved/4853507001/
[10] https://en.wikipedia.org/wiki/The_Game_%281997_film%29

brother to force him to embrace life and confront his emotional isolation, mirroring their father's suicide.

Despite the happy ending of the story and the underlying *noble* purpose that guided the events from the beginning, and even supposing that all dangerous *challenges* faced by the main character were fully staged (e.g. the driverless taxi's plunge into the sea), the repetition of shocks could have actually mentally endangered him eventually. In fact, Nicholas is on the verge of committing suicide before he discovers the elaborate machination to which he has been subjected. In this example the player is not fully aware of the rules of the game he is into. He is brought to discover them through an elaborated *narrative* that unfolds and reveals itself step by step. And he is all the time within the game, no matter what he meant to do. On the contrary, by fighting against the game that he misinterpreted as a plot to ruin him in real life, he was actually plunging into it more and more.

Definition(s)

Working definitions are probably more functional for your purposes than adopting the specific definitions available in the literature, which may be contradictory and often reflect the particular perspectives of researchers. The Annexes will provide you with some founding pillars related to research on games on the concept of *play*.

Game: Structured form of play for entertainment or educational purposes.
This definition meets the characteristics we have already identified: games are *goal-oriented* activities (entertainment or educational objectives), with *rules* that enable them to be deployed, and *feedback* has to be provided to measure progress towards the set objective (structured).

For what concerns gamification, the Wikipedia definition is adequate:

"**Gamification is the application of game-design elements and game principles in non-game contexts**."[11] (Wikipedia, n.d.)

There is an explicit reference to game design elements, which are the constituent components gamification is built on and that are shared with games, and to the key role played by the *context*.

Let's move now to see Game Design in detail.

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[11] https://en.wikipedia.org/wiki/Gamification

Session 2 Games Design Elements

Game Design can be described through its constitutive elements. Following and adapting the structure proposed by Werbach and Hunter[12] we can identify three groups of elements:

- **Game Dynamics** provides the *big picture* aspects of a game design.
    - In other words, they give its *grammar*—the implicit framework where Rules are realised.
- **Game Mechanics** define the *processes* that propel action ahead.
    - For this reason, they are expressed through *verbs* (in English).
- **Game Components** represent specific *instantiations* of mechanics and dynamics and are expressed by *nouns*.

Game Dynamics

CONSTRAINTS
- *limit* participants' actions, choices, and outcomes under specific *restrictions*.

EMOTIONS
- drive *engagement* and *motivation*

NARRATIVE
- It is commonly used to communicate game objectives.
- Narrative can definitely combine all other dynamics.
- It may be *explicit*, as in a plot, or *implicit*, where the story 'emerges' gradually, producing a sense of flow.

PROGRESSION
- It is essential for conveying a sense of *progress* from beginning to end of a game, including intermediate phases.

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[12] (Werbach & Hunter, 2015), (Werbach & Hunter, 2020)

- Measuring how far the player is from the final goal.
- However, it also provides the means for assessing the players' *performances* against each other, themselves, or even the entire community of players.

RELATIONSHIPS

- refer to the *ties* between players and non-player characters.

Game Mechanics

ACQUIRING RESOURCES

- Resources are assets that can be sold, accumulated, and used for a variety of reasons.
- The resources could be skills, knowledge, attitudes, or values that must be learned to achieve a learning goal.

CHALLENGING

- This is a basic mechanic that makes gaming and gamification applications more engaging.
- You can utilise it to promote a growth mindset and increase motivation.

COMPETING

- It's effective for engaging people, but it may also be used for competing against oneself.
- A clear winner isn't always necessary.
- Having no losers or winners can be beneficial.

COOPERATING

- It helps to develop team building.
- Effective engagement power!
- When you are unable to achieve a goal on your own, you must work together!

MAKING TRANSACTION

- *Trading* resources promotes strategic thinking and engagement.
- *What kind* and how many *resources* are required to complete a task?
- *Where* can I find them? By *whom*?

PLAYING IN TURNS

- It provides organisation and order for activities.
- It ensures inclusivity! Everyone acts in proper time.
- It keeps activities in sync.
- But it has a significant impact on asynchronous activities too! The following step creates suspense!

PROVIDING FEEDBACK

- Essential and necessary.
- Used to provide players with *feedback* on their own and others' *performance*, as well as on the *consequences* of their *actions*.

REACHING WIN, LOSS STATE

- It allows you to establish the conditions for *finishing* a game or activity.
- But, what if you declare that there are no losers?
- What happens if you determine there are no winners?
- It allows you to regulate the progression of a game or activity.
- However, what if there is no end condition?
- Learning, for example, does not cease.

RELYING ON CHANCE

- Relying on chance is the mechanism that enables dealing with *uncertainty*.
- This tool can also be used to resolve *deadlocks* and reorganise game conditions, such as rearranging the cards on the table.
- It must be utilised carefully, but it is nice to infuse some unpredictability.

REWARDING

- The primary purpose is to *recognise* accomplishments and *motivate* players to participate in order to get a *benefit*.
- The challenge is determining *how frequently* rewards should be triggered, whether they should be tied to real accomplishments, or supplied at random.

Game Components

ACHIEVEMENTS

- Defining (intermediate and final) objectives
- How many? At least one!
- Link objectives to learning goals.

AVATAR

- Representing player characters
- Providing players with unique identifiers
- A player can be represented by anything, including a basic item; a high-resolution 3-D depiction is not required.
- PLEASE BE AWARE that an avatar upgrade may reflect an accomplishment.

BADGES

- Providing players with visual representations of their achievements
- Enhancing self-esteem.
- Do not abuse them! Only important accomplishments, but don't forget to acknowledge the early ones (maybe not with a badge...).

BOSS FIGHT

- Defining a specific difficult problem (usually the toughest or *ultimate* one) that requires the use of all available resources.
- Calling on action *teams* and/or *communities*.

- Making people realise that working *together* is preferable to working alone when faced with difficult tasks that exceed one's own ability.

COLLECTIONS

- Accumulating valuable (virtual? real-life?) goods.
- Categorising goods and tools.

COMBAT

- Representing a challenge.
- Competing for scarce resources.
- Testing one's own competences.
- Who are the opponents? Other players? What about the "system"?

CONTENT UNLOCKING

- Liberating resources and facilitating advancement.
- Rewarding accomplishments by providing players with additional resources to achieve their aims.

GIFTS (giving/receiving)

- Being altruistic.
- Sharing resources.
- Helping players in need.
- It is not intended to be rewarding, but it may be.

LEADERBOARDS

- Measuring general accomplishments.
- Ranking the players.
- Consider presenting ranks for various targets.
- How about displaying increments instead of consolidated values?
- Present bad performances as opportunities for improvement.

LEVELS

- Measuring successes within a certain phase.
- Framing (intermediate and final) objectives.

- Marking the transition between two distinct stages.
- Framing the reward programmes.
- Giving gamers fast feedback on their current performance.
- The granularity of setting levels is critical: not too many, nor too few. There must be logic to go to the next level.

PERFORMANCE GRAPHS

- Measuring player performance.
- Fostering a drive to improve in players (growth mindset).
- What has to be measured? Perhaps intangible goods, such as empathy, are equally, if not more valuable than tangible ones.
- There are more than just figures and measurements.

POINTS

- Measuring timely progress.
- Structuring rewarding.
- Enhancing self-esteem.
- What metrics will you use? A virtual one, limited to the gamified activity? Or a real-world one?

QUESTS

- Setting the lead challenge.
- Setting side or intermediate challenges.
- Engaging the players.
- Usually announced before starting the gamified experience. What if you designed it in such a way that it is gradually revealed over time?

SOCIAL GRAPHS

- Providing an overview of the ties that connect players (friends / allies vs. adversaries).
- Encourage strategic thinking.
- Make players consider the power of "weak ties": they are the ones that create new opportunities!

TEAMS

- Achieving any goal that is beyond one's own abilities.
- Performing any task that cannot be completed individually.
- Try to highlight individual contributions while praising collective effort and outcomes.

TIME

- Structuring the activities.
- Dealing with Pressure
- Time granularity is critical: think carefully about how to space activities.
- Sometimes it is beneficial not to give players enough time: they will learn how valuable time is and how to deal with pressure.
- Finite-time activities or limitless games? What type of action can last indefinitely?

VIRTUAL GOODS

- Organising resources.
- Acquiring and releasing resources.
- Allowing gamers to exchange items.

Please note that this selection of Game Design Elements that has been mostly taken from Werbach's input (Werbach, K., Hunter, D., 2015, 2020), is not exhaustive as anybody can add other ones that might be functional to their needs. For instance, one can imagine adding a Component like *Technologies* (any kind like AR, VR, AI, etc), and a Mechanic like *Using Tools* that allow to use it.

Session 3 Examples

Some simple examples can clarify how Game Design Elements have been implemented for gamification and game design. For each example let's analyse WHAT is about, WHO the target users and the providers are, and, then HOW it was implemented, that is, which game design elements have been used.

Lottery

The WHAT and WHO are straightforward: cash or material goods are won by citizens or customers through the purchase of a ticket sold by the Ministry of Finance, an NGO for fund raising, or even given away for free by a new business to advertise itself.

But why do individuals buy tickets without knowing if they would win anything?

To understand how it works, consider this concrete example: Assume you are a football fan watching a European Championship match on your TV screen at home when, suddenly, during the second half of the match, the commentator invites you to send an SMS with the exact name of the scorer of the first goal scored during the first half of the match to a number superimposed at the bottom of your screen.

You have ten minutes to respond, and if you do it correctly, you will be eligible to win €50,000 in a lottery restricted for responders only, which will be held in a couple of weeks.

While it may not be as significant as winning the EuroMillions lottery[13], a prize of 50k€ may be enough to entice people to watch the entire match and send an SMS to track any developments.

These are some of the actual constrains that a viewer who wants to participate in would be required to adhere to.

Then there is the element of uncertainty owing to the randomness of the eventual result, which is especially important during the thrilling moments of a EuroMillions draw. What a disappointment if you bought a lot of lottery tickets and ended up

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[13] EuroMillions lottery that is played in nine European nations. Draws are held on Tuesday and Friday evenings, with a minimum guaranteed prize of €17 million. https://www.euro-millions.com

with nothing! Emotions are highly significant when playing the lottery in the hopes of winning; they are also increased by the intrinsic competitive aspect of the event, although one doesn't likely know whom is competing against.

And if one wins, happiness and a sense of reward, for having been patient, hoping for the good fate, for having carefully watched the whole match, maybe.

LOTTERY	
WHAT	cash, material goods
WHO?	● Users: Citizens, Customers ● Providers: Ministry of Finance, NGO, Businesses
HOW	● **Dynamics**: Constraints, Emotions ● **Mechanics**: Relying on chance, Rewarding ● **Components**: Gifts

Table 6: Lottery

Frequent Flyer Programme / Loyalty Card

Frequent Flyer Programmes and Loyalty Cards are based on the same principles. Basically, discounts and exclusive perks, such as special services and offers, are offered to customers by many brands, including airlines, hotels, financial services, and supermarkets, to increase brand loyalty.

Travelling with the same airline, staying at the same hotel, purchasing at the same supermarket, and using the same credit card can lead to brand loyalty. So, you have to follow some constraints.

Points and levels are commonly used to track progress. Reaching a given number of points leads to a higher level of benefits, which is reflected in a new status of the user / consumer / player. This implies unlocking new resources and being rewarded by new offers because of the loyalty to the brand.

Summing up:

FREQUENT FLYER MILES / LOYALTY CARDS	
WHAT	discounts and exclusive benefits
WHO?	- Users: Customers, Prospect customers - Providers: flight companies, hotels, financial services that deliver credit cards, supermarkets
HOW	**Dynamics**: Constraints, Progress **Mechanics**: Acquiring resources, Rewarding **Components**: Badges, Content Unlocking, Levels, Points

Table 7: Frequent Flyer Programmes and Loyalty Cards

The Treasure Hunt

Traditionally, a treasure hunt is a game where participants follow a series of clues to find a hidden prize or *treasure*. Each clue leads to the next location, creating an exciting search and discovery experience. The goal is to decipher the clues correctly and be the first to reach the final treasure location.

Let's see how you can set it up and use it for your purposes.

STEP 1: Who is involved?

You, your kids / students, but likely also other stakeholders: other youth workers, families (parents, relatives), school (teachers), the local authorities (municipality). It depends on the kind of activity you want to set up.

STEP 2: The Treasure

The treasure is obviously the objective you intend to pursue. Maybe it is a learning objective, a change of mindset, of attitude, acquiring awareness of something important.

Whatever it is, you have to build a story around it (*Narrative*) so that participants are naturally called to some repetitive *challenges* that will make them *progress* towards the final *reward*. It is obvious that the Treasure hunt has to respect some space and likely time boundaries (*Constraints*).

STEP 3: Identifying the Hints

The treasure and the hints that lead to it cannot be anywhere, but in locations that you have to identify in advance. Of course, the locations could be physical places, like your premises, a library, a garden, a museum… inside tangible assets like books, or they can reside in intangible ones like something you know they already know. Hints can also be placed online, even in social media

There are many ways to set the clues.

But what are these clues?

Challenges, actually. Riddles? Of course. Maybe you can also ask for help from teachers: problems to be solved, including STEM problems, but not only, a research on a poem, its origin, its meaning… or about a particular detail in a painting, or any kind of artwork, a particular milestone in history…

anyway, this might depend on the theme of your treasure hunt.

It could be even better if you could mix everything up and have different challenges, of different nature, involving different subjects.

STEP 4: The path leading to the treasure

The preparatory work doesn't stop here. Setting up the hints is necessary but just one part of the preparation job. You need to link the different clues to the final objective, the treasure. You have to prepare a path, a learning path that children have to follow.

Hints have to be ordered and graduated. This means that the challenges that kids have to address have to be increasingly demanding.

STEP 5: Add some spice to the gaming experience!

What follows actually diverges from the standard way of implementing Treasure Hunt where individuals or teams compete to win, that is to find the Treasure. You can keep as usual and the first 4 steps would be enough, or you can plan that initially children play individually, but at some point, they have to team up to face the increasingly difficult challenges they are called for.

And you can even think of leading them to join all forces eventually, as the last challenges you set might only be addressed by the whole lot of participants.

It's the *Boss Fight*! Maybe done through more stages: but everybody has to contribute.

We are talking of using one's own *strengths*, kids' individual ones, taking advantage of the *opportunities* met along the path, the hints actually, to mitigate own *weaknesses* (what children lack, do not know), to overcome the *threats*, the *challenges* posed through hints and in between.

Moreover, you can have *allies* and *foes*: the ones that support children in their endeavour and the ones that you instructed to undermine their *efforts.* You can set some individual and team *competitions* before things become more serious, and challenges require joint efforts.

Grading the hints in terms of difficulty means grading the required efforts, individual and collective ones, as well. Remember then that according to the Growth Mindset it is also very important to praise effort. Add some *rewards* along the path. *Content Unlocking* could be the right component to be implemented for supporting the ones that make the effort, regardless whether they succeed or not.

And, if possible, try to foresee multiple paths, alternative ways to follow to reach the treasure. You would see how powerful is the possibility of making *choices*: children would feel empowered, to be in control, and they would be able to act in autonomy, to master their skills, and acquire new ones for pursuing their goal.

Again, if you have time, you can also add some *randomness* to alter the path as it helps in introducing new obstacles, challenges, and it would be useful for developing skills like creativity and resilience.

Of course, this requires more design effort for you, but it is also unlikely that you can do it all alone with your busy days. Better to team with someone else.

TREASURE HUNT	
WHAT	A game where participants follow a series of clues to find a hidden prize or *treasure*. Each clue leads to the next location, creating an exciting search and discovery experience. The goal is to decipher the clues correctly and be the first to reach the final treasure location.
WHO?	"Users": young people you work with, you "Providers": you and your design team (Possible Stakeholders: family, teachers, other youth workers, psychologists, game designers, municipality…)

HOW	**Dynamics**: Constraints, Emotions, Narrative, Progression, Relationships **Mechanics**: Acquiring resources, Challenging, (Competing,) Cooperating, (Playing in Turns,) Providing Feedback, Relying on Chance and / or Randomness, Rewarding, Reaching Win / Loss (Termination) States **Components**: Achievements, (Badges,) (Boss Fight,) Collections, Content Unlocking, Team, (Time,) Virtual Goods

Table 8: The Treasure Hunt

The Hero's Journey

The Hero's Journey is a very well-known and consolidated technique of storytelling. And, of course, its structure allows one to build a compelling narrative. Many games are built with this fabric too.

Ultimately, it is about the profound transformation of the individual. The hero sacrifices their old self and even their ego in service of enlightenment and the greater good. By the end, they are not the same person who started the journey. And upon returning, they often use their newfound wisdom to change society itself.

How can you use this powerful metaphor in your role as a youth worker?

First consider that it cannot be a one-shot activity, but a series of activities that span over time. So, this has to be designed carefully, and likely you have to team up to do it.

Secondly consider what underlying objectives could lead the activities to. Remember that its premise is that heroes go on a journey that leads them to discover their actual selves. We used the plural, 'heroes' and not 'hero', as you are usually working not just for one kid / student only, but for a group of them. As in your case, there is a collective hero: the young people you are working with. Your planned activities can become a discovery journey. Learning, for instance,

is already a good example, but you should also consider raising awareness and behavioural change.

So, whatever objective you set as the main goal of your activity, the outcome will be a transformative experience for your students.
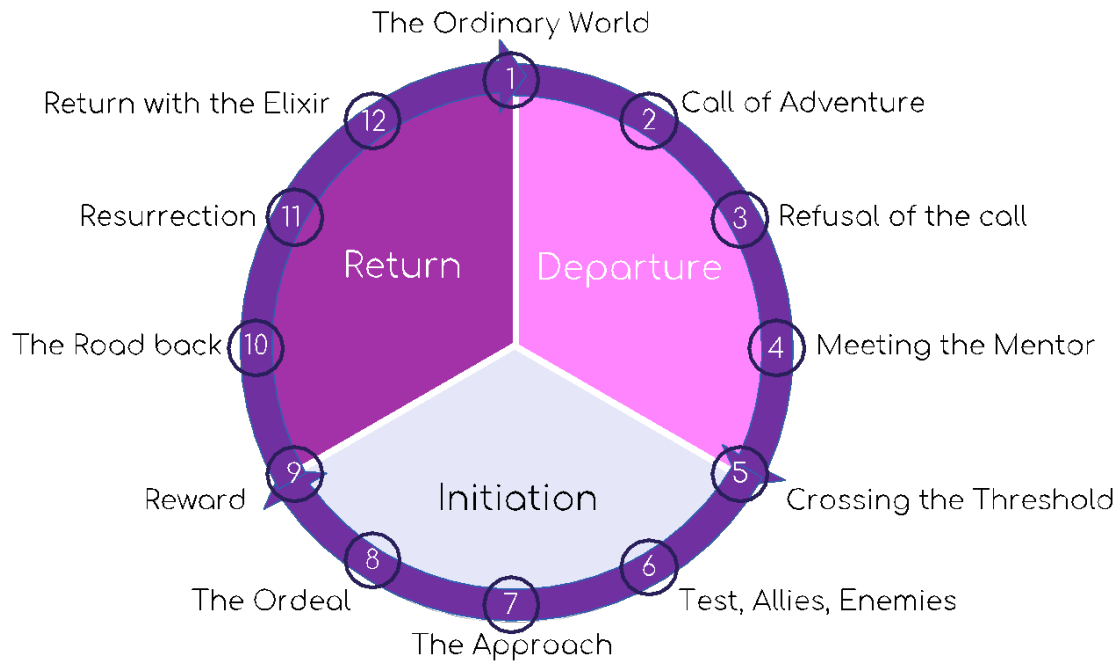
Figure 14: The 12 steps of the Hero's Journey

The Hero's Journey is usually composed of 12 steps.

STEP 1: the *Ordinary World*

The first one is the *Ordinary World*. Apparently the simplest and least important step. Actually, it's the most crucial. It reflects the activity's starting conditions, in which everything appears to be in equilibrium. But this gives you context for your activity. Here, you must examine your heroes' *strengths* and *weaknesses*. Strengths are the assets your students can rely on - their competencies, attitudes, knowledge, expertise, and values - at the time you begin the activity. Weaknesses indicate what people lack, thus they are relevant to the goals you want to set.

The context provides information about the actual conditions and surroundings in which your children will have to interact. We're talking about the limits they face, which might take many forms, including infrastructure, culture, and so on. We are talking about the difficulties, the genuine challenges that they will face, even if they are unaware of them at first. These are the *threats* that could jeopardise

young people's success. But there are also *opportunities*! Identify them and determine how the children will take advantage of them!

Finally, we must consider the *stakeholders* involved. What do you intend to do, and who will you include besides your children? Any other youth workers? Family members? Schoolmates? Teachers? Other people? They can be allies for young people or have a specific purpose in your activity. For example, in the classic Hero's Journey, there is a *Mentor*, who serves as a guide, offering advice and insights. This may be you, of course, or another youth worker, a teacher, an experimented student, a psychologist, a game designer, or another participant in the activity.

Other classic characters in the Hero's Journey include the *Threshold Guardian*, who is tasked with preventing the hero from accessing the *Special World* - the one the students must pass in order to complete their goal, which you assign them. As a result, this character is responsible for establishing the first tests, or hurdles, to be overcome. The *Herald* is another symbolic figure. The Herald highlights upcoming *challenges*, obstacles and developments during the voyage. It serves as a warning role and could be quite effective in preparing kids. Again, this function may be filled by you, another youth worker, a teacher, an experimented child, a psychologist...

The *Shapeshifter's* role is to question and deceive. It is used to set tasks and tests for children. The *Shadow* is unquestionably the darkest archetypal role. It does not have to be played by an active participant in the activity. However, you might consider it ubiquitous because it represents your pupils' anxieties. Fears of failure. As a result, it represents the most significant weakness that every kid must face. The Shadow is the true adversary to defeat. Failing is not something to fear, but the paralysing dread of failing is.

Finally, there's the *Trickster*, who disrupts the game by changing the cards on the table. This character can be used to force change as well as to prompt action. You can design it as the activity's kickstarter.

STEP 2: The Call of Adventure

Here, you must demonstrate that the Ordinary World is out of balance, and your children must act in response - that is the *Call of Adventure*! How will your heroes restore the Ordinary World? By pursuing an adventure that

you have planned for them. For example, developing new skills and knowledge. What could the trigger be? Please take a look at Self-Determination Theory in the Annex of this chapter. However, simply establishing a good objective, a shared and compelling purpose, is insufficient. You must design activities that allow your pupils to play freely rather than being directed, and you must provide opportunities for them to demonstrate their abilities.

STEP 3: Refusal of the Call

Of course, choosing the adventure's trigger is a difficult decision. You might naturally go to the third stage of the Hero's Journey: the *Refusal of the Call*. You might have previously employed the Herald to announce the Call. This may not be sufficient: some children are hesitant, may not understand the duty, and may not recognise the true importance of what they are called to.

STEP 4: Meeting the Mentor

You've reached the fourth step: *Meeting the Mentor*. Here, you must behave in the first person as a mentor, sometimes assisted by other coworkers. You must give the necessary support for young people to participate. If necessary, they can be addressed one by one, but it is critical that all of them participate.

STEP 5: Crossing the Threshold

When they commit, they are prepared to enter the adventure's Special World. By *Crossing the Threshold*, individuals become more involved, as they confront the first tests and obstacles posed by the Threshold Guardian. Kids begin to exploit their innate strengths and seize chances that arise. True, these initial difficulties do not have to be very challenging, but they must prepare children for future harder tasks.

STEP 6: Tests, Allies, Enemies

This is exactly what happens in the next phase. *Tests, Allies, Enemies*. Here, your heroes face increasingly challenging difficulties. The Shapeshifter continues to test them relentlessly. If they could play alone in the previous step, now the difficulties must be addressed collaboratively. They'll have to team up eventually!

They need to share their skills and information. They have primarily relied on their strengths thus far, which is no longer sufficient for the following phases.

STEP 7: Approach to the Inmost Cave

In *Approach to the Inmost Cave*, children must replenish their resources. Owning strengths is not enough. As a result, the young people must reach out and obtain what they require. External resources are required and must be collected. All opportunities must be taken in preparation for the huge Ordeal, the great Boss Fight, and the ultimate challenge!

STEP 8: the Ordeal

In classic Hero's Journeys, the protagonist confronts and occasionally overcomes death. This is not the case for your children, of course! However, if we utilise this metaphor, we might see the ultimate challenge as something that truly exposes the young people to failure. They can still make it if they work together. The challenge should be difficult, if not impossible (but then you must explain why and what the efforts were for).

STEP 9: Reward

It is time to celebrate, eventually! Your heroes made it! They overcame the great difficulty! They received the priceless Elixir! That is, new competences and knowledge! Don't forget to recognise accomplishments and efforts as success isn't the most essential aspect of the journey. It's the way it has been done, together.

STEP 10: the Road Back

So they're ready to return to the Ordinary World. The *Road Back* is not a relaxing journey. The Trickster might come in here to trigger the return journey. Your young people must be invited to consolidate what they have learnt. To think about what happened and draw connections. Think about Kolb's Experiential Learning Model[14]. The ordeal was the heroes' Concrete Experience. All of the other problems they faced were other concrete experiences. So they must reflect

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[14] See the Annex of this chapter

(Reflective Observation), assimilate new knowledge (Abstract Conceptualization), and prepare to put it into practice (Active Experimentation).

STEP 11: the Resurrection

The *Resurrection* provides a fresh and conclusive Concrete Experience that fully utilises newly gained information in a last challenge that demonstrates the heroes' transformation.

STEP 12: the Return with the Elixir

Finally, the *Return with the Elixir*. Your heroes have returned to the Ordinary World, but they have been transformed by the Elixir of new knowledge and skills. And the Ordinary World will not only change, but also improve. This also requires a celebration.

THE HERO'S JOURNEY	
WHAT	It is about the profound transformation of the individual. The hero sacrifices their old self and even their ego in service of enlightenment and the greater good. By the end, they are not the same person who started the journey. And upon returning, they often use their newfound wisdom to change society itself.
WHO?	● "Users": the young people you work with, you ● "Providers": You and your design team ● (Possible Stakeholders: family, teachers, other youth workers, psychologists, game designers, municipality…)
HOW	● **Dynamics**: Constraints (e.g. the boundaries set around the activities, the obstacles to be around), Emotions (e.g. frustration due to failures, celebrations), Narrative (e.g. the leading story you build to drive activities), Progression (e.g.

intermediate steps to pass through), Relationships (e.g. who is involved)

- **Mechanics**: Acquiring resources, Challenging, Cooperating, Providing Feedback, Reaching Win / Loss (Termination) States, Rewarding
  - Optionally, also Making Transactions, Playing in Turn, and Relying on Chance and / or Randomness (to raise surprise) might be useful.
  - Competing is likely the least interesting, unless you do not want to put teams in competition towards the same goal, but if you do it, reflect on the actual value of such an option. Would it be worth it to make vulnerable people play against one another?
  - Maybe it is more valuable to intend competition as part of a collaborative effort of self-improvement.
- **Components**: Achievements, Avatars (e.g. to embody the different supporting roles like the Mentor, the Trickster, etc.) "Boss fights" (i.e. the Ordeal), Collections (e.g. the resources to be acquired), Combat (e.g. the obstacles to overcome), Content Unlocking (e.g. resources that become available at certain conditions), Quests, Social Graph (e.g. for understanding who is on your side and who is not), Teams, Time
  - Of course other components might be useful too: above all Levels to mark different phases of the endeavour, Gifts might be useful to resolve deadlocks if certain resources cannot be accessed, Performance Graphs if you want to measure the progress over time, Badges if you want to award special performances.
  - Other components that are more suitable for competitive contexts such as Leaderboards and Points are far less relevant in this case

Table 9: The Hero's Journey

Session 4 How to build a useful game for you

Now that you have seen some examples that help you understand how gamified activities and games are designed, let's see how you can do it by yourself.

Let's start with something that is familiar to your personal experience as a youth worker. Let's map your best experience:

STEP 1:

Think of your biggest achievement / experience with your kids / teenagers / students involved

- who was involved?
- what was the context?
- what was the challenge?
- what happened? how did you get there (i.e. to the achievement)?
- what did you do?
- what did you use?
- what choices did you make?
- what was the outcome?
- what did you learn?

STEP2:

Let's build a matrix where to map all these elements starting from the columns:

- The first column is called Experience Elements and it contains the descriptors of each row
- The second one is represented by the real or virtual items that instantiate the Experience Elements
- The third column is about the Game Dynamics
- The fourth column is about the Game Mechanics
- The fifth column is about the Game Components

STEP3.1:

Now let's consider each row one-by-one:

- First row is about your objective: the problem you solved, the goals you pursued and achieved

  - So, in the second column you enter the actual problem you solved, the main objectives you pursued

  - And in the other columns we enter the related gamification design elements. Dynamics: Progression and Constraints for sure as you had certainly been subject to some limitations in your action but you succeeded eventually. Let's also include Emotions and Relationships as it is unlikely that you acted alone and that emotions were not involved. It is also possible that you might have followed a leading narrative to roll out around your activities, or maybe this fil rouge emerged along the way and you were able to recognise it only retrospectively.

  - This leads directly to the related Mechanics: Challenging, Reaching Win / Loss State, Rewarding, and Providing feedback, that allows you to measure the progress towards success. These are just a starting point, but you might have implemented, consciously or unconsciously, other Mechanics.

  - Achievements, Content unlocking and Quests are the likely Components to be listed as they represent the fulfilment of the objective, the means, and the endeavour ahead.

STEP3.2:

Now let's consider each row one-by-one:

- The second row is about the Stakeholders, the actors that participated in your activity

  - You as first actors, of course, then, your kids / teenagers / students, and likely some side elements that influenced the course of the activity somehow, that is actors that played on your students' and your side, or the ones that maybe played against. It's a matter of mapping the allies and foes in the second column. You can also find them among other youth workers, kid's family members,

teachers, representatives of the municipality, clinicians, psychologists…

- The design elements you can pick up are pretty straightforward: Relationships most of all, but also Constraints and Progression as they can reflect the consequences of what these people do, and the related Emotions and their role in the story as you planned or found out later. Basically all Dynamics are represented.
- For the Mechanics you can list Competing, Cooperating, Making transactions, and Playing in turns.
- Avatar, Social Graphs, Team are the key Components to map

STEP3.3:

- Third row: Strengths.
  - These are the internal resources you and your young people are already equipped with. We are talking of personal assets: Skills, Expertise, Knowledge, Attitudes, Values.
  - They represent the baseline for measuring your students' "Progression". With them the kids can face their first challenges.
  - Acquiring resources, Cooperating, and Making transactions are the other obvious Mechanics.
  - Strengths represent the baseline for starting Quests, and for measuring own capabilities.
  - Content unlocking will allow participants to get more resources, to consolidate their own Collections.

STEP3.4:

- Next row is just the opposite of the third one. We look at the Weaknesses, what your kids actually lack. Actually, this row is about the goals and the objectives that have to be pursued by your young people to fill their gaps, in view of the main objective you declared in the first row, individually, and collectively.
  - So in the second column you enter the actual problem gaps of the kids, their fears, attitudes, their missing competences, knowledge and expertise.

- o Progression, to show the way ahead, and Constraints, to express the current limitations, are the obvious Dynamics.
- o The key mechanic is Acquiring resources.
- o Achievements are the key component.

STEP3.5:

Now let's move our focus on the contexts and boundaries conditions.

- ● Opportunities are described in the fifth row. They play a double role: on the one hand, they are external resources, on the other hand, they can represent some objectives to be attained. In both cases to help youngsters to make their progress during the activity, or to help you in designing and rolling out your activity successfully.
  - o Examples of Opportunities might be the use of some technologies, external factors such as the political and cultural climate, as well as the policy making in your country. But you have not to forget the closer environment around the kids, their families, school, sport teams, …
  - o Progression again is the emblematic dynamic in this case
  - o Mechanics reflect emerging new Challenges, Acquisition of new resources, Teamwork likely, and a certain degree of uncertainty and Randomness,
  - o Components follow the same pattern as for Strengths.

STEP3.6:

- ● The alter ego of opportunities are Threats. They actually represent the challenges lying in the context. You can consider them as the main drivers for your activity design work and to engage the kids.
  - o For this reason they can be instantiated by the same factors as in the case of the threats, like the family and the school environments, the political / cultural climate and policy making in the country, and technological factors.
  - o Once more, these represent Constraints that can endanger the Progression of the activity for the Dynamics.

- o Mechanics include challenges, of course, but also a certain degree of randomness.
- o And the components include not only the new Achievements to be accomplished to overcome the threats, but also the confrontation that they call on, and the pressure of Time, of course.

STEP3.7:

- Finally, the last row of the table is about the Choices you made in the design phase and by the students during the activities you planned.
  - o What has been done facing the challenges? These are choices to be made.
  - o It is about the Constraints met, and the consequent advancement.
  - o It is a matter of providing feedback once the choice has been made.
  - o And of progressing towards the accomplishments of own objectives, maybe against time…

Experience elements	Instantiations / Examples	Dynamics	Mechanics	Components
<the problem to solve, the goals to pursue and achieve>	your objective(s) (e.g., your students learning about…, raising awareness about…)	(Narrative), Progression, Constraints, Emotions, Relationships	Challenging, Providing Feedback, Reaching Win state, Rewarding,…	Achievements, content unlocking, …
<Stakeholders> = allies & foes	Kids / teenagers / students, parents, clinicians, teachers, policy makers, municipality,	Relationships, Emotions, Constraints, Narrative, Progression	Competing, Cooperating, Making transactions, Playing in turns, …	Avatar, Social Graphs, Team, …
<Strengths> = internal resources	Personal assets: Skills, Expertise, Knowledge, Attitudes, Values	Progression, …	Acquiring resources, Cooperating, Challenging	Quest, collections, content unlocking, performance graphs
<Weaknesses> = goals, achievements	Fears, attitudes, (Missing) competences / knowledge / expertise	Constraints, Progression, (Relationships, Emotions?]	Acquiring resources, …	Achievements, …
<Opportunities> = (partial) objectives, external resources	political / cultural climate, policy making, technology, family, school, sport	Progression, ….	Acquiring resources, Cooperating, Relying on chance, Challenging,	Quest, collections, content unlocking, performance graphs, …
<Threats> = challenges	political / cultural climate, policy making, technology, family, school, sport	Constraints, Progression, (Relationships, Emotions?]	Challenging, Relying on chance …	Achievements, Combat, Boss Fight, Time, …
<Choices>=challenges	what has actually been done	Constraints, Progression	Challenging, Providing Feedback, …	Achievements, Time, …

Table 10: Map your best experience as a youth worker (sample table)

STEP4:

- Now that you have mapped your best experience, you can appreciate how everything you experienced can be reconducted to facts, decisions made, difficulties met, opportunities taken, resources implemented or come across, personal "assets" (like skills, knowledge, attitudes, values) used and / or acquired over time, … all of this contributed to make you succeed.

- The last and final step is the Celebration of the successful experience. It is not just a matter of describing how you did it or what you are going to do if you have not done it yet. It has, instead, to be a source of reflection on what really rewarded you, on the why and on what consisted of the success of your experience.

- This might have been the real yet hidden, still unknown objective of your experience and, now that it has been revealed to you, you might set it as an explicit goal for your next endeavours. This map will then represent a source of inspiration and an example of how you can use game design elements and thinking for designing your activities.

Summing up you can follow this model and fill up the table
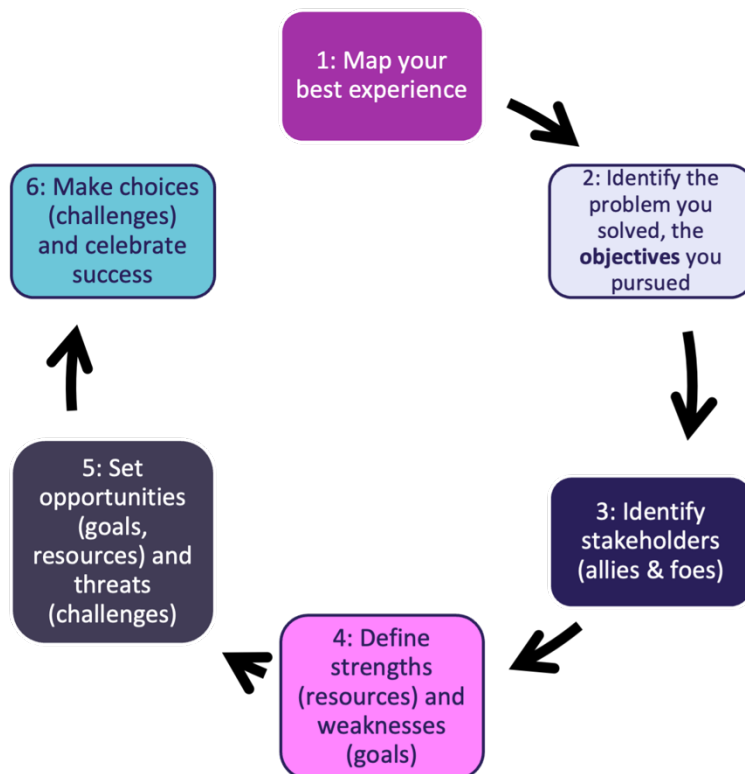
Figure 15: How to build a game on your best experience

Session 5 Some powerful tools of engagement built through Game Design

In this section we present some tools that highly contribute to the engaging and motivating nature of games. Some of them have been analysed by Jane McGonigal in her book "Reality is Broken" (McGonigal, 2011).

Her perspective explores these concepts as powerful psychological tools that well-designed games employ to keep players engaged, motivated, and striving to improve their skills and progress through the challenges.

In the second part of the book she also provides great leads to implement game design well in real life.

It is easy to find clear references to Growth Mindset and Self-Determination Theory. However, it is also clear that a misuse, or even an abuse of the very same tools can make players fall into the traps of addiction.

Finally, you will find a few reminders about common tools largely used and often abused like notifications and the gamification triad, Points, Badges, Leaderboards (PBL).

Fun failure

McGonigal argues that one of the key reasons games are so compelling is that they make failure enjoyable and even motivating, rather than disappointing or discouraging. She refers to this as *fun failure*. In the real world, failure is often seen as something to be avoided at all costs - it can lead to embarrassment, setbacks, and negative consequences. However, in well-designed games, failure is an expected and embraced part of the experience.

She leverages on the work performed by M.I.N.D. Lab that investigated physical indicators like heart rate, skin conductivity and electrical activation of facial muscles for emotional engagement and found the same excitement peaks whether the players were winning or they were losing (Ravaja et al, 2005).

In her own words: "the right kind of failure feedback is a reward. It makes us more engaged and more optimistic about our odds of success. Positive failure feedback

reinforces our sense of control over the game's outcome. And a feeling of control in a goal-oriented environment can create a powerful drive to succeed."

There are a few key ways games achieve this fun failure:

1. Failure is framed as a temporary setback rather than a permanent condition. The game continues after failure, giving an opportunity to try again.

2. Failure provides useful feedback to the player on what went wrong and what areas need improvement. This feedback loop allows for learning and skill development.

3. Failure is often presented in a lighthearted, humorous way through audio/visual effects and animations. Rather than harsh negativity, it maintains a sense of playfulness.

4. The stakes of failure are very low - at most, players may lose a few minutes of progress rather than facing real-world negative consequences.

5. Failure is expected and embraced as part of the iterative process of skill mastery. Games are designed to start easy and progressively ramp up difficulty.

The fear of failure is deeply ingrained and acts as a brake on taking risks or pushing one's limits in the real world. Games remove this fear by providing a safe, consequence-free environment for iterative learning through failure.

Figure 16: Super Monkey Ball 2 and Rock Band

Figure 16 pictures refer *to* Super Monkey Ball 2: https://en.wikipedia.org/wiki/Super_Monkey_Ball_2 , Rock Band 2: https://en.wikipedia.org/wiki/Rock_Band_2

For you, as a youth worker, it could be an opportunity to use, but also an alert: are the games played by our kids presenting actual risks generated by fun failure? Well, not in the way MacGonigal presents them, but maybe it is good to remind that there are no substitute lives in the real world.

FUN FAILURE	
WHAT	• Gamers spend 80% of the time failing and still love what they are doing rather than being frustrated. **Addictive**. • M.I.N.D. Lab investigated physical indicators for emotional engagement ➜ excitement peaks winning / loosing. • Hope to win next time. *Sense of control* ➜ *Doable*. The more we fail, the more we are eager to do better. • *Prolonging the game experience. Improving your Mastery*.
WHO?	• "Users": young people you work with, you • "Providers": games
HOW	• **Dynamics**: Emotions, Constraints, Progression • **Mechanics**: Challenging, Providing Feedback, (Competing), Reaching Win / Loss (Termination) States • **Components**: Achievements, (Leaderboards,) (Points)

Table 11: Fun Failure

Social Connectivity

McGonigal argues that reality is often disconnected, with people feeling isolated and lacking meaningful social bonds. In contrast, games excel at building stronger social connections and more active social networks among players.

The rise of social games like Lexulous on Facebook demonstrated how games could facilitate social interactions and connections between friends and strangers. The subsequent success of games like FarmVille showed how blending easy gameplay with social connectivity and a sense of productivity could deeply engage players.

McGonigal cites the author Eric Weiner, who wrote "Our happiness is completely and utterly intertwined with other people: family and friends and neighbors... Happiness is not a noun or verb. It's a conjunction. Connective tissue." Games

provide this *connective tissue* by tapping into our fundamental need for social relatedness.

Figure 17: Lexulous and Farmville[15]

This is the actual power of connecting people. Platforms like Discord support a constant contact among players by providing chat and video communication facilities. As usual this could be highly useful, even therapeutic as during the lockdown periods due to the COVID pandemic, allowing young people to keep connections and of creating even new bonds when their normal social life was precluded by sanitary restrictions. But it could also be extremely dangerous if it becomes a full time absorbing activity.

SOCIAL CONNECTIVITY	
WHAT	● Getting involved with other people on common objectives + Getting in touch with friends and relatives. Using chats. ● *Asynchronous playing = Using time* ➔ *generating anticipation + creating expectations*. *Creation of Commitment* ➔ **Addictive**. ● Helping out ➔ Prolonging the game experience. Improving your Mastery.
WHO?	● "Users": young people you work with, you ● "Providers": games
HOW	● **Dynamics**: Relationships, Progression, (Emotions) ● **Mechanics**: *Competing, Collaborating*, (Challenging) ● **Components**: Social Graph, Achievements, Time, (Gifts)

Table 12: Social Connectivity

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[15] Lexulous: http://www.lexulous.com/, Farmville: https://www.facebook.com/FarmVille

Happy Embarrassment

Happy embarrassment refers to the positive feelings that arise when we share vulnerability or embarrassing moments with others in a lighthearted, playful way. McGonigal cites examples like friends gently teasing each other about silly mistakes or awkward situations they've experienced.

While embarrassment is typically seen as an unpleasant emotion to avoid, games provide a safe social context where mild embarrassment can actually bring people closer together. The shared laughter and inside jokes create a sense of intimacy and bonding within the gaming community.

McGonigal argues that games encourage this type of happy embarrassment through cooperative gameplay, mentoring opportunities, and the epic challenges players face together. The willingness to be vulnerable in front of others and have a sense of humour about one's failures or awkward moments cultivates stronger social ties and positive emotions.

By reframing embarrassment as something to be embraced rather than avoided, games tap into our fundamental human need for social relatedness in an enjoyable, prosocial way.

Figure 18: WarioWare: Smooth Moves[16]

For you as a youth worker, this could be a great way of de-dramatizing difficult situations. Of course, it is always important to understand how far one can go in order to preserve reciprocal respect. Therefore, a joyful atmosphere is key to avoid frustration and resentment in those who have been defeated, and the intention of not hurting the player's feelings has to be apparent.

HAPPY EMBARRASSMENT	
WHAT	• Teasing each other (including pwnage[17] and trash-talking) ➔ creating social bonds, sharing positive feelings. • Increases trust and likeliness (and reputation) • Using chats.
WHO?	• "Users": young people you work with, you • "Providers": games
HOW	• Dynamics: Relationships, Emotions, Progression • Mechanics: Competing, Challenging, Reaching Win / Lose States, Providing Feedback • Components: Social Graph, Achievements, (Gifts), (PBL)

Table 13: Happy Embarrassment

Vicarious Pride

Jane McGonigal describes *vicarious pride* as a powerful prosocial emotion that arises when someone we've taught or mentored succeeds.

She cites the Yiddish word "naches" to refer to this "bursting of pride" we feel in the accomplishments of those we've invested in. As a matter of fact this emotion ranked at the eighth place among the ones gamers would like to feel in a survey run over more than a thousand respondents[18].

McGonigal argues that vicarious pride likely evolved as a mechanism to enhance group survival and strengthen social bonds.

The happiness we derive from celebrating others' growth and achievement encourages us to contribute to their success, forming supportive networks that benefit everyone involved.

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[17] As Erica Naone explains "The word *pwn*, which rhymes with *own*, is Internet slang for *dominate completely*." (Naone, E. 2008)

[18] Bateman, "Top Ten Videogame Emotions."

Figure 19: Braid

She provides examples like family members teaching each other the intricate video game Braid[19], with the ones that already succeeded bursting with vicarious pride when the other ones finally master a difficult level. McGonigal suggests this positive emotion motivates mentorship and cooperation within communities.

The more people we help learn and develop skills, the more opportunities we have to experience this intense sense of satisfaction and well-being through their triumphs. Vicarious pride reinforces our personal investment in the growth of our social networks.

As a youth worker you should try to use this to appreciate how good mentoring is and increase the sense of responsibility of young people.

VICARIOUS PRIDE	
WHAT	● Helping out ➔ Pride we feel when someone we mentored succeed. ➔ Prolonging the game experience. Improving your Mastery. ● Having impact ➔ Reputation ● Active contribution ➔ *Collaborating*.
WHO?	● "Users": young people you work with, you ● "Providers": games
HOW	● **Dynamics**: Relationships, Emotions, Progression ● **Mechanics**: *Challenging, Competing, Collaborating* ● **Components**: Social Graph, Achievements, (Boss Fight), (PBL)

Table 14: Vicarious Pride

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[19] Braid: http://braid-game.com/

Ambient Sociability

Even when playing solo, gamers often feel a sense of *ambient sociability*, that is, the comfort of knowing others are simultaneously engaged in the same virtual world and shared experience.

McGonigal cites the example of World of Warcraft, where players spend around 70% of their time on solo missions, yet the knowledge that hundreds of thousands of others are online at the same time provides a feeling of co-presence and social connectivity.

This ambient sociability, the implicit awareness of being part of a larger community with common goals and experiences, is a key driver of engagement and motivation in games. It taps into our fundamental human need to feel connected to something bigger than ourselves.

Figure 20: World of Warcraft[20]

This is actually one of the most important levers also for gamified apps as the ones for language learning. Duolingo, which will be treated in the Annex of this chapter, is a good example. Again, as in the case of Social Connectivity, this could be of help in hard times (e.g. lock downs), but also a trap if control on own time is lost.

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[20] World of Warcraft: https://worldofwarcraft.com/en-us/

AMBIENT SOCIABILITY	
WHAT	• Social presence. Reputation. Getting involved with other people on common objectives + Strengthening existing relationships. • Sharing the virtual environment: "playing alone together" *Prolonging the game experience. Improving your Mastery*.
WHO?	• "Users": young people you work with, you • "Providers": games
HOW	• **Dynamics**: Relationships, Progression, Constraints, Narrative • **Mechanics**: *Competing, Collaborating, Challenging*, Providing Feedback, Reaching Win/Lose states, Acquiring Resources • **Components**: Quests, PBL, Social Graph, Achievements, (Combat,) (Boss Fight)

Table 15: Ambient Sociability

The Epic Endeavour

According to McGonigal some well-designed games can satisfy our fundamental need to feel part of something bigger than ourselves like an *epic*, awe-inspiring *endeavour*. She uses the example of the video game *Halo* to illustrate this motivating force.

Halo's developers created an overarching narrative where players were part of a planet-wide struggle for human survival against an alien threat. This context gave even mundane tasks a sense of higher purpose. Remarkably, players collectively achieved over 10 billion *kills*, representing an unprecedented shared experience on an epic scale. For comparison, McGonigal argues our ancestors seemed driven to construct monumental environments and structures that brought communities together with a shared sense of purpose. She suggests this tendency is deeply rooted in human nature.

Therefore, by providing compelling narratives and opportunities to collaborate towards epic goals, games can cultivate attitudes of *optimistic persistence* to tackle real-world challenges. Reducing our focus on the self and instead feeling part of a larger, world-changing mission allows us to derive greater meaning, pride and happiness from our efforts.

Figure 21: Halo / Reach[21]

The risk, obviously, is that the game reality is so much more satisfying and compelling than the real world, that it can trigger escapism temptations. This is also the same kind of risk that can be foreseen by watching *Ready Player One[22]* movie where most of the humanity prefers to live the OASIS Virtual Reality world rather than facing the real world. However, the federative power can be used for good causes too. Take a look at the Annexes about two projects, Eyewire and Fold.it where the potential of mobilising communities brings concrete results.

EPIC ENDEAVOUR	
WHAT	• Games tap into our fundamental desire to feel part of an epic, awe-inspiring mission bigger than ourselves by providing compelling narratives and opportunities for massive collaborative efforts towards shared goals. • This reduces our self-focus and allows us to derive greater meaning, pride and happiness from our participation in world-changing endeavours. • Risk of escapism, if the game is much better than the real one.
WHO?	• "Users": young people you work with, you • "Providers": games

[21] Halo / Reach: https://store.steampowered.com/app/1064220/Halo_Reach/
[22] Ready Player One (film) https://en.wikipedia.org/wiki/Ready_Player_One_(film)

HOW	● **Dynamics**: *Narrative*, Relationships, Progression, Constraints,
	● **Mechanics**: *Collaborating*, *Challenging*, (Competing,) Providing Feedback, Reaching Win/Lose states, Acquiring Resources
	● **Components**: Quests, Achievements, (Combat,) (Boss Fight,) PBL, Social Graph

Table 16: Epic Endeavour

Notifications

Notifications are likely the real killer application of addiction and even most likely the most powerful way to keep players engaged through digital technologies.

Before the advent of computer games even the same idea of notifying a player about her status within the game or of what is going on in the game, was not conceivable as it didn't make much sense. The use of mobile technology was limited and there was no link between the game and the real world.

It is with online games and in particular with the diffused use of smartphones that games have become pervasive in players' lives, through notifications.

This regardless of whether one is playing an individual game or a social game. The social aspect that is linked to the fact that players belong de facto, willing or not, to communities or cohorts of players in game communities, just makes the instrument more pervasive and impactful.

This is true also for gamified applications.

Just to provide an example, let's take a very popular app for learning languages. In this application that can be deployed on mobile devices like smartphones and tablets, but that it can be done also online, there are several kinds of notifications that can be delivered and through two main ways:

- Through the app itself
  - via *in-app* temporary *messages*,
  - temporary *messages to be displayed on the mobile device screen* when is locked or unlocked,
  - *widgets* to be permanently displayed on the mobile device wall,
- via *e-mail*.

What do they inform about?

- Reminders about daily practice
- Reminders of *streaks* of consecutive days you have already had your practice (it has to be incremented! You certainly do not want to take the risk of stopping your performance, now!)
- Reminders of different types of rewarding connected to specific challenges that regularly are offered to users' attention (often these challenges are timed and can be addressed only in specific periods of the day)
- Reminders of weekly progresses (informing of how many lessons you have covered during the past expressed in numbers, about how you performed with respect to your previous weeks by the means of a positive or negative percentage, and how you compared to other app users as the percentage of users that did worse than you)
- Information about your *league status* (every user belongs to a cohort of peers, a league, whose members are virtually *competing against each other*; there are 10 leagues that are order in terms of increasing performance, and each week the status of the user is revised, allowing to improve her status by acceding to a superior league, or being demoted to an inferior league if her performance was not good enough to keep at least the current league)
- Information about your positioning within the current league (have you incremented your position? Has someone taken over your position in the leaderboard? Actually, your performance set your positioning in the leaderboard)
- Social information: you can follow friends that are participating in the same endeavour, getting to know about their status, their accomplishments
- You can also be notified about your new followers, so people that you didn't choose as you friends, but they did to you, and you get to know about their status, their accomplishments
- You are notified about the set up of quests you share with your friends and about their ongoing results
- There are also updates about product features
- Updates about learning tips
- Updates about marketing campaigns

These are just the kinds of explicit notifications that this learning app provides you with on a regular basis or on the spot (e.g. someone has taken over your position in the leaderboard) unless you do not opt them out (well, not all of them can be deactivated, some are permanent).

We have already seen that providing Feedback is very important and it is a fundamental part of the game design. Notifications is a kind of meta-Feedback since they inform about what is happening in the game or in the gamified activity by tapping information into the actual components and mechanics that have been implemented. Leaderboards, levels (i.e. the leagues as macro levels, the widget that reflect your status), Badges, Points, Performance Graphs (e.g. progression bars of individual challenges, individual performance over the week measured by the graphic of the lessons followed day by day) are explicit ways of providing feedback that have been used by Notifications to inform you in addition to what you, as a user, can already see each time you open the app and start your learning session. There are other design elements that are used by notifications in a more or less explicit way, by setting somehow a game with you: time and competition.

As you have already understood, the *time* factor is key: most of these notifications are just *temporary* messages that disappears once read, but that are *regularly* displayed over time, every day, or at any recurring event; but there are other ones, like the ones represented by widgets a player can decide to install on her mobile device wall that are *permanent* and that act as a constant reminder of performing an activity daily, like taking a pill.

Moreover, you can see how much *competition* is wired into many of these notifications. The fact is, that it is all a supposed-to-be competition in place as, despite it is very likely that all other users have been administered the same tests you are given, you are not really competing against anybody if not yourself, that is, trying to improve your skills, provided that your actual goal is really to learn a new language, of course.

Luckily, as already said, the users of the language learning application have the possibility to turn on and off all, or most of these notifications at will. You can just opt out of only one kind of notifications, through app or via email, or both. But is it worth skipping all notifications?

Some of them might be indeed useful. For instance, if you really want to practice your new language on a regular basis, it could be useful to set a reminder at some specific time of your day, with a desired frequency during the week. Really a good way of remembering to take your learning pill when you want to. But what about the other ones? Are all other ones really really needed?

Be vigilant when you start playing a game or a gamified activity. Notifications can really pollute your life.

A quick note on Points, Badges, Leaderboards (PBL)

They are often referred to as the infamous "gamification PBL triad". Let's say that they represent the easiest way to inject extrinsic motivation by leveraging on the "carrot and stick" model of rewarding:

- if you do well you gain points, you grow up in the leaderboard, and if you reach a certain threshold in your performance you can be awarded with a badge! Awesome! That's the carrot!
- But, if you do not do well, you lose points, you plunge down in the ranking, and you ca no longer aim at any awards at all. That's the stick.

Many times these are the only elements present in poor gamification efforts. Not certainly in blockbuster games nor in sophisticated gamified experiences as well demonstrated by research on human motivation.

Moreover, if one relies on these components only might risk not only to provide a boring experience, but also to get bad results: imagine a player / user that is pretty down in the rankings, or, which might be even worse, someone that has a relatively good performance, let's say close to the top three, but with the people ahead at a such higher level that there is simply no hope to get there, even closer. That could be a really frustrating experience and a reason for disengagement.

Triggering intrinsic motivation, instead, is the real game changer. But you cannot get there by just using PBL. Discover more on this in the Annexes on Self-Determination Theory and on Flow.

Minds on fire! #1

Please answer to the following questions. Tick all correct answers.

(Please note: if you are not alone, answer the questions as a team by applying the 1-2-4-ALL facilitation technique to all of them and try to reach a consensual feedback on the answers to provide. Then verify the results.)

- Question 1: What are the key components of a useful game for youth workers?

Proposed Answers	Correct Answers
1. Engaging narrative and storyline.	Correct. Engaging narrative and storyline are essential to capture and maintain the interest of players, facilitating deeper engagement and learning
2. Clear learning objectives and outcomes.	Correct. Clear learning objectives and outcomes ensure that the game serves its educational purpose, providing both the youth workers and the players with a clear understanding of what is to be achieved
3. Interactive and collaborative gameplay.	Correct. Interactive and collaborative gameplay encourages active participation and teamwork among players, enhancing the learning experience through social interaction
4. All of them	Correct. All the listed components are key to designing a useful game for youth workers, as they collectively contribute to an engaging, educational, and collaborative gaming experience
5. None of them	Incorrect. All of the statements are correct as they are essential components of a useful game

- Question 2: What are the distinctive traits of games and gamification?

Proposed Answers	Correct Answers
1. Both games and gamification present some objectives or goals that have to be attained.	Correct. Games and gamification are goal-oriented activities with objectives that drive the rollout of activities
2. Both games and gamification require voluntary participation.	Incorrect. Voluntary participation is debated and not necessarily a distinctive trait of games and gamification. For instance, so-called Serious Games are often an obligation in training, still they can be engaging and effective games.
3. Both games and gamification provide constant feedback to inform about the impact of activities performed.	Correct. Games and gamification provide constant feedback to inform participants about their performance
4. All of them	Incorrect. Not all statements are correct; statement 2 is incorrect.
5. None of them	Incorrect. Some of the statements are correct.

- Question 3: Which of the following are considered game dynamics in the document?

Proposed Answers	Correct Answers
1. Constraints, which limit participants' actions, choices, and outcomes.	Correct. Constraints are listed as game dynamics that limit participants' actions, choices, and outcomes
2. Emotions, which drive engagement and motivation.	Correct. Emotions are considered game dynamics that drive engagement and motivation

3. Achievements, which is used for defining intermediate and final objectives.	Incorrect. Achievements are a Component, therefore a way of instantiating how objectives are attained. At Dynamics level Narrative can be used to declare explicitly objectives. Other Dynamics that can refer implicitly to goals could be Progression and Constraints.
4. All of them	Incorrect. Not all statements are correct; statement 3 is incorrect.
5. None of them	None of them: Incorrect.

Annex: The interdisciplinary cultural roots of Game Design

Huizinga's and Callois' books are foundational texts in game studies and have influenced various fields, including psychology, sociology, and cultural studies, by providing frameworks to understand the importance and function of play in society. Starting from them we then analyse the relevant concepts and theoretical background that provide scientific foundations to the game design and its solid links with the player's engagement, from positive psychology (Self-Determination Theory, Flow, Growth Mindset) to Neurosciences, and Learning Theories (Kolb's Experiential Learning, Connectivism).

Johan Huizinga's book "Homo Ludens"

"Homo Ludens," a book by Dutch historian and cultural theorist Johan Huizinga, explores the concept of play as an essential and primary form of cultural expression. Published in 1938, the book argues that play is a fundamental aspect of human culture that predates and underpins art, language, law, and other societal structures.

Huizinga defines play as a free and meaningful activity, carried out for its own sake, bounded by time and space, and creating order and community. He emphasizes that play is not just a childish activity but a mode of experience from which culture itself arises. The term "Homo Ludens" translates to "Playing Man," suggesting that play is an intrinsic part of human nature and society.

The book discusses the role of play in various cultural domains, including language, law, war, poetry, philosophy, and art. Huizinga suggests that the elements of play (such as rules, competition, and imagination) are evident in these domains and that the spirit of play is necessary for the generation of culture.

Roger Caillois' book " Les jeux et les hommes"

In 1958 Roger Caillois, a French sociologist, published "Les jeux et les hommes" ("Man, Play and Games"). In this seminal work, Caillois explores the nature of play and games and their significance in human culture. He categorises play into four core categories:

1. *Agon*, or **competition**, where games are based on the equality of chances for the players, and the outcome is determined by skill, strength, or strategy.
2. *Alea*, or **chance**, which emphasizes games of luck and the surrender to fate, where the player's will is irrelevant to the outcome.
3. *Mimicry*, or **simulation**, where play involves the temporary acceptance of an illusion or imaginary universe.
4. *Ilinx*, or **vertigo**, focusing on games that alter the perception of reality, often inducing a physical sensation like dizziness.

Caillois also discusses the spectrum of play, ranging from *paidia* (free, unstructured play) to *ludus* (structured, rule-based play), and how these forms of play relate to the complexity of games.

He argues that play is fundamental to human culture and can be found in various aspects of life, including art, war, and ritual.

The Magic Circle

The concept of the *magic circle* originates from Johan Huizinga's theory of play as described in his book "Homo Ludens." The magic circle refers to the idea that play occurs within a special, separate space that is distinct from everyday life. This space is metaphorically circumscribed, where the normal rules and realities of the world are suspended, and special rules governing the play activity take effect. As a matter of fact, Caillois also contributed to the understanding of play as an activity set apart from ordinary life, governed by its own rules and structures.

Within the magic circle, players are free to experiment, act out roles, and engage in behaviours that might be unacceptable or impossible outside of this context. The magic circle creates a sense of safety and permissiveness, allowing for creativity and exploration. It is a foundational concept in game studies and has been used to analyse the boundaries and contexts of games and play in both physical and digital realms.

Salen and Zimmerman's contribution was to synthesize these ideas and apply them specifically to game design, emphasizing the importance of the magic circle as a design concept that delineates the boundaries of the game world from the real world. They argued that understanding and manipulating the boundaries of the magic circle is crucial for game designers, as it affects how players perceive and interact with the game.

The magic circle concept has been further extended to digital media and virtual worlds, where the separation between game and reality can become even more pronounced due to the immersive nature of digital environments. In these contexts, the magic circle encompasses not only the physical and temporal boundaries of play but also the psychological and emotional engagement of the player with the game world. The concept helps to explain the intense experiences and emotional investments that players can have in virtual environments, as well as the potential for games to influence players' thoughts, feelings, and behaviours even outside of the game itself.

While the magic circle provides a useful framework for understanding the unique space created by games, it has also been subject to critique and debate. Some scholars argue that the boundaries between games and reality are not as clear-cut as the magic circle suggests, pointing to the ways in which games can have real-world consequences and how real-world contexts can influence gameplay. Others have explored the permeability of the magic circle, examining how elements from the game world can leak into the real world and vice versa.

Despite these challenges, the concept of the magic circle remains a foundational idea in game studies and design, offering valuable insights into the nature of play, the design of game experiences, and the relationship between games and society.

Katie Salen's and Eric Zimmerman's book "Rules of Play: Game Design Fundamentals" (2003)

"Rules of Play" is a comprehensive textbook that aims to establish a theoretical framework for the field of game design that, at the time it was issued, lacked a critical vocabulary and unified model for understanding games.

The authors introduce the concept of *meaningful play* as the goal of successful game design and explore the concept of the *magic circle* as the metaphorical space where a game takes place and players adopt a *lusory attitude*.

Meaningful play is the process by which a player takes action within a game and the system responds to that action[23]. This interaction creates a sense of engagement and emotional-intellectual response, making the play experience meaningful. The authors argue that meaningful play is the primary goal of game design and is essential for creating engaging and impactful games.

Salen and Zimmerman outline several game design principles, focusing on the relationship between rules, play, and culture. They explore how games function as systems of experience and pleasure, and how they can be designed to evoke specific emotional and intellectual responses. The authors borrow from Mihaly Csikszentmihalyi's concept of "Flow" (Csikszentmihalyi, M. 1990) to discuss how games can create a state of total engagement and pleasure.

Luis von Ahn's "Human Computation" for creating Games With A Purpose (GWAP)

Now let's move to a quite surprising way of implementing game design principles in a rather surprising way of paving the way to Artificial Intelligence by using human computation power.

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[23] See the section on Engagement Loops in the section on SDT.

Luis von Ahn's doctoral thesis, "Human Computation", completed in 2005 at Carnegie Mellon University (von Ahn Luis, 2005), introduced the concept of *human computation* and was the first work on *Games With A Purpose* (GWAPs). The key idea behind GWAPs is to harness human brain power and intelligence to solve problems that computers could not yet handle effectively through the use of online games.

Von Ahn's thesis proposed that by embedding tasks that are difficult for computers but easy for humans within enjoyable online games, it becomes possible to leverage human efforts on a massive scale to generate useful computational results as a by-product of people playing the games.

The most well-known example of a GWAP from von Ahn's thesis is the **ESP Game** (later licensed to Google as the Google Image Labeler). In this game, two randomly paired online players are shown the same image and asked to provide labels or descriptions for it without any means of communication. When both players submit matching words, they score points. The key insight is that these matched descriptions provide highly accurate labels for the images, which can then be used to improve image search algorithms and computer vision systems.

Figure a: Players of the ESP Game try to guess what their partner is typing on each image.

Figure 22: The ESP Game (source: Von Ahn & Dabbish, 2004)

Other relevant examples of GWAPs introduced in the thesis include **Peekaboom**, where players locate objects within images, useful for computer vision training data,

Figure 23: the Peeakaboom game[24]. (source: von Ahn L, Liu R, Blum M, 2005).

and **Verbosity**, where players collect common-sense facts about words and concepts to build knowledge bases.

Figure b: Players of Verbosity enter commonsense facts to help their partner guess a secret word.

Figure 24: Verbosity game (source: Von Ahn & Dabbish, 2004)

Von Ahn's pioneering work on human computation and GWAPs laid the foundations for subsequent innovations like

- **reCAPTCHA** ("Completely Automated Public Turing test to tell Computers and Humans Apart") is a type of challenge-response test used in computing to determine whether or not the user is human for secured

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[24] Peek and Boom. Boom gets an image along with a word related to it, and must reveal parts of the image for Peek to guess the correct word. Peek can enter multiple guesses that Boom can see

transactions, or to control the access to platforms, it actually helped digitising books,

Figure 25: A reCAPTCHA challenge (looked in 2007) with a text box down the bottom, where you are required to write the words down. (source: Scooooly, Public domain, via Wikimedia Commons)

- and his co-founding of the popular language learning app **Duolingo**, which gamifies the process of translating web content and whose original sources were BuzzFeed posts and CNN articles. Interestingly, its first releases included performance indicators that related to the reputation of the translators: players were also asked to assess other players' translations (Garcia I, 2013). Human computing was leveraging on the community of users. In the current release this typical Web 2.0 feature is no longer present. Nowadays, if the immediate *feedback* on the translation or on the dictation is always provided along with an alternative correct solution sometimes as in the past, the methodology evolved more on an effective implementation of *the distributed practice* (also known as *spaced learning*), that is the repetition of the same information through different exercise variations over time, that allows to make the forgetting curve (Ebbinghaus H, 1885) less steep and possibly the flattest possible, which is confirmed also by neurosciences developments.
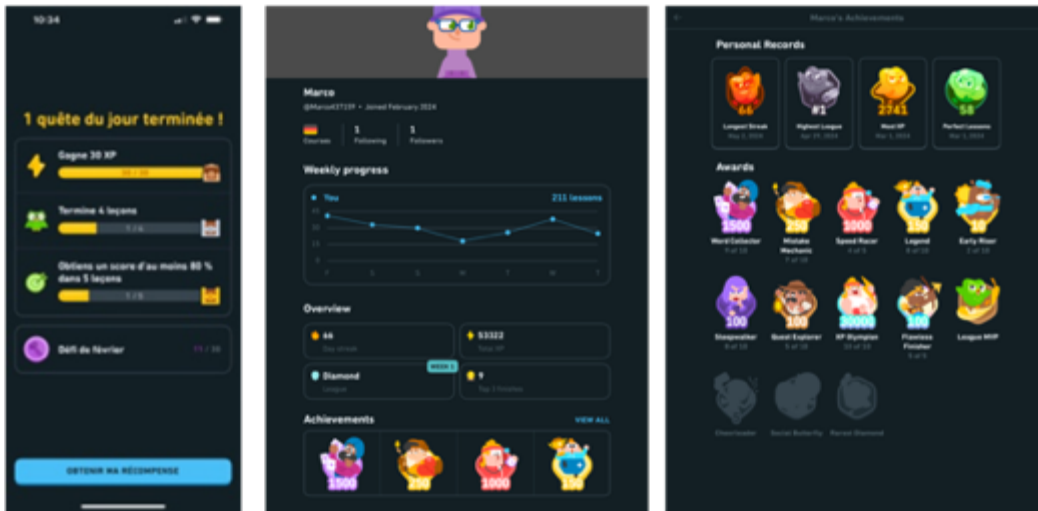
Figure 26: Duolingo interfaces[25] (source: screenshots from the author)

If we have to sum up the most recurrent and common game design elements present in GWAPs we can list Constraints and Progression among the Dynamics, Challenging and Providing Feedback above all among Mechanics, and Achievements as leading Component.

However, Relationships were pretty relevant for all but reCAPTCHA and are less impactful in the last releases of Duolingo than in the first ones. Duolingo then presents plenty of Components in relation with Progression and Rewarding (Leaderboards, Badges, Points, Levels, Performance Graphs, Collections, Virtual Goods, but even Gifts) and with Constraints (Time, Content Unlocking). It is also apparent there is a big push for creating a Competing environment, but there might be the risk of losing the focus on learning a new language.

Other examples of GWAPs

EYEWIRE

It takes months to create a dataset concerning neuron reconstruction and years to analyse it. This is why brain mapping games such as *Eyewire*[26] were developed. This is a citizen science example that transforms the act of mapping

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neurons into a three-dimensional puzzle. People all throughout the world have learnt to answer these problems while having no prior neuroscience training, thereby mapping neurons and furthering the field of connectivity. Finally, it moves us closer to understanding the brain.

Citizen scientists in the first initiative, Eyewire, found six new types of neurons in the retina and reassembled previously unknown circuits, potentially advancing the search for therapies for vision-related illnesses.
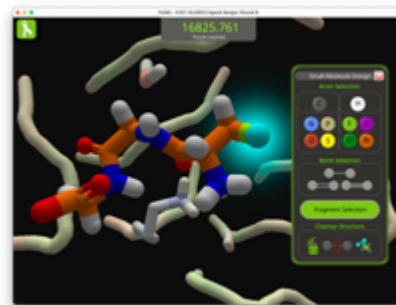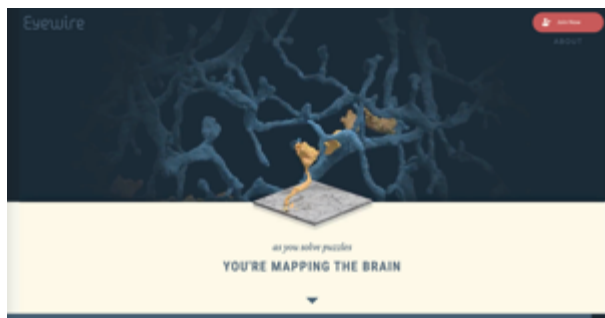
Figure 27: The Eyewire game (source: Eyewire.org)

FOLD.IT

Similarly to Eyewire, *Fold.it*[27] is a protein folding game where players compete to find the most compact 3D shapes representing protein structures, helping solve real protein structure prediction problems.

The game's discoveries are published in peer-reviewed scientific papers, and Fold.it participants are always acknowledged for their contributions.

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[27] https://fold.it/about_foldit

Self-Determination Theory

In his book Drive[28] Daniel Pink draws heavily from the work of psychologists Edward Deci and Richard Ryan on Self-Determination Theory (SDT) to explain the factors that truly motivate people. SDT proposes that human beings have three innate psychological needs, autonomy, competence, and relatedness, that are the sources of *intrinsic motivation*.

Autonomy refers to the desire to be self-directed and have control over one's life and work. People need to feel that their actions are volitional and aligned with their authentic interests and values, rather than being externally controlled or coerced. Autonomous motivation leads to greater psychological well-being and better performance.

Mastery / Competence is the need to develop mastery over challenges and gain new skills. We are intrinsically motivated to engage in activities where we can expand our abilities and feel effective. Providing optimal challenges matched to one's capacities, along with positive feedback, helps satisfy this need.

Purpose / Relatedness involves the need to experience connection, belonging, and caring with others. Even for inherently motivating activities, people's engagement is furthered when they perceive mutual understanding and involvement with those around them.

According to SDT, when these three psychological needs are satisfied, people will experience higher intrinsic motivation and better internalise values and behaviours. In contrast, controlling contexts that oppose need satisfaction lead to poorer motivation, well-being and performance.

Pink argues that relying too heavily on extrinsic motivators like rewards and punishments to drive behaviour, while providing temporary boosts, can actually undermine intrinsic motivation for complex or creative tasks.

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[28] Pink, D. (2009)

But, how do these intrinsic motivation pillars can be actually implemented?

SELF-DETERMINATION THEORY (SDT)	
WHAT	- Extrinsic incentive, sometimes known as the carrot and stick model, can be used to reward everyday actions. - However, whenever cognitive skills are required to complete a task, conventional rewards no longer work; instead, intrinsic motivation triggers do: *Autonomy*, *Mastery / Competences*, *Purpose / Relatedness*.
WHO?	"Users": young people you work with, you "Providers": games
HOW AUTONOMY	**Dynamics**: Constraints, Emotions, Progression **Mechanics**: Challenging, Playing in Turns, Providing Feedback, Reaching Win/Lose states, Acquiring Resources, (Competing,) **Components**: Quests, Achievements
HOW MASTERY / COMPETENCES	**Dynamics**: Progression, Constraints, Emotions **Mechanics**: Acquiring Resources, Challenging, Collaborating, Providing Feedback, Making Transactions, Reaching Win/Lose states, **Components**: Achievements, Collections, Content Unlocking, Performance Graph, Quests, Levels, PBL, (Combat,) (Boss Fight,)
HOW PURPOSE / RELATEDNESS	**Dynamics**: Narrative, Emotions, Relationships, Progression **Mechanics**: Providing Feedback, Collaborating, Challenging, Playing in Turns, Reaching Win/Lose states **Components**: Quests, Achievements, Combat, Boss Fight, Gifts, Social Graph

Table 17: Self-Determination Theory (SDT) & Game Design

Engagement Loops

Engagement loops work at "micro" level: each item contributes to reinforce the following one. It might be better described as a spiral rather than a loop since once an iteration is completed, it is likely that the original source of motivation has been depleted and a new trigger is needed (e.g. one challenge has been fully addressed, and a new one is looming ahead).
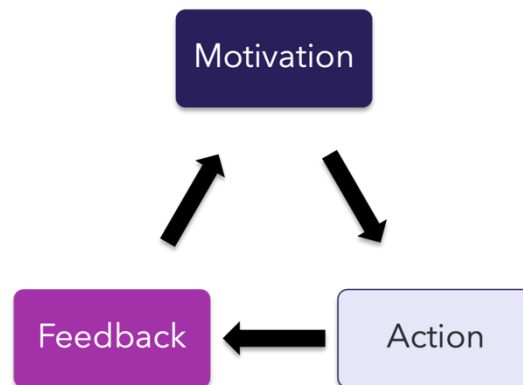
Figure 28: Engagement Loop

Progression Loops

Progression Loops work at "MACRO" level: Player's journey starts from a newbie state towards "Mastery". Although it looks more like a sequence of ladder steps, the loop concept comes from the fact that at each new level, the Player starts a new progression endeavour once more, looping their own efforts again and again.
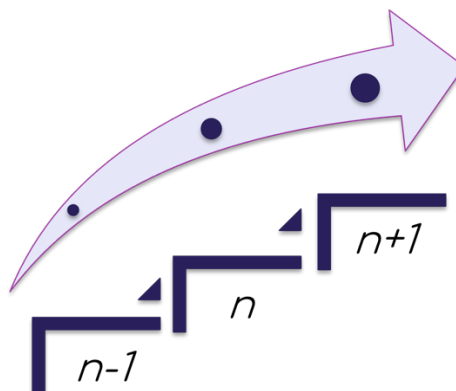
Figure 29: Progression Loop

The theory of *flow* was popularised by Mihaly Csikszentmihalyi in his influential book "Flow: The Psychology of Optimal Experience" (Csikszentmihalyi, M. 1990). It can be described as the state of mind in which a person becomes immersed when they are fully engaged in an activity. You have certainly experienced at least once a situation where you were so involved in what you were doing that you lost track of time passing, felt no hunger, and were impervious to any distractions. This can occur during both intellectual and physical activities.

Keith Sawyer further developed this theory in relation to groups (Sawyer, K. 2015). Examples of possible contexts are musical ensembles, sports teams, but also teamwork scenarios, whenever the activity performed completely absorbs all participants and everyone seems to be in tune with each other and the activity itself.

In his book "Mind in Society: The Development of Higher Psychological Processes" (Vygotsky, L. 1978), Vygotsky introduced the concept of the *Zone of Proximal Development* (*ZPD*). Generalising his original idea, one might infer that a learner sometimes needs external guidance to learn more, which requires stepping out of their comfort zone.

Figure 30: Zone of Proximal Development (ZPD)

Combining both theories, in the framework of the European project COLLAGE, researchers at City University of London have developed the following model about creativity and learning. Using a simplified flow model where only three mental states are represented, Boredom, Flow, and Anxiety, measuring the learner's skills for the considered activity on the horizontal axis and the effort / difficulty to perform it on the vertical axis, the model shows that not only is a good

balance of skills and effort necessary to experience flow during an activity, but also that learning requires an extra effort that pushes the learner not only out of their comfort zone, but even into a state beyond the flow zone, although for a limited time, the time necessary to acquire new knowledge / competences and therefore fall back into the state of optimal experience.

This transitional state, known as Arousal by Flow scholars, corresponds to the Zone of Proximal Development investigated by Vygotsky according to this new model. Bouncing back and forth between the Flow mental state and the ZPD allows one to boost the learner's curiosity and willingness to go beyond their own limits and achievements.
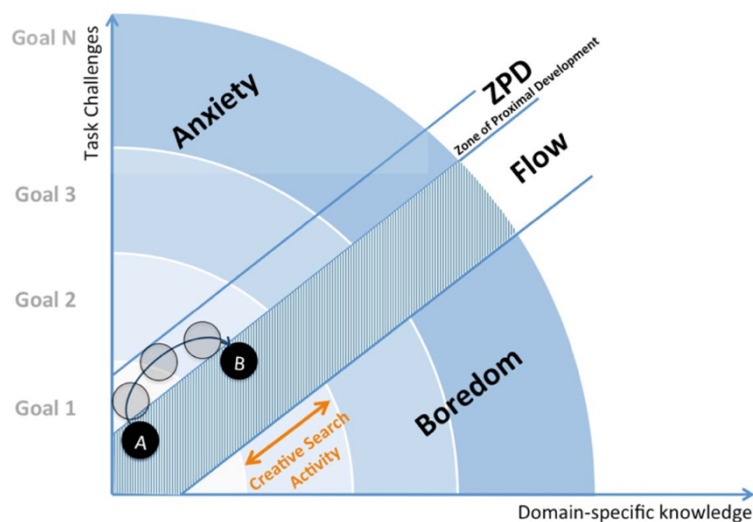
Figure 31: Flow and ZPD combined according to COLLAGE project results

It is apparent that, in terms of game design, for an optimal experience, as flow is referred to, it is not enough to have a perfect balance between skills and efforts. There is a need to inject external stimuli (for instance, *challenges* and *resources to be discovered and unlocked*) that constantly push the player out of their comfort zone without exceeding their own capabilities, as otherwise unattainable *achievements* can only generate stress rather than excitement. Particular care must be taken in the graduation of challenges and the choice of resources to be unlocked.

Complexity increases when *teams* are involved, but assigning general and individual objectives allows one to maintain and / or improve team cohesion and individual engagement: everybody has to have the chance to contribute.

Carol Dweck's book "Mindset: The New Psychology of Success" has popularised the concept of *Growth Mindset* (Dweck, 2016) and contributed to making the tenets of positive psychology more concrete.

Dweck investigated people's attitudes along different criteria and concluded that there are two main postures that affect motivation and, consequently, behaviour and achievements. These postures, the Fixed Mindset and the Growth Mindset, can be adopted by the same person at different times, so it is unlikely that an individual will fall solely on one side or the other of the spectrum.

A person who adopts a Fixed Mindset behaves in a way that reflects the belief that intelligence in a human being is static. On the contrary, someone who adopts a Growth Mindset behaves in a way that presumes intelligence in a human being can be developed. The tendency towards one of these two attitudes makes certain behaviours predictable.

For instance, challenges are either avoided by those with fixed mindsets or embraced by those with growth mindsets. The same occurs with obstacles; a fixed mindset tries to skip them or gives up easily, whilst a growth mindset tends to face them and tries to overcome them. Consequently, efforts are seen as fruitless and even a waste of time by fixed mindsets, whilst growth mindsets consider them a necessary path towards mastery.

For the same reason, criticisms are not welcomed by fixed mindsets, who tend to ignore them, whilst for a growth mindset, any feedback is a source of learning. Similarly, other people's success is perceived as a personal threat for a fixed mindset, whilst someone with a growth mindset would see it as a source of lessons learned and inspiration.

Overall, for fixed mindsets, the tendency is to try to appear intelligent and to achieve less than their full potential, whilst growth mindsets are led by the desire to learn and tend to reach incrementally higher levels of achievement.

In terms of game design, this means that players can be invited to learn better in a playful way by:

- Praising efforts and process over talent (think about designing incrementally difficult *challenges*, series of *achievements*, *quests*, *unlocking resources*, *collaborating*, etc.)
- Praising progress (*performance graphs*, *levels*, etc.)
- Implementing the challenge of "Not yet" in the design
- Providing *feedback* loops (i.e. the engagement loops seen in the section on SDT) where players directly experience how their effort, strategies, and willingness to learn from mistakes allows them to grow their abilities over *time*. This reinforces the core principles of a growth mindset..

How Growth Mindset and Self-Determination Theory are related 🔍⊕

Growth mindset statements are significant in the context of Self-Determination Theory (SDT) because they align with the theory's emphasis on the development of intrinsic motivation and the fulfillment of basic psychological needs: autonomy, competence, and relatedness.

1. Autonomy: Growth mindset statements encourage individuals to take ownership of their learning and development. By shifting from a fixed mindset ("I can't do this") to a growth mindset ("I am going to train my brain"), individuals are exercising their autonomy to choose how they approach challenges and setbacks.

2. Competence (Mastery): Growth mindset statements foster the belief that abilities and intelligence can be developed through effort and perseverance. This belief directly supports the SDT pillar of competence, as it encourages individuals to engage in tasks that improve their skills and mastery over time ("I can always improve so I'll keep trying").

3. Relatedness (Purpose): When individuals adopt a growth mindset, they are more likely to seek out feedback and learn from others ("I will learn from them"), which can strengthen social connections and fulfill the need for relatedness. This sense of connection and learning from others contributes to a sense of purpose and belonging.

Overall, growth mindset statements reinforce the core tenets of SDT by promoting a sense of volition, a drive for mastery, and a connection with others, all of which are essential for fostering intrinsic motivation and psychological well-being.

Minds on fire! #2

Please answer to the following questions. Tick all correct answers.

(Please note: if you are not alone, answer the questions as a team by applying the 1-2-4-ALL facilitation technique to all of them and try to reach a consensual feedback on the answers to provide. Then verify the results.)

- Question 1: How does Cam Adair's discussion on video game addiction relate to the concept of autonomy in Self-Determination Theory?

Proposed Answers	Correct Answers
1. Adair emphasizes the importance of personal choice in overcoming addiction.	Correct. This aligns with the concept of autonomy in Self-Determination Theory, which suggests that feeling in control of one's actions is crucial for motivation
2. He suggests that external rewards can motivate change in gaming behaviour.	Incorrect. Self-Determination Theory posits that intrinsic motivation, rather than external rewards, is more effective for long-term behaviour change
3. Adair highlights the role of internal motivation in quitting gaming.	Correct. This is consistent with the intrinsic motivation aspect of Self-Determination Theory, where engaging in an activity for its own sake is emphasized
4. All of them	Incorrect. Not all the options correctly relate to the concept of autonomy in Self-Determination Theory, only the first one (as it aligns with the concept of autonomy in Self-Determination Theory, which suggests that feeling in control of one's actions is crucial for motivation), and the third one (as it is consistent with the intrinsic motivation aspect of Self-

	Determination Theory, where engaging in an activity for its own sake is emphasized)
5. None of them	Incorrect. Some of the options do relate to the concept of autonomy in Self-Determination Theory, , only the first one (as it aligns with the concept of autonomy in Self-Determination Theory, which suggests that feeling in control of one's actions is crucial for motivation), and the third one (as it is consistent with the intrinsic motivation aspect of Self-Determination Theory, where engaging in an activity for its own sake is emphasized)

● Question 2: In what way does the Growth Mindset theory apply to overcoming gaming disorder, as discussed by Cam Adair?

Proposed Answers	Correct Answers
1. Believing that gaming habits can be changed through effort and strategies.	Correct. This reflects the Growth Mindset theory, which posits that abilities and behaviours can be developed through dedication and hard work
2. Viewing challenges in quitting gaming as opportunities for growth.	Correct. Growth Mindset encourages embracing challenges as ways to improve and learn
3. The idea that gaming disorder is a fixed trait that cannot be changed.	Incorrect. Growth Mindset theory argues against the notion of fixed traits and emphasizes the potential for change and development
4. All of them	Not all the options correctly relate to Growth Mindset theory. In fact, only the first and the second one as abilities and behaviours can be developed through dedication and hard work, on the one

	hand, and because Growth Mindset encourages embracing challenges as ways to improve and learn, on the other hand. On the contrary, Growth Mindset theory argues against the notion of fixed traits, as suggested by the third option, and it emphasizes the potential for change and development.
5. None of them	Incorrect. Some of the options do relate to Growth Mindset theory. In fact, the first and the second one do as abilities and behaviours can be developed through dedication and hard work, on the one hand, and because Growth Mindset encourages embracing challenges as ways to improve and learn, on the other hand. On the contrary, Growth Mindset theory argues against the notion of fixed traits, as suggested by the third option, and it emphasizes the potential for change and development.

- Question 3: How does motivation, as discussed by Cam Adair, align with the components of Self-Determination Theory (competence, autonomy, and relatedness)?

Proposed Answers	Correct Answers
1. Adair's narrative supports the idea of developing competence through learning new skills outside gaming.	Adair's narrative supports the idea of developing competence through learning new skills outside gaming: Correct. This aligns with the competence aspect of Self-Determination Theory, which involves feeling effective in one's activities

2. He discusses the importance of autonomy in making the decision to quit gaming.	He discusses the importance of autonomy in making the decision to quit gaming: Correct. This reflects the autonomy component of Self-Determination Theory, highlighting the importance of self-direction in motivation
3. Adair emphasizes rebuilding relationships as part of recovery from gaming disorder.	Adair emphasizes rebuilding relationships as part of recovery from gaming disorder: Correct. This relates to the relatedness aspect of Self-Determination Theory, which focuses on the need for connection and belonging
4. All of them	All of them: Correct.
5. None of them	None of them: Incorrect.

Perception

Human perception has several key characteristics and limitations that one must bear in mind. Fundamentally, perception is a construct of the mind rather than a direct window into reality as it truly exists. We do not simply perceive the world objectively; instead, our minds build subjective mental representations influenced by our cognition. Consequently, perception is inherently subjective - different individuals might perceive the same sensory input differently. Our personal prior knowledge, experiences, expectations, goals, and the current environmental context all shape how we perceive things. Moreover, our perception is susceptible to perceptual illusions that distort our mental representations according to universal principles that affect everyone. In essence, we filter reality through the lenses of our minds, leading to subjective interpretations rather than perfectly accurate reflections of the objective world (Hodent, C. 2018)

Memory

While our perception itself is a subjective mental construct, our memory of perceived events and information can also become distorted, as memory is a reconstructive process rather than a perfect recording. Human memory has several notable characteristics and limitations to consider. It is a system that encodes, stores, and later retrieves information, consisting of sensory memory (part of perception), working memory (heavily reliant on attention to encode and process retrieved information), and long-term memory for storage. The depth of processing that occurs in working memory during the encoding phase impacts the quality of retention in long-term memory - the deeper the processing, the better the retention. Long-term memory itself comprises explicit (declarative) memory for facts and implicit (procedural) memory for skills and procedures. The forgetting curve illustrates how memory retention declines over time, with this decline being more severe when the initially learned content lacks meaning and only shallow processing occurs. Moreover, even when we do successfully retrieve memories, they can be distorted and biased reconstructions rather than perfect reflections of reality (Hodent, C. 2018).

Attention

In essence, attention acts as a gatekeeper, determining what information enters our consciousness and gets processed deeply enough to form long-term memories. Its limited capacity necessitates judicious allocation to avoid overtaxing cognitive resources, which can impair learning and performance. In Celia Hodent's own words:

- "Attention can be focused (selective attention) or divided (multitasking).
- Selective attention works like a spotlight: We direct attentional resources on a particular element while the rest is filtered out.
- A side effect of selective attention is the phenomenon of "inattentional blindness" whereby unattended elements are not consciously perceived, even unexpected or surprising ones.
- Attentional resources are extremely scarce.
- Cognitive load theory suggests that the more attentional resources are required to accomplish a task, the more distraction will have disruptive effects and the more likely learning will be hindered.
- An unfamiliar task (that needs to be learned) requires much more attentional resources than a familiar one" (Hodent, C. 2018).

Emotions

While humans constantly discuss and seek out specific emotions through narratives like books, movies, and games, our scientific understanding of the underlying mechanisms of emotion remains precarious. Oversimplified explanations about neurotransmitters like oxytocin (the "love hormone") or dopamine ("pleasure chemical") being solely responsible for complex emotional states are often exaggerated compared to current neuroscientific knowledge.

From what we understand about emotions, a few key points emerge: Emotion serves to motivate behaviour and keep us alive. It can enhance cognition by raising awareness, sharpening focus, and prompting swift reactions, especially to danger. However, emotion can also impair reasoning by biasing our perception, cognition, or behaviour.

Cognition and emotion interact bi-directionally: our thoughts can influence emotions, while emotions can impair cognitive processes. Specific factors like presentation framing, expectations, loss aversion, and perceived unfairness demonstrate how emotions can bias our situational assessments and decision-making.

Moreover, emotional arousal itself can be misattributed - we may incorrectly identify the source of the emotion we feel. Importantly, emotional arousal extends beyond just the triggering element to encompass the entire situation.

In essence, while emotion is deeply intertwined with human experience, its precise cognitive and neurological underpinnings remain an area of ongoing investigation within neuroscience and psychology (Hodent, C. 2018).

Behavioural Flexibility

Our behaviour and decision-making processes are influenced by various concurrent factors. These include how information received from the environment (the context) is processed through emotions, the level of attention and motivation we give to it, as well as the behavioural inhibition triggered, and the memory of past experiences (Chabout, 2013).

Working Memory & Decision-making

If we look closely at how the decision-making process occurs, we see that different sources of information (sensory, emotional, and motivational) are integrated and evaluated alongside and in interaction with the development of a plan to achieve the desired outcome, as well as the assessment of the effort involved (Wallis, 2007).

The brain as a Bayesian probabilistic machine

We can view our brain as a Bayesian probabilistic machine that chooses the most likely interpretation of what is perceived instant by instant. Therefore, the brain is

not conceived as a strictly synchronous world-representing machine but as a sequentially activating machine, an inductive machine taking advantage of current and/or memorized sensory data to anticipate or predict the sensory data that will follow (Ernst & Bültoff, 2004).

Action and Perception: Minimising the Free Energy

The cognitive brain minimises free energy, or, if you prefer, the error and uncertainty in the prediction of causes, by adjusting the hypotheses on the causes of the set of sensations and by sampling this sensory space as well as possible. It allows for a more detailed description of this sensory system by minimising ambiguities about its causes. In short, the brain tries to reduce uncertainty. It tries to preserve coherence. It likes shortcuts and predictability, as changing routine requires effort (Friston, 2003, 2006, 2010).

The Heuristic and the Algorithmic Systems

This fundamental research has brought some relevant conclusions. As Nobel Prize winner Daniel Kahneman explained in his seminal book "Thinking, Fast and Slow" (Kahneman, 2012), many cognitive biases that affect our decision-making processes are due to the fact that we are not aware of our way of thinking. Basically, our brain, in order to maximise efficiency, tends to reduce, even minimise, efforts. That's why our standard operating way of doing things is to follow decision-making paths that are already deeply wired in our brain: it is our automatic pilot that drives, it relies on our instinct, our gut feelings, and is known as the Heuristic system. Extremely useful for existential questions like fight or flight! But for solving more complex problems, for facing uncertainty and ambiguous situations, a higher order of thinking is required. What Kahneman called the Algorithmic system performs rational thinking and analysis. It is slower than the Heuristic system, and it consumes much more energy. It is activated when you think deeply, and it might allow you to recognise or at least be aware of the cognitive biases you are affected by.

Cognitive Biases

Among the most well-known cognitive biases that result from this innate attitude of preserving energy are Conformity Bias and Groupthink.

According to Randi, we are prone to Conformity Bias whenever we tend to believe only what we already recognise as in line with our beliefs and mental models (Randi, J. 1991).

Groupthink, instead, plays a role when we are part of a team. Whenever our desire to belong to a group and to ensure its cohesion at all costs overrides independent judgment and makes a team member a blunt follower of majority decisions, we are likely in a situation of groupthink. For instance, looking at a picture with Napoleon riding a white horse, you know that the white horse of Napoleon is obviously white, but if, for whatever reason, all other team members agree to say that it is black, you agree with all others without posing any question. Of course, if you do not want to create clones but want to stimulate critical thinking, think to design activities in such a way as to avoid or at least mitigate these biases.

Other relevant cognitive biases are The Anchoring and the Curse of knowledge. The former refers to our tendency to use previous information to make a decision about a new piece of information by comparing it to another. The latter to the fact that it is hard to ignore our understanding of something and precisely forecast how someone who is unfamiliar with it will view and interpret it (Hodent, C. 2018).

Recommendations for game design

- It is paramount to design carefully the *challenges* learners have to address during the experience: is there a *variety* of outcomes? Is it suitable to admit some *ambiguity* in the results? Maybe the way to get to the only right solution to a problem you target might foresee different processes to get it.
- Our brain is a *coherent* machine and dislikes having well-wired and accepted behaviours and mental models challenged by new ones. To think critically, you have to raise your level of attention and fight the easy

solutions your memory brings up from past experiences. Fact-checking and a scientific perspective help activate the inhibitory and algorithmic systems as needed. Think of the 5W 1H questions: Why? What? Who? Where? When? How?

- Be particularly vigilant with collaborative activities in order to prevent groupthink: each learner needs individual objectives complementary to their teammates' ones.
- *Balance the Cognitive Load*, that is, give information when it is important and when it is needed. Consider the trade-off between the information load to be delivered and its visualisation / fruition time.
- *Distributed Practice*: content spread over time and repeated if necessary (e.g., in Change Management). In other words, design the resources to deliver and when to deliver them wisely.
- *Prevent Cognitive Dissonance / Incoherence*: in other words, never deliver contradictory information because it is very harmful to the level of attention.
- *Multimodality – Cross-modality*: do not use only visual interaction but also other sensory modes, such as sound, but also touch (for instance, with a touchscreen). Mix and combine the different modes of sensory interaction.
- Include tutorials into the game design rather than keeping them separated from the game.
- And do not forget the *Mirror system*! Design also actions that move the body, if possible, as it helps to reduce cognitive load.

Learning

Playing is the first form of learning, and as Celia Hodent pointed out "Play allows the brain to experiment with new and usually more complex situations than the ones encountered in real life. […] And during infancy and childhood, play is even more critical because the brain is developing and is much more malleable than later in life (see Pellegrini et al. 2007, for a review)" (Hodent, C. 2018) and allows children to assimilate reality (Piaget, J., & Inhelder, B. 1969). But playing and

learning are relevant all life long: "When we stop playing, we start dying" (Brown and Vaughan 2009).

Dehaene's four pillars of Learning

The works of Stanislas Dehaene brought to the definition of the four pillars of learning according to a neuroscientific perspective (Dehaene, 2018):

- *Attention*: so, what is the hooking purpose, objective you prepare for the learners?
- *Active engagement / involvement*: for instance, which challenges are more appropriate? Are learners able to play autonomously? Can they deploy their mastery and improve their competencies and knowledge?
- *Feedback on mistakes / failures*: in order to trigger the engagement loops,
- *Consolidation*: think of distributed practice we talked about before.

Kolb's Experiential Learning

David Kolb laid the foundations of a holistic model of learning in 1984 with his seminal book "Experiential Learning: Experience as the Source of Learning and Development" (Kolb, 1984).

Kolb developed this model from previous research, particularly the models formulated by Lewin, Dewey, and Piaget. What is peculiar about this research environment is that learning is seen as a process ("a continuous process grounded in experience," in his words), and not an outcome to be transferred.

In the following picture, an adaptation of Kolb's original drawing, you can see how this model works. It resembles a spiral, and reading it clockwise from the top, we see that any learning process starts with a learning experience (CONCRETE EXPERIENCE – CE). Moving clockwise, after the learning experience, a REFLECTIVE OBSERVATION (RO) phase is triggered, where the learner generates and examines all facets of the experience.
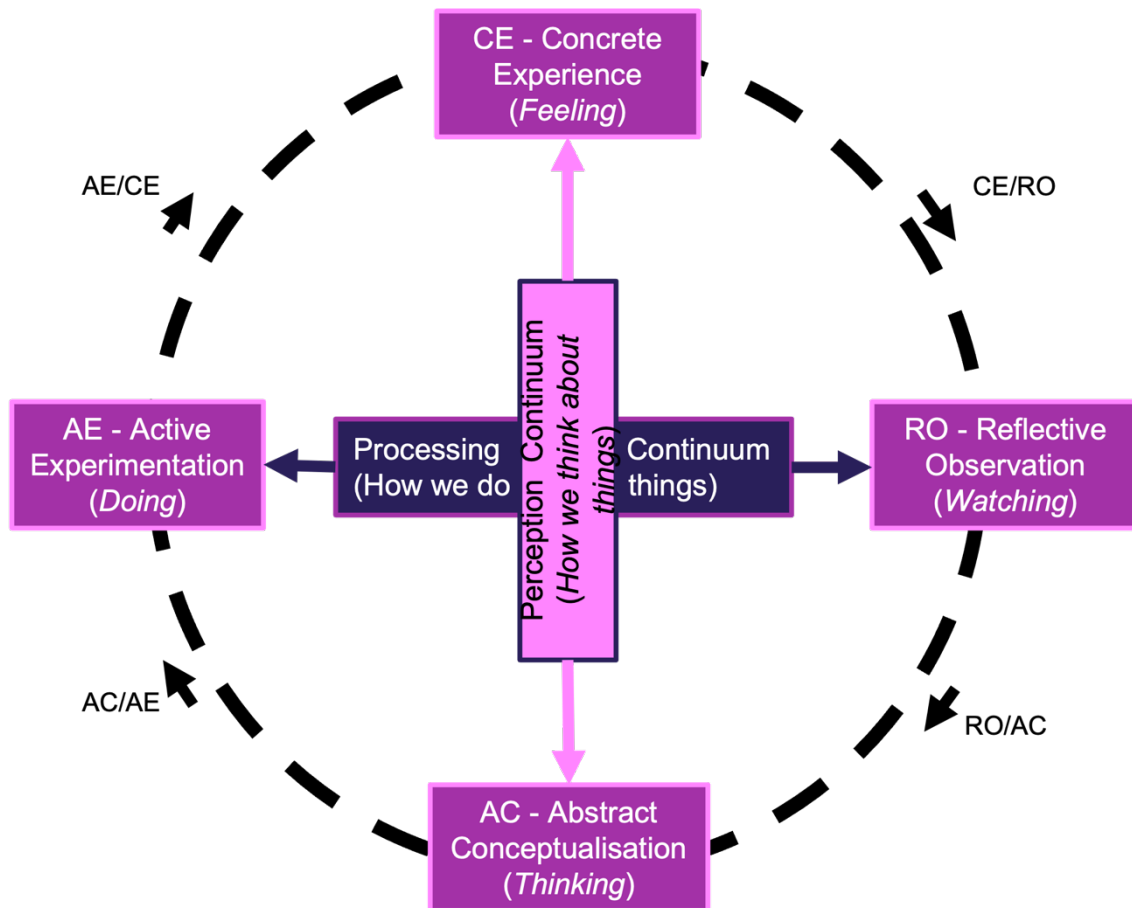
Figure 32: Kolb's Experiential Learning Model (Source: inspired by Kolb & Kolb, 2009)

In the next phase, the learner "assimilates" the experience into their own mental frameworks, adapting it to them and developing new ones. If something new is detected and accepted, it's the phase of ABSTRACT CONCEPTUALISATION (AC). Once the (new) mental frameworks are set, the learning needs to be consolidated through practice: an ACTIVE EXPERIMENTATION (AE) phase is then called for.

Finally, the experimental practice leads to a new CONCRETE EXPERIENCE (CE), and the cycle loop is closed. Indeed, we talked about a "spiral" while introducing this learning model. The learner's new experience is different from the original one that started the overall process, as the elements introduced in the Reflective Observation, as well as the likely modified mental models in AC and the practical settings of the experiment where the new knowledge has been deployed, provide a different context compared to the first round.

In terms of game design, this means that players can be invited to learn better in a playful way by:

- Making them live and experience (CE), for instance, by designing a *challenge* for them.
- Followed by a reflection exercise on such experience (RO), for instance, by designing an activity like note-taking about the experience and by *unlocking* and *collecting* related *resources*.
- That helps them assimilate / integrate the observations, *feelings*, and concepts into their mental models (AC).
- And, most importantly, an invitation to put the new learning into practice by designing an ad hoc activity (AE), like preparing the settings for a new challenge to be chosen by the players themselves.

Connectivism

As explained by the editor's note to George Siemens' famous paper "Connectivism: A Learning Theory for the Digital Age", "This is a milestone article that deserves careful study. Connectivism should not be confused with constructivism. George Siemens advances a theory of learning that is consistent with the needs of the twenty-first century. His theory takes into account trends in learning, the use of technology and networks, and the diminishing half-life of knowledge. It combines relevant elements of many learning theories, social structures, and technology to create a powerful theoretical construct for learning in the digital age." (Siemens, G., 2005)

These are the 8 principles of Connectivism:

1) Learning and knowledge rests in diversity of opinions.

2) Learning is a process of connecting specialized nodes or information sources.

3) Learning may reside in non-human appliances.

4) Capacity to know more is more critical than what is currently known.

5) Nurturing and maintaining connections is needed to facilitate continual learning.

6) Ability to see connections between fields, ideas, and concepts is a core skill.

7) Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.

8) Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

So, what are the actual implications in terms of game design for a learning experience?

- If the first principle about diversity reinforces the alert against cognitive biases such as conformity bias and groupthink, the second, third, fifth and sixth principles highlight the key role played by networks in the learning process. It is within the networks that learning happens, through connecting knowledge sources (the nodes) which can even be non-human ones. Therefore, the health of the network, which means feeding the nodes and reinforcing the connections between them, is key for learning to happen. *Relationships* and *social graphs* along with *collaborative* activities will likely be included for game design.

- The fourth and seventh principles are key to understanding the very nature of a network, in particular, the "brokerage" / connecting capability of the "weak ties", the ones with which one does not have much to share but that potentially open new worlds of knowledge, relations and therefore learning to tap into. A game at the community level brings different *teams* to play together towards more ambitious *goals* than isolated teams or individuals can aim for. New and unexpected *resources are unlocked*.

- The eighth principle is the essence of the close relationship between learning and decision-making. Neurosciences have proved this close relationship, but Siemens' merit is to have integrated the VUCA (volatile, uncertain, complex, ambiguous) context of the new century, where everyday assumptions are constantly challenged: what was true yesterday

might not be true anymore today as the context has changed. Therefore, yesterday's decisions might not be valid anymore. Decision-making is a learning process, a continuous one.

- In terms of game design, add some *chance* to the picture and change the *boundary conditions*. Foresee a *branched narrative* with conditional paths and Easter eggs! Think over the learning experiences you design: how much do they embrace ambiguity and uncertainty? Is it always good to have only the right answer? Well, of course, it depends on the topic and the learning objectives. But think that ambiguity and uncertainty foster the development of critical thinking and resilience capabilities.

User Experience & Games in a Nutshell

User Experience (UX) practitioners provide tools and processes to empower developers, grounded in human-computer interaction principles and the scientific method. Celia Hodent (Hodent, C. 2018) states that delivering a compelling game experience requires addressing two key components: *usability* (ease of use) and *engage-ability* (ability to engage players). Whilst usability focuses on reducing friction and ensuring the game functions as intended, while engage-ability aims to foster motivation, emotional investment and an immersive state of flow for players. Both components are crucial for delivering a seamless, engaging user experience in games.

Game usability has seven pillars:

- clear signs / *feedback* to guide players;
- *clarity* to avoid confusion; form following function for intuitive design;
- *consistency* across controls, interfaces and rules;
- *minimising cognitive / physical workload* for non-core tasks;
- *preventing errors* where possible while *allowing recovery*; and
- *flexibility* through *customisation* options for *accessibility*.

Engage-ability centres on three pillars:

- *motivation* by satisfying needs for *competence*, *autonomy*, *relatedness* and providing *meaningful rewards*;
- evoking *emotion* through polished game feel, sense of presence and enabling discovery; and
- facilitating an optimal *game flow experience* through an appropriate difficulty curve, pacing and *learning by doing*.

Let's do it together!

Understanding the mechanisms of engagement

1. Bring in a game developer or researcher to share the psychology behind compulsive gaming design.
2. Have an open Q&A about ethical game design.

Tips

o Select a game

  o Analyse the First Time User Experience (FTUE) of the player, that is what happens when the player start playing

  o Analyse the interface

  o Analyse the interaction

  o Analyse the Feedback mechanism

  o Is the Narrative explicit or implicit?

  o …

Hands on game design!

1. Host a game design workshop where participants learn how games are designed to be engaging and motivating.

2. Discuss game mechanics, dynamics, and components that keep players hooked.

3. Then have them design a non-digital game or modify an existing game's rules to be less addictive.

Tips

o   Follow this model by replacing and adapting points 1 & 2
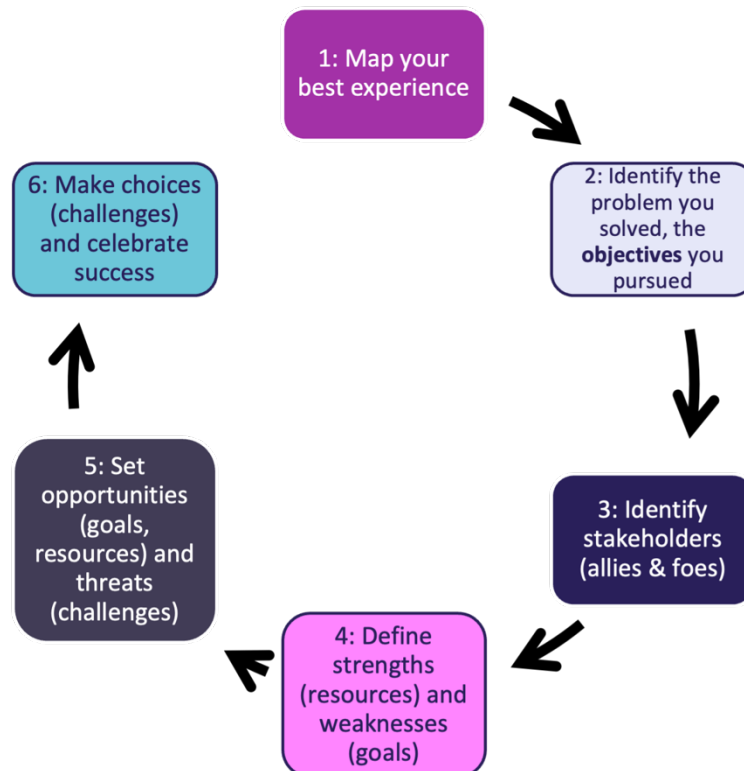
Figure 33: Build on a Game

Further readings & sources

In **bold** the readings we warmly suggest you to look at.

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Recommended videos & films

- A Sci-Fi Short Film: "Sight" (07'52") by Sight Systems | TheCGBros, available at: https://youtu.be/lK_cdkpazjI?si=XMuXLVf8YWnZpxcZ
- RSA ANIMATE: Drive: The surprising truth about what motivates us. Available at: https://www.youtube.com/watch?v=u6XAPnuFjJc
- TED Talks: Carol Dweck on the challenge of the Not Yet. Available at https://www.youtube.com/embed/_X0mgOOSpLU
- The Game (1997) available on some film streaming platforms.

Learning Objectives

Skills
- Develop the ability to recognise signs and symptoms of gaming disorder in young people.
- Acquire skills in assessing healthy and unhealthy gaming behaviours in youth.
- Learn effective techniques for managing resistance or denial.

Knowledges
- Understand the definition and the criteria for gaming disorders as outlined by the recognised authorities (e.g., DSM-5, WHO).
- Learn about the potential negative consequences of excessive gaming on physical health, mental health, and social well-being.

Attitudes
- Foster empathy and understanding towards individuals struggling with gaming disorders.
- Cultivate a non-judgmental attitude towards youth who may exhibit symptoms of gaming disorder.
- Develop an awareness of the importance of early intervention and prevention strategies for gaming disorders.

Behaviours
- Demonstrate the ability to identify unhealthy gaming behaviours in youth through case studies and practical exercises.
- Utilise assessment techniques and tools to evaluate the severity of gaming-related problems in young people.
- Engage in open and supportive conversations with youth and their families about gaming habits and potential concerns.
- Advocate for resources and support services for youth with gaming disorders within youth organisations.

Learning Activities and Flow

1. Understanding the signs of gaming disorder in youth (10 mins)

2. Assessing healthy versus unhealthy gaming behaviours in youth (10 mins)

3. Use and interpretation of Self-Evaluation Questionnaires for young people (15 mins)

4. Role-playing activity: practising identification techniques (30 mins)

5. The importance of resilience and resilience development in youth to counter Gaming Disorders (10 mins)

6. Techniques for managing resistance or denial (15 mins)

Needed materials

- PowerPoint Presentation for session 4
- Case scenarios for the role-playing activity
- Paper
- Pens and pencils
- Devices (mobile phone/computer) with access to the internet

Session 1: Understanding the signs of gaming disorder in youth

Gaming disorder, as described in the 11th Revision of the International Classification of Diseases (ICD-11), refers to repetitive gaming behaviour characterised by a lack of control over gaming activities (digital or video games). This disorder is characterised by a growing emphasis on gaming, surpassing other activities to the point where gaming becomes the primary focus over personal interests and daily responsibilities. Also, despite experiencing negative consequences, individuals affected by this disorder continue to engage in gaming and may even intensify their gaming habits (World Health Organisation, 2020).

The DSM-5 defines Internet Gaming Disorder (IGD) using 9 criteria that are presented below:

TABLE 1	
Diagnostic criteria of the Internet gaming disorder (DSM-5, 2015)*	
Criterion 1	Excessive preoccupation (e. g., mental preoccupation with playing computer games)
Criterion 2	Withdrawal symptom (e. g., irritability, anxiety, or sadness) when not playing
Criterion 3	Development of tolerance (e. g. need for increasingly longer periods of play)
Criterion 4	Unsuccessful attempts to control playing
Criterion 5	Loss of interest in previous hobbies and leisure activities (as a result of playing)
Criterion 6	Continuation of excessive playing, despite insight into the psychosocial consequences
Criterion 7	Deceiving family members, therapists, and others regarding the scope of playing
Criterion 8	Use of games to escape or weaken a negative mood (e. g., feelings of helplessness, guilt, or anxiety)
Criterion 9	Risks or loses an important relationship, job, or training/career opportunity because of playing

* For diagnostic purposes, at least 5 of 9 criteria must have been fulfilled in the last 12 months

Table 1: retrieved from Wartberg et al. (2017)

Based on DSM-5 standards, a diagnosis of IGD requires meeting at least five out of nine criteria within the past 12 months (Wartberg et al., 2017): "(1) preoccupation with online/offline gaming (i.e., preoccupation); (2) experience of unpleasant symptoms when gaming is taken away (i.e., withdrawal); (3) the need to spend increasing amounts of time engaged in games (i.e., tolerance); (4) unsuccessful attempts to control participation in games (i.e., loss of control); (5) loss of interest in previous hobbies and entertainment as a result of, and with the exception of games (i.e., give up other activities); (6) continued excessive use of games despite knowledge of psychosocial problems (i.e., continuation); (7)

deceiving family members, therapists, or others regarding the amount of gaming (i.e., deception); (8) use of games to escape or relieve negative moods (i.e., escape); and (9) jeopardising or losing a significant relationship, job, or education or career opportunity because of participation in games (i.e., negative consequences)" (Luo et al., 2022).

Recognising these signs is essential in identifying and addressing gaming disorders and their impact on individuals' lives but unlike addictions to licit and/or illicit substances, gaming addicts don't show symptoms of physical or moral degradation, which makes early diagnosis difficult.

Session 2: Assessing healthy versus unhealthy gaming behaviours in youth

In an era dominated by digital technology, gaming has emerged as a popular form of entertainment and engagement, especially among the youth. While gaming offers many interactive experiences and social interactions, it also challenges finding a delicate equilibrium between virtual and real-world activities. Playing video games can be a stimulating and pleasurable activity, however, subjects with various interpersonal and intrapersonal risk factors can be lured into excessive involvement in video games as a refuge from their problems.

Balancing gaming with other commitments is not just about time management but about cultivating a holistic lifestyle encompassing academic, physical, social, and emotional well-being.

Adair (2022) advocates that healthy (or positive) gaming is when people play video games as one of many activities in their lives. They spend time with family, go to work or school, have real-world friends as well as online friends, and enjoy other interests besides gaming. When gaming is a positive habit, it is a regular part of life – people make time to play games, but they still manage to get school or work and other responsibilities done. There are several notable benefits to playing video games in moderation.

Gaming follows a predictable pattern we call hook, habit and harm. A gamer likes playing video games, they are hooked by the fun, stimulation, challenges, sense of conquest, skill-building, friendships and social aspect of playing with others. Modern video games are specifically designed to hook a young person's brain to want more and more of it and that is when harm can occur. (Adair, 2022)

According to Adair (2022), some signs that the individual has a healthy video game use are:

- is open and honest about the amount of time they spend playing video games.
- has full control of their video game activities.

- is able to stop or reduce the amount they play if it starts to cause problems.
- does not lose sleep to continue gaming.
- stops playing to eat, shower and do other daily tasks.
- is able to focus on their job or education.
- has time to spend with family and friends.
- has other hobbies and interests.
- can fully immerse themselves in a game and then easily return to the offline world.
- is not overly bothered if their video game is interrupted.
- will not spend money they can't afford on video games.

Adair (2022), considers that for some people, their gaming habit begins to create harm in their lives. It starts to become a greater priority, cutting into time spent doing other activities. It can negatively affect their mental and physical health, family and relationships. They may be eating poorly, not sleeping well, not exercising regularly or getting outside. Other harms include anxiety, low moods, irritability and depression. Socially, some gamers become more isolated and anxious and have difficulty making friends and interacting with others in the physical world.

Adair (2022) presents some common signs that playing video games has turned into an **unhealthy habit**. A gamer may:

- Lose interest in sports, in friends, in school and/or work and/or hobbies
- Make gaming a priority above everything else and talk only about video games
- Lack of motivation for anything but gaming
- Be moody, irritable, depressed or anxious
- Show no interest or joy in anything
- Withdraw from family and friends
- Develop poor eating, sleeping, and hygiene habits – may stop brushing teeth and/or showering and/or stay up all night to game
- Consume a poor diet
- Use excessive caffeine and/or other stimulants to game

- Have physical aches and pains such as headaches and/or back strain
- Skip classes or work, or drop out of school or work
- Have conflicts with family members about time spent gaming and/or how it is affecting them.

Sometimes, a gamer may have tried to cut down but be unable to stop or reduce their gaming. They may be lying about their gaming and/or hiding when or how much they game. Some wake up to play through the night, drink high-caffeine energy drinks or other stimulants and suffer the knock-on effects of sleeplessness throughout the day (Adair, 2022).

Adair (2022) presents some other **signs** of **unhealthy video game use** by individuals:

- The individual needs to spend an increasing amount of time playing video games to get the same level of pleasure.
- The individual is constantly thinking about their next gaming session.
- The individual uses gaming to escape from everyday life.
- The individual gets angry or annoyed if their video game is interrupted.
- The individual will get into debt to buy the latest video games and/or through in-game spending (e.g. through the use of "loot boxes").

Session 3: Use and interpretation of Self-Evaluation Questionnaires for young people

We provide some assessment tools to serve as guidance and increase awareness among young people and youth organisations dealing with gaming disorders. It is important to note that these tools should not be employed for medical purposes, as only experts on gaming disorders and mental health can provide an accurate diagnosis.

Next, we present 3 questionnaire options, which were presented in our MINDSET Handbook for Youth. All 3 are available online.

The first assessment tool we present (available here: https://forms.gle/A2ct4FGi2dp7PxkXA) uses a Likert Scale method for measurement. The scale consists of five response options ranging from "Never" to "Always." This allows individuals to express the frequency and severity of situations they have encountered due to their gaming activity. The possible answers to select from are:

    1 – Never
    2 – Rarely
    3 – Sometimes
    4 – Often
    5 – Always

Questionnaire:

1. In the last 12 months, how often have you spent an hour or more thinking about when you can play a game?

2. In the last year, did you risk losing important relationships, educational opportunities, or job chances because of gaming?

3. In the past year, did you feel sad, hopeless, nervous, or anxious?

4. In the past year, did you feel that you lost interest in all other hobbies or activities besides gaming?

5. In the past year, have you ever attempted to stop gaming due to its interference with your daily life?

6. In the last year, did you consider seeking professional help for your gaming habits?

7. In the past year, have you ever concealed the amount of time you spent playing games from others?

8. How often do you use computer games to avoid feeling bad?

9. Do you often regret spending too much time playing video games?

10. In the past year, have you had trouble sticking to your self-imposed limits on gaming and ended up playing longer or more frequently than you intended?

It is important to note that this self-assessment tool cannot accurately diagnose potential young people who may be struggling with gaming disorder and should not be used in such a way. However, it can be used to increase general awareness around the issue and may be helpful for youth organisations to be used as a guiding tool and be used by young people as a self-reflection tool.

It is crucial to work closely with mental health and gaming disorder experts to achieve the best possible outcome and accurately diagnose young people's behaviours regarding gaming.

There are also available online, free assessment tools for video game addiction that are directly related to gamers' behaviour. One can be found on the online community Game Quitters (https://gamequitters.com/video-game-addiction-test-for-gamers/) and focuses on nine questions with a Yes/No format:

1. Firstly, do you spend a lot of time thinking about games even when you're not playing, or planning when you can play next?

2. Do you feel restless, irritable, moody, angry, anxious, bored, or sad when you try to cut down or stop gaming, or when you are unable to play?

3. And do you feel the need to play for increasing amounts of time, play more exciting games, or use more powerful equipment to get the same amount of excitement you used to get?

4. Have you felt you should play less, but are unable to cut back on the amount of time you spend playing games?

5. And have you lost interest—or reduced participation—in other recreational activities due to gaming?

6. Have you continued to play a game even though you knew about the negative consequences, such as not getting enough sleep, being late to school/work, spending too much money, having arguments with others, or neglecting important duties?

7. Have you been deceptive, or lied to family, friends, or others about how much you game? Or tried to keep your family or friends from knowing how much you game?

8. Do you game to escape from or forget about personal problems, or to relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression?

9. And finally, have you risked or lost significant relationships, jobs, educational, or career opportunities because of gaming?

After completing the quiz, Gaming Quitter sends a personalised email based on the responses.

Additionally, an online community called Gaming Addicts Anonymous provides a video game addiction test (https://www.gamingaddictsanonymous.org/self-test-for-video-gaming-addiction/) to act as a guide for self-assessment but only as "food for thought". The measurement is based on the number of clicks, and the more clicks an individual makes, the higher the likelihood of gaming addiction:

● Do you set rules or limits with gaming and then break them, playing longer or more frequently than intended?

● Do you lose hours of sleep to gaming?

● Do you skip or neglect self-care (cooking, eating, bathing, cleaning, shopping, exercise, etc) when gaming?

● Do you find yourself gaming whenever you have free time?

- Have you ever sworn off a game, uninstalled it, and later returned to it?
- Do you often re-live gaming experiences or think about future ones?
- Have you ever used sick days or vacation days or skipped work or class just for gaming?
- Has gaming taken the place of any hobbies or sports you used to enjoy?
- Has your contact with in-person friends and family declined significantly since gaming?
- Have you ever taken a break from gaming and binged uncontrollably upon your return?
- Do you feel irritable and restless when away from games for some time?
- Do you forget or neglect appointments, responsibilities or deadlines in work, school, or family when gaming?
- When anxious, upset, or depressed, do you soothe yourself with games or plans to game?
- Have you ever skipped real-world social plans that you were looking forward to in order to game more?
- Have you ever gamed in inappropriate or unsafe situations (in class, at work, while driving)?
- Do you get very angry when someone or something interrupts a game?
- Have you ever felt regret after a gaming binge?
- Do you hide or lie about your gaming?
- Have you ever had a moment when you really wanted to stop gaming to do something else, but just could not?
- Do you feel guilt and shame around your gaming?

Session 4: Role-playing activity: practising identification techniques

According to the Portuguese Psychologists' Association (n.d.), The signs and behaviours of gaming disorder in youth are identified. Some useful recommendations include:

- Salience. Is the behaviour preponderant in the individual's life? (does it take up a lot of mental space or jeopardise basic needs?)
- Mood changes. Does the behaviour alter subjective experiences and affections? Is the use of gaming one of the strategies for dealing with emotional states or seeking feelings of tranquillisation/excitement?
- Tolerance. Does achieving satisfaction involve spending more and more time in the virtual space?
- Deprivation or withdrawal symptoms. Does deprivation of use cause unpleasant sensations (physical or psychological)?
- Conflict. Are there interpersonal difficulties with people close to them (e.g. partner, friends or family), sometimes accompanied by loss of occupational functioning?
- Relapse. Behaviour resurfaces after periods of relative control.

For this activity, please use the Exercises document for Session 4 (Annexes).

Session 5: The importance of resilience and resilience development in youth to counter Gaming Disorders

According to Matos, Gaspar, Ferreira & Equipa Aventura Social (2013), the term **resilience** is relatively recent, having started to be used in the 1980s and suggests that, when faced with the same negative/traumatic life experience, not all individuals show signs of psychological disturbance in the future. With that in mind, research has begun to centre on the potential and resources that individuals find within themselves and in their environment.

In Matos et al. (2013), the authors defend that one of the characteristics that favours the capacity for psychological adjustment in the face of adversity is resilience. A resilient individual is one who is exposed to adverse conditions, but who uses their intra- and interpersonal resources to overcome difficulties and, despite being in a risky environment, manages to succeed in their personal, professional and social lives.

Resilience makes a positive contribution to the quality of life and the well-being of the individual. Resilient children and young people generally share several factors that play a facilitating role in the development of resilience (Matos et al., 2013):

- Individual factors - Tendency to face problems actively, self-efficacy, self-confidence, social and interpersonal skills, a sense of humour, empathy, emotional regulation and good social skills.
- Family factors - Good family support, the transmission of security by the family, good relationship and harmony with parents;
- Environmental factors - Support from significant others, as well as rewarding school experiences.

Resilience can be promoted by a sense of belonging to the family or social group and also through activities involving the use of personal and social competencies, self-efficacy, self-knowledge and self-esteem. It promotes an adjustment between the solutions that the adolescent tries to put into practice and how the solutions respond to the challenges, within the social and political constraints of their community and develops in the interaction between internal resources and the

various environmental contexts in which the child or adolescent is inserted, more specifically in the management of various tensions and challenges. In adolescence, tensions and challenges are particularly emphasised, access to material resources, interpersonal relationships, establishing identity, the need for cohesive identity, power and control, social justice and adherence to cultural values and practices. For example, trust is being called into question in all environments, starting with the family: trusting adults is becoming a real issue because teenagers often don't feel that adults trust them in return. The ability to build a rapport also with adults helps in preventing isolation and in providing examples to follow. Resolving these tensions seems to be fundamental to positive or resilient development. Resilient adolescents successfully navigate through these tensions, according to their strengths and the resources they have available to them, family and community, and also according to their culture, adjusting personal solutions to social and political constraints of their community, while at the same time promote innovation and social transformation Matos et al. (2013)

Cultivating healthy gaming habits is essential to prevent the escalation of gaming behaviour into a disorder. Practising **mindful gaming** involves being conscious of time spent gaming and emotional responses, ensuring that gaming remains a positive and controlled activity (Primack et al., 2012). **Regular breaks** during gameplay mitigate the adverse effects of extended screen time (Gentile et al., 2017). Furthermore, exploring various game genres and types contributes to healthy gaming habits. **Exploring a variety of game genres**, platforms, and styles prevents monotony and excessive fixation on a single game. This diversification fosters cognitive flexibility, adaptability, and the ability to appreciate different forms of entertainment. Just as a diverse diet enhances physical health, a diverse range of gaming experiences nourishes cognitive and emotional well-being.

Teach participants about **time management** – how to set limits on gaming time to ensure a healthy balance between gaming and other activities. Perhaps the most empowering aspect of these strategies is their focus on **self-regulation**.

Gaming often triggers emotions, from exhilaration and joy to frustration and stress. They develop **emotional intelligence** while gaming involves constructively recognizing and responding to these emotions. If a game generates excessive stress or negative emotions, it may be a sign to take a break, engage

in a different activity, or practise relaxation techniques. Individuals navigate gaming experiences with resilience and a sense of control by cultivating emotional awareness.

This symphony resonates with self-discovery, resilience, and the transformative power of intentional engagement. As individuals embrace these practices, they embark on a journey of empowerment, forging a path where gaming becomes a source of joy, creativity, and connectivity while nurturing a holistic approach to life.

Fostering a sense of agency and control by equipping individuals with the tools to monitor and manage their gaming behaviours. This proactive approach helps individuals recognize the signs of excessive gaming, facilitating early intervention and cultivating healthy habits. These strategies, rooted in scientific research, equip individuals with the tools to navigate the digital realm while safeguarding their mental well-being.

Session 6: Techniques for managing resistance or denial

Young people, as well as the family and social environment surrounding them, are not yet aware of the gaming disorder and its impact on mental health and social life. Not only is there a lack of awareness about gaming being a potential source of addiction, but there is also **resistance** to acceptance that problematic gaming habits are a behavioural addiction that needs medical attention and treatment. This resistance is linked to the social stigma around addictions and seeking treatment.

Effective communication serves as a fundamental pillar of youth work. Proficiency in active listening, using open-ended questions, and responding with empathy can significantly aid youth workers in building strong and trusting relationships with young individuals. When youth workers foster an environment that encourages open dialogue, it creates a safe space for young people to freely express their thoughts and emotions regarding gaming. This lack of judgement allows them to share their gaming experiences and feelings openly (Maynooth University & Tallinn University, 2019). By developing such a supportive environment, youth workers can connect more deeply with the youth they work with, enabling them to better understand their needs and provide appropriate guidance and support.

Having a **non-judgmental and non-stigmatising mindset** is critical for youth workers when dealing with young individuals facing gaming disorders. They should create a safe and supportive environment that is free from shame or blame. By doing so, they can encourage young people to feel comfortable seeking help and sharing their struggles openly (Oakes, 2020). This compassionate and understanding strategy helps build trust and rapport, allowing youth workers to better connect with those they are trying to help. When young people feel accepted and respected, they are more likely to be open-minded to guidance and support, leading to more positive developments in their journey to overcome gaming-related issues.

In the Young Minds website (2023), it is affirmed that youth workers play a vital role in supporting young people's mental health and well-being. Active listening is an essential skill that can help you create a safe and supportive space for young people to talk about their feelings and experiences. **Active listening** is a way of

listening attentively to someone and demonstrating that you are fully engaged in the conversation. It involves not only hearing what someone is saying but also understanding their emotions, thoughts and concerns. By actively listening, you can help young people feel heard and understood, which can be a powerful tool in building trust and supporting their mental health. By practising active listening, you can create a safe and supportive environment for young people to talk about their mental health. Remember to be patient and non-judgmental, and to show that you care about what they are saying. Your support can make a real difference in helping young people to manage their mental health and build resilience for the future.

Pay attention: when a young person wants to talk, demonstrate you're paying attention to them and taking them seriously. Stay focused on what the young person is saying and listen without interrupting or judging. **Eye contact** is often important, but too much may be intimidating and some people don't like much eye contact at all. Avoid distractions such as having your phone out or other conversations happening around you.

Validate their feelings: validating someone's feelings means acknowledging that their emotions are real and important. You can do this by saying things like "It's okay to feel that way" or "I can understand why you would feel that way".

Acknowledge their experience/perspective: give space for the young person to express their feelings without judgement or interruption, and reflect their feelings back to them. For example, "It sounds like you're feeling really sad about this".

Ask open-ended questions: open-ended questions are questions that require more than a yes or no answer. They encourage young people to talk more and share their thoughts and feelings. Examples of open-ended questions include "How did that make you feel?" or "What happened next?"

Make space for silence: it can be tempting to jump in and fill the silence with an offer of advice, a solution or your own experience. However, it's important to remember that making space for silence gives the young person the chance to consider if there's anything else they want to share. Often silences aren't as long as they can feel, particularly if a young person is sharing something that feels big or unknown to them. Make sure your **body language** remains engaged, so the young person knows you're still paying attention.

Paraphrase and summarise: paraphrasing means repeating back what the young person has said in your own words. This can help to clarify any misunderstandings and show that you have understood. Summarising involves putting together the main points of what the young person has said. In both instances, try not to put your own perspective on what they have said. When young people hear their comments reflected back, it can help them see the bigger picture and identify patterns themselves. Paraphrasing and summarising are both used in active listening.

Judging: it's important to avoid judging or criticising what the young person is saying. Even if you don't agree with their point of view, show them that you respect their perspective.

Getting distracted: being distracted or not fully present during the conversation can make the young person feel like you are not interested in what they have to say. It's important to give the person speaking your full attention and demonstrate that you are fully engaged in the conversation.

Giving uninvited advice: you may be tempted to offer advice or solutions to young people's challenges. However, it's important to remember that your role is to listen and support them rather than to solve their problems. Instead, encourage young people to come up with their own solutions and offer support in helping them to do so. This way young people will be empowered to create their own solutions and acknowledge they are capable of doing so.

Interrupting: interrupting someone while they are speaking can make them feel like you are not really listening to them. It's important to give the person speaking your full attention and let them finish speaking before responding. Make sure you have the time for the conversation before you start, or else arrange a time when you can talk.

Making assumptions: making assumptions about what the young person is thinking or feeling can be problematic. Instead, ask open-ended questions and let them tell you in their own words.

Cian (2021), about the youth worker's role in promoting youth mental health, suggests that:

Youth workers should promote opportunities for informal conversations: the environment where people meet can influence their communication and what they choose to discuss. A lot of interactions happen in relaxed spaces with natural

opportunities for conversations, like when playing pool or working on different projects.

If a young person wants to discuss their mental health but isn't at ease in formal environments, laid-back settings may be better for more personal conversations. Relaxed, informal spaces provide opportunities for youth workers to see signs that a young person may be struggling with their mental health. It might be easier to interact meaningfully and to support them in these places.

Youth workers should use appropriate terminology: the terminology you use should be accessible for young people. How you speak with your colleagues may be different from how you speak with young people.

Consider the language young people use in case some words or phrases are overused or misused. For example, someone might tell you that they suffer from anxiety, but what does that mean to them? Having the same understanding of language can make sure you and the young people you work with are on the same page.

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Annex: Role-playing activity: practising identification techniques

This role-playing activity aims to allow the practice of identification techniques for gaming disorder, recognizing signs and symptoms.

Materials Needed

- Scenario cards (cases described below)
- Role-play character descriptions (for each participant)
- Discussion guide with sample questions

Instructions

a. Divide the participants into small groups.

b. Distribute the scenario cards and role-play characters to each group.

c. Explain the objective of the activity: to role-play scenarios involving individuals who may or may not be experiencing gaming disorder and to identify signs, symptoms, and appropriate actions.

d. Each group selects a scenario to role-play.

e. Allow time for participants to prepare their role-play, and familiarize themselves with the scenario and character.

f. Begin the role-playing activity, encouraging participants to stay in character and engage authentically with the scenario.

g. After each role-play scenario, facilitate a discussion within the group using the provided discussion guide. Encourage participants to share their observations, and identify signs of gaming disorder.

h. If you have time, you can rotate scenarios among groups until each group has had the opportunity to participate in multiple role-plays.

i. Conclude the activity with a debriefing session, summarising key insights, identification techniques, and intervention strategies.

Scenario Cards (Examples):

Case 1

Scenario: A 16-year-old high school student, Alex, has been experiencing a decline in academic performance. Alex's teachers have noticed a significant drop in grades and participation in class activities. Alex's parents are concerned about the amount of time spent gaming and the impact it may be having on their child's academic success and overall well-being.

Role-play participants:

1. Alex (the student gamer)
2. Alex's parents
3. School counsellor or teacher
4. Youth worker

Case 2

Scenario: John, a 27-year-old office worker, has been increasingly isolated from his friends and family. He spends most of his free time playing video games online, sometimes staying up late into the night. John's partner is worried about the lack of communication and quality time spent together. John's performance at work has also been affected, with missed deadlines and decreased productivity.

Role-play participants:

1. John (the adult gamer)
2. John's partner
3. Co-worker or supervisor
4. Youth worker

Case 3

Scenario: Sarah, a 14-year-old girl, has been exhibiting signs of irritability and withdrawal from family activities. She spends most of her time in her room playing video games on her computer or gaming console. Sarah's parents are concerned about her emotional well-being and the amount of screen time she's accumulating.

Role-play participants:

1. Sarah (the adolescent gamer)
2. Sarah's parents
3. Sibling or friend
4. Youth worker

Case 4

Scenario: Mark, a 20-year-old college student, has been neglecting his studies and social life due to excessive gaming. His roommates have noticed that he rarely leaves his dorm room except for classes and meals. Mark's grades are slipping, and he seems disinterested in his academic pursuits.

Role-play participants:

1. Mark (the college gamer)
2. Roommates
3. Academic advisor or professor
4. Youth worker

Discussion Guide (Sample Questions):

a) What signs or symptoms of gaming disorder did you observe in the role-play?

b) How did the individual's behaviour impact their relationships, academic/work performance, and overall well-being?

c) How might you approach the individual or their loved ones about your concerns?

d) What resources or professional help could be recommended for someone experiencing gaming disorder?

e) What strategies or support could help address gaming disorder in this scenario?

Conclusion

By engaging in this role-playing activity, we expect participants to deepen their understanding of gaming disorder, enhance their identification skills, and develop strategies for supporting youth who may be affected by excessive gaming.

Learning Objectives

Skills
- Develop the ability to assess the multifaceted impacts of gaming disorder on young people.
- Acquire skills to identify psychological, physical, family, social, community, and academic effects of gaming disorder.
- Learn strategies for addressing each dimension of gaming disorder impacts in a holistic and integrated manner.

Knowledges
- Gain an understanding of the psychological effects of gaming disorder on youth.
- Learn about the physical health consequences of excessive gaming.
- Understand the impact of gaming disorder on family dynamics.
- Explore the social implications of gaming disorder.
- Examine the community-level effects of gaming disorder.
- Recognize the academic consequences of gaming disorder.

Attitudes
- Foster empathy and compassion towards individuals and families affected by gaming disorder, recognizing the complexity of their experiences.
- Cultivate a non-stigmatizing attitude towards individuals struggling with gaming disorder and their support networks.
- Develop an appreciation for the interconnectedness of various aspects of life affected by gaming disorder and the importance of addressing them collaboratively.

Behaviours

- Demonstrate the ability to assess the psychological, physical, family, social, community, and academic impacts of gaming disorder.
- Advocate for comprehensive support systems and resources within communities to address the diverse impacts of gaming disorder effectively.

Learning Activities and Flow

1. The psychological, physical, family, social, community and academic (short and long term) impacts of gaming disorder (05 mins)

   1.1. Physical impact (15 mins)

   1.2. Psychological impact (25 mins)

   1.3. Social impact (10 mins)

   1.4. Academic impact (10 mins)

   1.5. Family impact (05 mins)

   1.6. Community impact (10 mins)

   1.7. The positive impacts (10 mins)

Needed materials

- PowerPoint Presentation for chapter 5
- Exercises: quizzes/questions about the impacts of Gaming Disorder
- Paper
- Pens and pencils
- Devices (mobile phone/computer) with access to the internet

Session 1: The psychological, physical, family, social, community and academic (short- and long-term impacts) of gaming disorder

In 2020, there were an estimated 2.7 billion gamers worldwide, and the number is still rising. This rise in the popularity of video games has led to a significant increase in people experiencing the negative effects of video games. Although not all gamers experience negative effects from gaming, and those effects vary from person to person, many do. Video game addiction statistics find roughly 2-3% of gamers can become clinically disordered.

According to Adair (2021), gaming disorder is known to produce a range of **symptoms** such as:

1. Poor sleep hygiene
2. Physical health atrophy
3. Exhaustion
4. Dehydration
5. Obesity and heart problems
6. Aggression
7. Lack of motivation
8. Depression
9. Suicidal thoughts
10. Social anxiety
11. Poor emotional regulation
12. Interpersonal conflict

Like many addictions, excessive video game use is often the root cause of these symptoms. The more time spent gaming, the more other essential aspects of life get neglected, such as social life, career, family relationships, mental well-being, and physical health.

Gaming disorder has severe consequences on the mental, physical and social health of the person suffering from it. It's crucial to recognise that the symptoms

may vary from person to person, but gaming disorder is known to lead to a range of consequences.

Session 2: Physical Impact

As Pereira (2023) reports, regarding the health consequences of addiction to the internet and video games, it can lead to neglect of personal hygiene, unhealthy sleeping habits, an inadequate diet that favours quick and easy-to-prepare meals and less physical activity. Some of its physical consequences can include headaches, back or neck pain, insomnia and difficulty sleeping, Carpal Tunnel Syndrome and/or seizures.

Adair (2022) reports that spending extensive hours a day playing video games can have serious consequences on physical health. Neglecting regular meals, drinking water, exercise and overall well-being is common among gamers absorbed in their virtual worlds. The negative physical effects of gaming addiction encompass poor sleep hygiene, dehydration, physical health atrophy, poor concentration, heart problems, and obesity. These consequences can, in turn, affect mental health, forming an interconnected cycle. Poor sleep habits can lead to depression and anxiety, while inadequate nutrition and hydration cause headaches, muscle loss, and more severe health issues. Physical health atrophy, obesity, and heart problems can result from prolonged inactivity due to excessive gaming. Additionally, gaming's demanding focus and fixation can hinder concentration on other tasks like schoolwork or career obligations. Proper attention to these physical and mental aspects is essential to maintaining overall well-being and avoiding the detrimental impacts of gaming disorder.

Adair (2021) reports that spending hours every day sitting in front of a computer playing video games can have severe implications for physical health. When you spend most of your time sitting in front of a screen absorbed in games, it is easy to forget to eat regular meals, drink water, exercise, and take care of your overall health.

As Matt, a sufferer of gaming disorder who overcame it, shares:

"*I was tired of playing games for 18-24 hours straight from Friday afternoon to Saturday afternoon and then 16 hours on Sundays. I was tired of going home after work and playing for 6 hours, and not sleeping. I was tired of feeling numb*

afterward and turning to porn to feel a little more alive. I was tired of not eating three meals each day." Adair (2021).

Some of the most common negative physical effects of gaming addiction include:

1. Poor sleep hygiene
2. Dehydration
3. Physical health atrophy
4. Poor concentration
5. Heart problems
6. Obesity

And these negative physical consequences symptoms of gaming will also start affecting mental health. It's important to note that both are interconnected.

Poor Sleep Hygiene

Inadequate sleep is a common phenomenon for gamers. For example, take Jack from Michigan, who said the following of his sleep habits:

"*Looking back, it's pretty clear I had a problem. I started sleeping less and found myself not enjoying life as much. As a result, I became depressed and anxious.*" Adair (2021).

If you neglect sleep every day, it will eventually carry over to other parts of your life. You won't be able to stay focused in other areas of your life like school, work, or even everyday life, which will inevitably affect your performance in those areas of your life. Hours of gaming daily often result in less sleep, especially if you play later at night or with gamer friends from different time zones. It's easy to play "just one more game," which results in "just one less hour of sleep." Excessive gaming can lead to poor sleep hygiene and other adverse physical health effects.

Sleep deprivation also leads to impaired memory and relationship stress, significantly diminishing your overall quality of life. Adequate sleep is essential for overall health. Depending on your age, at a minimum, experts advise you to sleep between 7 to 9 hours per day, but if you play games well into the night, this is

nearly impossible. It can be challenging to function normally when you only sleep a couple of hours or do not sleep at all.

Dehydration and Poor Diet

When you play games for several hours straight, you forget to eat, drink, and keep yourself healthy. Without the proper nutrients and water, your body will not be able to function correctly. You'll experience headaches from dehydration, and a poor diet will lead to muscle loss. Long-term, a poor diet may even lead to more profound negative health consequences, such as irritable bowel syndrome, celiac disease, and in extreme cases, cancer.

If you forget to eat three meals a day and/or drink at least 2-3 litres of water due to your gaming habits, you will experience harmful side effects.

Physical Health Atrophy, Muscle Atrophy, Obesity, Heart Problems

The less you move and exercise, the more your body will start to suffer. Typical examples are weight gain, muscle loss, stiff joints, and poor posture. Regularly sitting in the same position for the entire day can have other severe consequences for your physical well-being, such as chronic headaches and neck and back problems.

Video gaming has a relatively low correlation with obesity, but it's important to note that around 1% of all gamers will suffer from it due to excessive gaming. Obesity can also lead to heart problems and heart-related disorders.

For example, one of the most well-known professional League of Legends players, Jian Zihao (also known as Mad-Dog or Uzi), has recently quit video games due to his diagnosis of type 2 diabetes and other health-related problems from a fatty diet and lack of exercise. He attributed these health consequences to excessive gaming.

"*I regret to inform you all that I am making the decision to retire. The doctor has told me that if I continue, there could be serious complications. Thank you to my fans for your support and companionship all these years.*" Adair (2021).

Poor Concentration

Gaming demands focus and concentration; it demands your full attention. However, the more you play or become preoccupied with gaming, the more difficult it is to concentrate on other tasks such as your schoolwork or career.

A symptom of gaming disorder is called "pre-occupation," which means you find yourself constantly thinking about games when you're not playing and experience difficulty focusing on other tasks.

As Jason shares in How Quitting Gaming Helped Me Get Into Grad School, "*When I was not gaming, I was thinking about gaming, and when my girlfriend was talking to me, it was getting harder and harder to focus. After 20 hours of gaming in a weekend, I knew that I had become addicted again.*" Adair (2021).

Since he stopped gaming, Jason has found it easier to focus and be productive. We have a limited amount of energy, focus, and concentration to use each day. Use it wisely.

Session 3: Psychological Impact

When we talk about video games and mental health, we primarily consider the mental health effects of excessive gaming but, in moderation, playing video games may not have strong negative effects on mental health. The gaming habits of most addicted gamers are much different: they play other, more addictive games that are also more toxic, and many gamers play for more than four hours a day. The more you play, the more you may neglect other aspects of your life. And this also means that the more your mental well-being is going to suffer. With that in mind, let's take a look at the most common effects of gaming on mental health (Adair, 2021).

Pereira (2023) proposes that regarding emotional and psychological consequences, children and adolescents with behavioural manifestations of internet and video game addiction can experience depressed mood, low self-esteem, social anxiety, low frustration tolerance, anger and feelings of guilt and shame for not being able to control their addictive behaviours.

Adair (2021) says that the physical and mental negative effects of video games go hand-in-hand. When your physical well-being suffers, so does your mental well-being.

As Vadim, a gaming addiction sufferer for 22 years, describes how his physical and mental symptoms were connected:

"*At some point, it got so bad I needed to quit university so that I could recover. But I couldn't do it for very long. I wasn't healthy, I had almost no friends, and gaming became my coping mechanism. As a result, I was very depressed and lonely.*" Adair (2021).

Video Games and Depression

Depression is one of the most common comorbidities that gamers have, according to Gonzalez-Bueso et al. (2018). This study found up to 89% of problem gamers are also diagnosed with depression in addition to video game

addiction (Adair, 2021). One of the main questions we have regarding video games and depression is: does gaming cause depression, or are video games the coping mechanism for depression, exacerbating the original mental health problem?

As gamers start playing video games more and more, they begin to neglect other aspects of their lives. For example, they don't have as many social relationships and ignore healthy habits such as exercise and diet. All of that can make you depressed or worsen existing depression. Gamers also use video games to alleviate their symptoms of depression. They turn to gaming as an escape and way to cope with their depression, but in the end, the gaming starts to worsen their depression, not fix it. Most studies that we have so far show us that excessive gaming can lead to depression and a clear link between the two.

Gaming and Social Anxiety

Social anxiety is another common comorbidity of video game addiction. If you think about it, it makes sense – the more you play video games, the more you lose contact with your real-life friends, which can, in turn, lead to experiencing social anxiety.

But the same can be said about social anxiety as can be told about depression. Many people turn to video games because they are socially anxious and struggle with physical world friendships. Games offer an escape from real life; plus, they allow gamers to socialize with people online with little to no risk. And when they do that, they start neglecting real-life relationships, worsening their existing social anxiety.

If you rely on video games and online platforms for socializing, you lose out on the many benefits of having friends in real life. You don't get to have adventures that you might have in your life, you don't meet new people, and even if you do, the relationships online may not be as genuine as they are in real life. (Adair, 2021).

Depression and Social Anxiety

There is debate on whether gaming directly causes depression and social anxiety, as the studies on this matter are not yet fully complete.

However, research such as Tortolero et al. (2014) found a link between video games and depression. The study found that playing video games for more than 2 hours daily significantly increased the risk of depressive symptoms in gamers.

Participants in their case studies report the link between gaming disorder, depression, and social anxiety. They share significant improvements in their overall mental health once they stopped gaming excessively and overcame their addiction.

For example, Matt says this about his battle with gaming-induced depression:

"*Shame and regret are two of the biggest negative emotions you can feel, and they often contribute to relapse and emotional spirals into deeper depression and anxiety.*".

Other studies have also found that excessive gaming can lead to lower self-esteem, which can also be a contributing factor to depression and social anxiety.

Although we cannot state that gaming causes depression or depressive symptoms, it is well established that neglecting one's physical and mental well-being for prolonged periods, as gamers often do, leads to mental health issues (Adair, 2021).

Procrastination and Escapism

Anxiety is a feeling of unease and fear that many people get because of their inability to predict what will happen in the future. Everyone gets anxious from time to time. For many people, this happens because of school exams, job interviews, or simply before attending an important event. As such, gaming does not cause anxiety but it can, however, worsen it in some cases.

This can happen if you turn to video games as a form of escapism. Video games can allow you to escape from the real world to forget about the problems you have in real life. This can be a great thing if you come home from a long day at work or in school. Video games can allow you to jump into another world where you forget about everything that's bothering you. But if this happens too often and if you start neglecting those problems in real life because video games offer you an easier, more comfortable escape, then it can become a problem. The anxiety will eventually become even worse knowing that you haven't managed to address

those nagging issues you might have in your life. Eventually, life is going to catch up with you. And when that happens, the problems are going to start accumulating to the point where you can't manage them successfully any longer, which will result in even more anxiety.

So, gaming itself may not cause anxiety, but if you turn to playing video games to escape the problems, it can significantly worsen the existing anxiety (Adair, 2021).

Aggression (Adair, 2021)

Playing violent video games does not increase an individual's levels of hostility.

Several studies have shown that when we play video games, our amygdala calms down, which leads to the suppression of our feelings. After excess use and gaming addiction, you can feel restless and aggressive, and aggression is also one of the withdrawal symptoms of gaming disorder.

Interpersonal Conflict

Video games and gaming addiction are often responsible for interpersonal conflict.

Redmond's (2010) comprehensive study on the effects of video games and interpersonal relationships shows that video games can harm relationships that gamers have with other people – including family members such as siblings, parents, and other people. The study also confirms that playing violent video games can have a more pronounced negative effect on gamers' interpersonal relationships with other people. On the other hand, non-violent games can improve the quality of interpersonal relationships compared to violent games.

In addition, many online games that gamers play nowadays, such as League of Legends, Rocket League, Fortnite, Roblox, Genshin Impact, or Grand Theft Auto, have toxic online communities. The toxicity of these communities can translate to worse relationships with other people. All the anger and frustration gather inside like a hurricane that is released on other people.

So, although games can provide social opportunities, sometimes those social opportunities can lead to worse relationships with other people, which can negatively affect other aspects of your mental health, too. (Adair, 2021)

Poor Emotional Regulation (Adair, 2021)

Emotional regulation is the ability to be in control of your emotional state. Although you don't always have control over the emotions you experience, you do have control over how you respond to them. When you have good emotional regulation, you can exert influence over your actions despite your present emotional state.

Studies show that excessive gaming can lead to poor emotional regulation. Poor emotional regulation contributes to mood problems such as anxiety, depression, and aggression.

Gaming Causes Poor Emotional Regulation

One of the biggest negative effects of video games can lead you to struggle with regulating your emotions properly. Yen et al. (2018) show that people diagnosed with Internet gaming disorder are more likely to be aggressive, depressed, and anxious. The main mechanism that leads to those comorbidities is their inability to regulate and control their emotions, such as anger, sadness, fear, or other emotions. That's because video games are often seen as a way of escaping your emotions. As a result, many gamers, especially young gamers and teenagers, play video games because they may have underlying negative emotions.

However, video games don't solve their problem and temporarily numb those negative emotions. On the contrary, playing video games excessively will make those emotions even more intense, especially if you play video games every day for several hours.

When you have good control over your emotions, you can control your actions better by controlling your emotional state. Excessive game time can cause you to develop skill deficits, such as regulating your emotions. (Adair, 2021)

Lack of Motivation

Playing video games in excess is also responsible for a lack of motivation. We hear from many parents concerned about their child and their lack of motivation to do other things than play video games all day and wonder if gaming is making people lazy. This happens because video games address many of the needs that you would satisfy with other activities such as hobbies. For example, video games allow you to progress and level up your skills, which is one of the core needs of human existence. Furthermore, video games also allow you to stay social, get creative, and get immersed as they act as this massive time sink.

When you play video games too much, you don't have the motivation to do other things because video games address all of the needs that other activities usually do. A good solution for this is to try as many hobbies as possible to replace your gaming habit (Adair, 2021).

Lack of Motivation and Dopamine Addiction

Lack of motivation to engage in activities other than gaming is a common problem that gaming addicts report. Gaming is a hyper-stimulating activity that can be more engaging than activities you can find in the physical world.

This issue may connect to how your brain responds to the dopamine rush you experience playing games. When you play games, your brain starts to produce significant amounts of dopamine, which is the neurotransmitter that induces the feeling of pleasure.

Thus, when you play for prolonged periods, your brain may get used to the rush of dopamine and high levels of stimulation, leading to no longer finding fewer stimulating activities interesting. When gaming becomes the only activity your brain finds pleasurable, a lack of motivation to participate in other activities is a natural outcome.

Unfortunately, even when you stop playing games, it may take time for your brain to re-calibrate and for you to enjoy experiences that include less excitement (Adair, 2021).

Suicidal Thoughts and Other Comorbidities

In more severe cases, gaming addiction can result in suicidal thoughts and other comorbidities.

Cam Adair, the founder of Game Quitters, found himself having suicidal thoughts during his gaming addiction. They began due to bullying and depression but were exasperated when playing video games for up to 16 hours a day. Although gaming provided an escape initially, it eventually led to further withdrawal from life. When hope for "real life" was lost, his suicidal thoughts became more common.

Cam's experiences are shared by other gaming addicts as well.

José began gaming at 8 years old with free-to-play MMOs (Massively Multiplayer Online Game). When he became a teenager, he would wake up late, skip classes, skip showers, and play video games. They were like a literal drug he'd take to numb himself. "*I was ashamed to be seen (and smelled) in my state, so I went out of my room less and less. I became a shut-in, and the only thing I did was gaming.*"

Individuals and families of people suffering from gaming disorder should take suicidal thoughts and ideation seriously. Treatment is required.

Anthony from Philadelphia also started to have suicidal thoughts, and that's when he decided to turn things around: "*I felt I had been wasting my life in a virtual world while the real world was out there waiting for me. So, when I started to experience suicidal feelings, I knew I needed help.*".

When video gaming addiction gets out of hand, some individuals may begin having suicidal thoughts. The problem with video games and addiction to games is that they can quickly spiral out of control. You start to lose focus and track of other activities in your life and before you know it, playing video games becomes the only thing and your only priority in life.

If you experience suicidal thoughts, then your gaming addiction has already spread through other areas of your life so much that it's heavily impacting the quality of your life. At this point, treatment is the most viable option. (Adair, 2021)

Session 4: Social Impact

Pereira (2023) argues that, regarding social consequences, since children and young people with behavioural manifestations of internet and video game addiction spend a lot of time online, they spend less time interacting with others, which can lead to feelings of isolation and loneliness, and the loss of friends and relationships.

Adair (2022) in his online article "*The Social Effects of Video Games*" states that excessive gaming can negatively impact social skills due to the lack of face-to-face interaction, the toxic nature of gaming and withdrawal from other social activities. Here are some of the adverse repercussions of unhealthy gaming habits:

Poor social skills

If you play video games too much, you can stop paying attention to your social skills. Developing social skills is one of the most important things you can do in life, but when you spend the entire day in front of a screen, you have few chances to improve that skill. This can lead to a deterioration of social skills, which results in a worse quality of life. We all need social skills, whether it's to find a job, nurture a relationship or make friends.

Luckily, social skills are like a muscle; the more you use them, the more they will grow. However, if you don't work on your social skills at all, they will weaken and decline. As with any skill, it will take time and determination, because at first, you might go through a few awkward experiences before you master your social skills.

Social anxiety

Many young people are stuck in the vicious cycle of gaming-induced social anxiety: they don't develop social skills because they play video games so much, they can't socialise properly because they have social anxiety and don't have the right skills to do so.

People who suffer from video game addiction are more likely to have social anxiety than people who don't play games excessively. This is because social anxiety and gaming disorder are closely related and usually affect each other.

You might develop social anxiety before getting addicted to video games – or it can happen the other way around.

Many people who suffer from social anxiety will turn to video games as a solution and as an escape. It will work in the short term as you forget about other people. However, in the longer term, this will have an even worse effect on your social life. Your social anxiety will further deteriorate because you're not meeting or interacting with other people. If you have social anxiety and you're addicted to video games, it might help if you speak to a therapist.

Loneliness

Constantly playing video games to the detriment of other interests and activities is a slippery slope. You'll start to neglect your friends and family which can leave you isolated and unable to re-establish or strike up new relationships. Some gamers compensate for their loneliness by meeting other gamers online, which can be helpful. However, these friendships are not the same as in-person relationships, so they're not a long-term, sustainable solution for loneliness.

The key to overcoming loneliness – and using video games as an escape – is gradual exposure. You need to try other hobbies that will allow you to socialize and find new friends in the physical world, even though it might seem intimidating at first.

Relationship breakdown

The social consequences of gaming addiction can be devastating. It can put a huge strain on relationships with family members and friends. Lying about the amount of time spent gaming and neglecting others to play video games compulsively can cause conflict, confrontation and even marriage breakdowns.

Depression

There's a strong correlation between social anxiety and other social disorders, and depression. Not everyone with social anxiety gets depressed, but depression is often caused by social anxiety. And as excessive gaming can cause social anxiety, it is also indirectly responsible for depression. If you're socially anxious and don't have well-developed social skills because of playing video games, you probably don't go out very often. As a result, you rarely meet new people, try new

hobbies or have adventures and this can cause depression because life starts to lose its meaning.

Toxicity

The toxic nature of gaming can cause social problems for people who play excessively. If you have a video game addiction, you may well have experienced online toxicity, harassment and hate. Players sometimes try to rationalise toxic gaming culture as a normal part of gaming. Research has shown that toxic behaviour is contagious and regular exposure increases the likelihood that someone will bully and abuse other players in future games.

In the same online article, Adair (2022) states that there are also **positive social effects** of video games. Despite the negative effects of gaming mentioned above, video games can improve social skills. There are some social benefits of gaming:

Prosocial games increase prosocial behaviour

Many prosocial games promote the social aspect of gaming. Some games involve cooperating with other players and talking to them via text or voice chat. This can improve communication skills and encourage social interaction. Gentile (2009) reports three studies conducted in three countries with three different age groups that found that students who played more prosocial games behaved more pro-socially.

Gaming can be an icebreaker

The social aspect of gaming has grown beyond just playing prosocial games. Gaming can be a good ice breaker in face-to-face interactions and is often a popular topic of conversation among students at school and college.

Scholastic esports teams and clubs

There are an increasing number of scholastic esports teams and clubs being formed which encourage social connection. Although players are primarily playing online, other team members are likely to be based locally so there are opportunities to meet face to face and game in person together.

Social media apps

There is an increasing convergence between gaming and social media platforms, such as Discord, that make it easy for players to connect and engage. Discord is a free voice, video, and text app that enables gamers to join a group (video-)chat with one or more other gamers so they can talk in real time while playing.

Session 5: Academic Impact

Pereira (2023) claims that regarding the academic consequences, children and young people often show a decline in their academic performance and school grades. This is due to homework and studying for tests becoming less and less important and prioritised. In adults dependent on the internet and video games, the effects on work performance are similar.

Adair (2022) in his online article "*How Gaming Affects Learning in College*", says that gaming can positively and negatively impact learning and academic performance depending on the level of engagement. Too much of anything, including playing video games, can be a bad thing. Moderation and balance are key.

Playing video games is not always harmful. It can be an enjoyable activity with multiple **academic benefits** including:

- Increased interest in STEM subjects
- Improved problem-solving skills and logic
- Greater multi-tasking ability
- Faster and more accurate decision-making
- Enhanced creativity
- Greater brain efficiency
- Memory enhancement
- Improved cognitive abilities.

Adžić et al. (2021) study measured the differences in academic performance between students who played video games and students who did not. It found that gaming can positively affect educational outcomes. Students who spent equal time playing video games and studying still achieved high grades. The researchers reported that many students adopted a 'work hard, play hard' approach and rewarded themselves with gaming time for studying.

But when gaming takes over a student's life, and the line is crossed between intentional and compulsive use, it can have serious consequences like:

- Lack of motivation and poor focus
- Missed learning opportunities through skipping class
- Lower grades, games affecting learning
- Extended years in college
- Mental health problems including depression, anxiety and stress
- Lack of sleep
- Increased aggression
- Feelings of isolation and helplessness
- Cyberbullying and internet safety risks
- Poor personal hygiene and diet.

The Schmitt and Livingston (2015) US study, explored video game addiction and college performance among male first-year students. It found that video game addiction was negatively correlated with expected college engagement and grade point average (GPA). This suggests that as video addiction symptoms increase, student involvement in college life and academic performance decrease.

Session 6: Family Impact

Pereira (2023) also suggests the possibility of family consequences since addiction to the internet and video games often leads to a deterioration in family relationships. Tension and conflicts between family members increase as requests to reduce or eliminate access to the internet and video games are ignored. Children and young people may deny that the problem exists, try to hide how much time they spend online and accuse their parents of intruding into their lives. Parents themselves may disagree on how to deal with the problem, which can lead to frequent arguments and conflicts.

There might also be some financial consequences since teenagers and adults spend large amounts of money on new video games, in-game features (e.g. a new armour or particular "powers" for your avatar) and computer upgrades (e.g. new computer graphic cards).

Session 7: Community Impact

We believe the community impacts of gaming disorders are similar to the impacts of other behavioural addictions and mental health conditions. We can expect, from short to long-term impacts:

- Gaming disorder can lead to reduced productivity among gamers, affecting their ability to contribute effectively to work, school, or community activities. This reduced productivity can have ripple effects on community organizations, businesses, and educational institutions.

- Community support services, such as mental health clinics, counselling centres, and addiction treatment facilities, may experience increased demand from individuals seeking assistance for gaming-related issues. This strain can impact wait times, availability of resources, and overall quality of care for those in need.

- The short-term consequences of gaming disorder, such as physical health problems and mental health challenges, can contribute to higher healthcare costs for communities. This includes expenses related to medical treatment, therapy, and rehabilitation services for youth affected by gaming disorder.

- Gaming disorder can disrupt social networks within communities, leading to strained relationships, conflicts, and ultimately decreased social cohesion. This disruption may manifest in increased tension among family members, peer groups, and community organizations.

- Over the long term, the economic burden of gaming disorder on communities can escalate due to factors such as reduced workforce participation, increased healthcare costs, and lower educational attainment among affected individuals. This can strain local economies and limit opportunities for growth and development.

- Individuals with gaming disorder may experience long-term social isolation and marginalization within their communities, leading to feelings of alienation and disconnection. This can further exacerbate mental health issues and hinder efforts to reintegrate affected individuals into community life.

- Gaming disorder can have lasting effects on educational outcomes and workforce participation, potentially limiting the prospects of affected individuals. This can result in lower academic achievement, decreased employment opportunities, and reduced economic mobility within communities.

Session 8: The positive impacts

In his online article "11 Positive Effects of Video Games", Cam Adair (2021) sustains that playing video games can have positive effects and benefits when played in moderation. The most notable positive effects of gaming include:

- Improved cognitive abilities
- Improved problem-solving skills and logic
- Increased hand-to-eye coordination
- Greater multi-tasking ability
- Faster and more accurate decision-making
- Enhanced prosocial behaviours
- Better eyesight (attention to detail)
- More physical activity with games that promote physical activity (exergames using Virtual Reality, or Augmented Reality mobile games like Pokemon Go)

Improved Cognitive Abilities: Video games improve some of your cognitive abilities, especially your visuospatial skills and concentration. Visuospatial ability is your ability to recognize and remember objects and the relations between those objects. This skill can be essential for everyday tasks such as driving, finding your way in a city, or making sense of a map or objects around you. Spatial ability is also important in several fields of study, including mathematics, natural sciences, engineering, meteorology, and architecture.

Enhanced Problem Solving and Logic: Gong, D., He, H., Liu, D., Ma, W., Dong, L., Luo, C., & Yao, D. (2015) study showed that gaming improves problem-solving skills and logic. Researchers performed fMRI (Functional magnetic resonance imaging) scans on 27 professional gamers and found they had more grey matter and "heightened connectivity between certain subregions in the insular cortex". In practice, this translates to enhanced cognitive abilities, which include improved problem-solving skills and logic. Many gamers play games that require a great deal of planning, strategic thinking and using logic to achieve goals within the game, so it makes sense that they will have enhanced development in areas of the brain dedicated to problem-solving and logic.

Increased Hand-to-Eye Coordination: Another positive effect of gaming is increased hand-to-eye coordination. A study from Gozli, D. G., Bavelier, D., & Pratt, J. (2014) found that people who play games regularly have better sensorimotor skills than those who don't play video games. These skills are key for faster learning and adoption of tasks that require hand-to-eye coordination, such as bike riding, typing, or other tasks that require you to coordinate the movement of your hands with the movement of your eyes. Games allow you to develop an ability to learn sensorimotor patterns and movements faster and more efficiently, which may help you with tasks in the physical world.

Greater Multi-Tasking Ability: Games have been shown to improve your multitasking ability. This is one of the most notable benefits of gaming because it provides you with the ability to perform your daily tasks better and more efficiently, and also complete many tasks at the same time. Many games force players to perform several tasks at the same time – especially action games. With all of the fast-paced action and hyper-stimulation that modern games provide, gamers may improve their multi-tasking ability.

Faster and More Accurate Decision-Making: Researchers from the University of Rochester (Green, C. S., Pouget, A., & Bavelier, D., 2010) found that video games can help you make decisions faster and more accurately, which can translate into better decision-making ability in real life. The study also found that if you play action games, in particular, you're more likely to make faster and more accurate decisions over non-gamers, and even over players that play slow-paced games. When presented with a problem, action game players were up to 25 per cent faster than players of slow-paced games, and their decisions were also more accurate. This skill can be valuable in areas of work where fast decision-making is crucial such as on the battlefield, or in a hospital, and gamers are primed to make these decisions faster and more accurately.

Enhanced Prosocial Behaviours: Even though excessive gaming can make you antisocial, there are many games out there that promote the social aspect of gaming. Some games involve cooperating with other players and talking with them through text or voice chat, which can improve your ability to work with other people and have better social interactions, even when playing games. The social aspect of gaming has also grown beyond just playing prosocial games. Although

gaming is increasingly social, it is important to maintain a balance of face-to-face interactions and physical world friendships.

Better Eyesight: A study from 2012 conducted by Timothy J Wright and Daniel P Blakely found that people who play games can see more detail, especially in the periphery of their eyesight. This ability to see more detail in your eyesight and the periphery of your eyesight translates to better performance in everyday tasks such as driving. With that said, it is important to give your eyes a break from screens, ideally for a few minutes every hour of use, as excessive screen time may cause eye irritation and eye strain.

Higher Accuracy and Faster Completion of Tasks: Video games may improve one's ability to perform tasks that require accuracy quicker and with higher accuracy. A study by James C Rosser Jr et. al. (2007) examined laparoscopic (abdomen) surgeon training and included young surgeons that play video games to see what effects gaming would have on their ability to perform surgeries and other medical tasks. The study found that surgeons who played video games in the past or recently had 37% fewer errors and completed the task 27% faster than non-gamers. Their accuracy also improved with more playtime. The study found that even with more modest playing time (3 hours a week), gamers performed better than non-gamers. This study suggests gamers do better at tasks that require speed, accuracy, and hand-to-eye coordination.

Some Video Games Promote Teamwork: Video game players play many games that include cooperating with other members of the team to achieve the goal of the game. Some of the more popular games include Team Fortress 2, Roblox , League of Legends, Dota 2, Counter Strike, Rocket League and several others. In a study conducted by Keith, M. J., Anderson, G., Gaskin, J., & Dean, D. (2018), teams that played video games together for 45 minutes performed up to 20% better than teams that were involved in other forms of team-building exercises. This suggests gaming may be a good way to develop chemistry among team members when used as a team-building exercise. The study also shows that some games do have the potential to improve an individual's ability to cooperate with other team members, which is a valuable skill to have in today's job marketplace.

More Physical Activity: Playing games that promote you to stay active might improve your physical health, especially when compared to games where you remain sedentary the whole time. Take Virtual Reality (VR) games as an example. The vast majority of these games will have you moving around or at least standing up, which is already better for your health than playing games where you remain seated. Gamers also find VR gaming more immersive and satisfactory than traditional gaming, so it's only a matter of time before VR games become the norm in the next few years or decades.

Another good example can be given by Augmented Reality (AR) apps like Pokemon Go that allow to blend the real world with a virtual one in a seamless way. The use of VR/AR glasses will likely increase in the future with their prices becoming more and more affordable and allowing to get rid of the intermediation given by a smartphone or a computer. This might represent a great opportunity to link games with the real world.

In addition to all the main positive effects of video games, there are also some other effects that many gamers report, including:

- Non-native English speakers can learn English faster using video games,
- Games require you to persevere with your task to complete the goal of the game, which means they build up your perseverance,
- Video game players are also able to concentrate better and for longer periods than non-gamers,
- Other benefits include better pattern recognition, strategic thinking, risk-taking abilities, and management.

As Adair (2021) puts it, the bottom line is that gaming can be a positive and beneficial experience when played in moderation.

To experience the positive effects of video games, it can be helpful to identify your motivation to play. If you play games in moderation, for fun and recreation, you may experience many benefits. However, if you play games excessively to

escape real-life problems, then you may begin to experience problems from your play, and in extreme cases, develop a gaming disorder.

Playing games can have both negative and positive implications on your quality of life so it's important to be aware of your play and keep it in balance.

We have developed some questions (questionnaires) about the impacts of gaming disorder that can be used as a **conclusion** for this Module. For this activity, please use the Exercises document for Session 5 (Annexes).

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Annex - Activity: Questionnaire

This quiz activity's purpose is to allow the participants of the Capacity Building Program to practice the identification of short- and long-term impacts of gaming disorder: psychological, physical, social, family, academic and community-related.

Materials Needed
- List of questions
- List of questions with the correct answers

Questions

Physical Impacts

1. Which of the following is a common short-term physical impact of gaming disorder?
   a) Improved posture
   b) Eyestrain and fatigue
   c) Increased physical fitness
   d) Enhanced cardiovascular health

2. True or False:
   Excessive gaming can lead to physical discomfort such as eyestrain and headaches.

3. How might gaming disorder affect long-term physical health?
   a) Enhanced immune system
   b) Decreased risk of obesity
   c) Increased likelihood of developing musculoskeletal issues
   d) Improved overall physical endurance

4. True or False:

    Long-term gaming disorder can lead to musculoskeletal problems such as carpal tunnel syndrome.

5. Which of the following long-term physical impacts is associated with gaming disorder?

    a) Lower risk of developing vision problems

    b) Improved cardiovascular fitness

    c) Enhanced hand-eye coordination

    d) Increased risk of obesity

Psychological Impacts

6. Which of the following is a psychological impact of gaming disorder?

    a) Increased self-esteem

    b) Impaired impulse control

    c) Improved social skills

    d) Enhanced cognitive abilities

7. True or False:

    Short-term excessive gaming will not lead to heightened levels of irritability and mood swings.

8. Which of the following is a potential long-term psychological consequence of untreated gaming disorder?

    a) Improved cognitive function

    b) Increased self-esteem

    c) Enhanced social skills

    d) Development of depression and anxiety disorders

9. True or False:

Excessive gaming can lead to heightened levels of stress and anxiety.

10. How might long-term gaming disorder affect one's sense of identity and self-worth?

    a) Strengthened sense of identity and purpose

    b) Enhanced self-awareness and introspection

    c) Decreased self-esteem and confidence

    d) Improved ability to adapt to changing circumstances

Social Impacts

11. Which of the following social consequences can arise from gaming disorder?

    a) Increased involvement in community activities

    b) Isolation from friends, peers and family

    c) Enhanced social skills

    d) Improved empathy and understanding

12. What short-term impact might gaming disorder have on social relationships?

    a) Strengthened bonds due to shared interests

    b) Enhanced communication skills

    c) Increased empathy and understanding

    d) Strained relationships due to neglect and withdrawal

13. Which of the following is a common short-term social impact of gaming disorder?

    a) Enhanced social skills

    b) Increased participation in social activities

    c) Reduced face-to-face interactions

    d) Strengthened interpersonal relationships

14. True or False:

     Long-term gaming disorder can lead to an increase in real-world social connections and relationships.

15. Which of the following long-term social impacts is associated with gaming disorder?

     a) Heightened feelings of loneliness and isolation

     b) Greater involvement in social causes

     c) Increased empathy towards others

     d) Enhanced teamwork skills

Academic Impacts

16. True or False:

     Excessive gaming will lead to decreased academic performance and lower grades.

17. Which of the following short-term academic impacts can be associated with gaming disorder?

     a) Improved concentration and focus

     b) Increased motivation to study

     c) Enhanced problem-solving skills

     d) Decline in school performance

18. What long-term impact might gaming disorder have on academic or career aspirations?

     a) Increased motivation and ambition

     b) Decreased academic or career achievement

     c) Improved decision-making skills

     d) Enhanced creativity and innovation

19. How might gaming disorder affect long-term academic achievement?

    a) Decreased likelihood of pursuing higher education

    b) Enhanced cognitive abilities

    c) Improved time management skills

    d) Increased participation in extracurricular activities

20. Which of the following long-term academic impacts is associated with gaming disorder?

    a) Greater academic success

    b) Improved problem-solving skills

    c) Reduced job opportunities

    d) Enhanced critical thinking abilities

Family Impacts

21. How can gaming disorder affect family relationships?

    a) Strengthen communication and bonding

    b) Increase conflict and tension

    c) Encourage healthy boundaries

    d) Promote mutual understanding

22. Which of the following is a common short-term family impact of gaming disorder?

    a) Strengthened family bonds

    b) Improved communication

    c) Neglect of familial responsibilities

    d) Enhanced empathy towards family members

23. True or False:

Long-term gaming disorder can lead to strained family relationships and decreased cohesion.

24. How might gaming disorder affect long-term family dynamics?

    a) Decreased parental authority and involvement

    b) Increased mutual understanding and support

    c) Enhanced family communication

    d) Strengthened family ties

25. Which of the following long-term family impacts is associated with gaming disorder?

    a) Improved conflict resolution skills

    b) Reduced family stress levels

    c) Enhanced family leisure activities

    d) Increased feelings of isolation among family members

Community Impacts

26. True or False:

    Gaming disorder has no implications for productivity and contribution to society.

27. How might gaming disorder affect one's involvement in community activities?

    a) Increase participation in volunteer work

    b) Decrease engagement in community events

    c) Have no impact on community involvement

    d) Enhance leadership skills

28. True or False:

    Excessive gaming can lead to decreased participation in community activities and events.

29. Which of the following is a common short-term community impact of gaming disorder?

    a) Increased volunteerism

    b) Enhanced community engagement

    c) Decreased contribution to community initiatives

    d) Strengthened community bonds

30. How might gaming disorder affect long-term community involvement?

    a) Decreased participation in civic activities

    b) Enhanced leadership skills

    c) Increased volunteering opportunities

    d) Strengthened community partnerships

31. Which of the following long-term community impacts could be associated with gaming disorder?

    a) Improved community cohesion

    b) Greater societal contributions

    c) Enhanced community resilience

    d) Increased strain on community resources

Correct Answers

Physical Impacts

1. Which of the following is a common short-term physical impact of gaming
   disorder?
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   b) Eyestrain and fatigue
   c) Increased physical fitness
   d) Enhanced cardiovascular health

2. True or False:
   Excessive gaming can lead to physical discomfort such as eyestrain and
   headaches.
   Correct Answer: **True**

3. How might gaming disorder affect long-term physical health?
   a) Enhanced immune system
   b) Decreased risk of obesity
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   Long-term gaming disorder can lead to musculoskeletal problems such
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    c) Improved social skills

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    Short-term excessive gaming will not lead to heightened levels of irritability and mood swings.

    Correct Answer: **False**

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Correct Answer: **False**

15. Which of the following long-term social impacts is associated with gaming disorder?

   a) Heightened feelings of loneliness and isolation

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   c) Increased empathy towards others

   d) Enhanced teamwork skills

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Correct Answer: **False**

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   c) Encourage healthy boundaries

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23. True or False:

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Correct Answer: **True**

24. How might gaming disorder affect long-term family dynamics?

   a) Decreased parental authority and involvement

   b) Increased mutual understanding and support

   c) Enhanced family communication

   d) Strengthened family ties

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   a) Improved conflict resolution skills

   b) Reduced family stress levels

   c) Enhanced family leisure activities

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   b) Decrease engagement in community events

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31. Which of the following long-term community impacts could be associated with gaming disorder?

    a) Improved community cohesion

    b) Greater societal contributions

    c) Enhanced community resilience

    d) Increased strain on community resources

Steps

Present the questions to the participants, either on screen or on paper, and give time for each person to respond to them.

If you have the time and the group is big enough, you can use the 1-2-4-ALL facilitation technique.

If not, after giving sufficient time for participants to respond, you can discuss with the big group their response options, providing the correct answers and debating what feels necessary.

Conclusion

By engaging in this exercise, we expect participants to assess their knowledge and understanding of the impacts of gaming disorder across various domains, deepening their comprehension of the subject.

Learning Objectives

Skills: The skill of identifying healthy gaming habits

Knowledge: Knowledge of alternative recreational activities

Attitudes: Understand the role of adults (parents) in promoting healthy habits

Behaviours: Support the fostering of supportive peer relationships

Learning Activities and Flow

1. Group contract (30 mins)
2. Life puzzles (30 minutes)
3. Self-assessment questionnaire (20 mins)
4. Dare not to game (40 mins)

Needed materials

- Puzzles
- Flipchart
- Self-assessment questionnaires
- Papers
- Markers

Session 1 Prevention

PREVENTION - gr. prophylaktikós

A set of actions and measures used to prevent the occurrence of undesirable and negative phenomena in nature, including human, individual or social life;

The term "prophylaxis" is most often used as: prevention of threats to human health and life, social pathologies and other phenomena that contradict the legal, moral and ethical norms recognised in a given community; preventive activities in different spheres of life are characterised by separate specificity as regards the objectives, methods and means used;

Prevention levels:

WHO divides prevention into three levels

- **Universal** - aimed at everyone, regardless of age or social group. It aims to equip people with knowledge about risk and protective factors, risk behaviours, etc., in order to discourage attempts and risky behaviours.

- **Selective** - targeted at high-risk groups. Applies to people who are engaging in risky behaviour for the first time. It takes the form of educational therapy, skills training or sociotherapy.

- **Indicated** - applies to high-risk individuals and those who can be said to be addicted. In this case, prevention means harm reduction. Interventions at this level require the intervention of professionals, most often medical staff and psychologists/psychotherapists.

Strategies

- informational
- educational
- alternative activities
- interventionist
- harm reduction
- environmental changes

- regulatory changes

A. Informational

It involves providing information on the consequences of risky behaviour. The assumption is that having the information will influence attitude change and result in people refraining from engaging in risky behaviour. This can include running information campaigns that use posters, leaflets and also digital communication channels to reach a wide audience. Examples include a school campaign or talks on the health effects of computer misuse, involving local health experts to provide advice and answer questions from young people.

It is derived from the Social Learning Theory (A. Bandura 1986).

B. Educational

Its aim is to equip people with the right skills. Knowledge alone without having skills may not be sufficient to deal with the rejection of risky behaviour. Workshops and lessons on emotion management, negotiation and assertiveness can be organised as part of this strategy. These programmes are often led by experienced educators and psychologists who teach how to deal with difficult situations without resorting to harmful substitutes.

These can be separate, dedicated activities or topics added to daily classroom activities.

C. Alternative activities

We have very different needs in life - more basic needs as well as higher needs. We also have different developmental tasks throughout our lives. Examples of psychological needs are to belong to a group, to feel successful, to feel satisfied or to engage in socially important activities. If we cannot satisfy our needs we look for other opportunities - also in the form of risky behaviour. It is therefore important to give young people the space to fulfil their needs if their immediate environment does not provide them with this, e.g. through artistic, sporting or social activities.

Such activities not only increase a sense of belonging and self-fulfilment, but also steer them away from negative behaviour.

D. Interventionist

There are times when we don't understand what is going on around us and our problems overwhelm us. This can result in a crisis. It is important to intervene and accompany in crisis moments. Such activities include counselling, psychological support, crisis intervention, helplines and counselling.

As part of this strategy, activities are organised to support people in distress or crisis. Schools can cooperate with local mental health centres or psychological-educational counselling centres to provide the necessary support on site.

E. Harm reduction

These are all activities that help to reduce the harm caused by harmful use or addiction. These are actions taken in the context of indicated prevention. Regardless of the severity of the addiction, we should take action to reduce the damage that has occurred.

In the case of an addict, it will be to reduce the damage already done, such as giving a drug addict a clean syringe or including a gaming addict in physical activity.

F. Environmental changes

Every risky activity has a basis. It may be biological, psychological or social. It needs to be identified and corrected. By eliminating the reason for the action, we can eliminate the problem in the long-term.

This strategy involves the entire environment, the immediate neighbourhood - parents, peers. It aims to make a difference by educating and reinforcing skills. In this strategy, responsibility is spread among teachers/educators, parents and peers.

In doing so, schools can play a key role by making changes to the educational environment that promote the health and wellbeing of students.

G. Regulatory changes

Regulations, existing laws and consequences for non-compliance can be effective in discouraging risky activities. Therefore it is important to introduce various regulations, even at the local level, e.g. rules and regulations in schools, day-care centres, etc.

Regulatory consequences can be a motivation for some people to change their behaviour.

Activity

Create a contract. An unusual contract. A list of rules that will apply in your space. Listen to the youth, follow them. Discuss any proposal that comes up. The idea is that after hearing the proposal of a rule for the contract, each participant should have the opportunity to speak - what he or she means by it and whether he or she really agrees to follow the rule. An additional complication - let the rules be formulated in the first person singular and have positive overtones (without using negations). This can take a lot of time. Finally - everyone signs a contract (can be a name, nickname, symbol).

The Biopsychosocial Model

Addiction is a disease - just like any other disease. This means that it can be completely cured. Therefore, addiction, understood as a psychological disorder, has different origins. In the biopsychosocial model, we see a person as an individual made up of three parts:

- biological
- psychological
- social

If any one of these is defective, it can lead to the individual's illness.

Biological Area

1. **Genetic load** - the presence of the problem in other family members.
2. **Other mental disorders** - the presence of another disorder makes the individual more susceptible to another.
3. **Tolerance** - each person has a different tolerance to ingested substances. If a person "digests" quickly, he or she will need larger doses and more frequent use, which may increase the risk of addiction (by implication, our substance may also be behavioural).

Psychological Area

1. **Anxiety** - understood as a condition and a trait. The higher the level, the higher the risk of addiction.
2. **Self-esteem** - low, inadequate self-esteem is a common cause of risky behaviour and addiction.
3. **Stress coping style** - our resistance to stress and the way we react to it is also important. We can distinguish three response styles:
   a. Focused on emotions
   b. Avoidance and substitution
   c. Focused on solving the task.

Social Area

1. **Family** - the level of family competence (low parenting skills and competence), lack of closeness, different parenting styles of the parents or their difficult relationships are characteristics of dysfunctional families.
2. **Peer group** - a person aged 13-19 needs a peer group to form his or her identity properly. It is a point of reference for the young person, which is why it has such a strong influence on the individual.
3. **School** - if there are difficulties in the early stages of education, there is a high risk of addiction. As education progresses, more and more difficulties arise, leading to resentment towards school and possibly to the abandonment of education in favour of other (more attractive, more "successful") activities.

Session 2 The parent's role

The role of the immediate family and environment is very important. Intervention strategies involve parents in action.

Relationships with parents and siblings, communication, interest in the child, involvement in the child's education and development, enabling the development of interests, organising leisure time - these are all protective factors against addiction.

Only parents have a say in how much time their child spends playing and what games they play.

There are various tools available, known as parental controls. Regardless of the type of device, whether it is a computer or a mobile phone. Many applications and programmes also have the ability to set the amount of time we can use them.

Android: Android devices have the ability to enable the "Google Family" feature, which gives you parental controls - limiting the use of applications, games, etc.

iOS: iOS devices have a built-in feature called "The Time Behind Your iPhone". It's a system tool, so you don't need to install any additional apps.

Computers and web browsers: allow you to install various programs, applications and plug-ins.

Activity

Hand out a test to participants, give them a few minutes to fill it out. If they need help, give it.

After completing the test, talk about the results. You can do it in general - about what each score means, or (if the group is integrated) discuss individual results.

It's worth discussing the participants' opinions on the results, and writing down the conclusions on a common sheet.

The questions in the questionnaire refer to the last 12 months.

	YES	NO
Do you often find yourself thinking about gaming (previous and future games) for long periods of time even while not doing it?		
Do you notice yourself being moody, irritable, annoyed, angry, anxious or sad when you are not able to play?		
Does it happen that you require more time spent, more exciting tasks or quests or more gaming equipment in order to reach the same satisfaction as before?		
Do you find yourself in situations where you know you should play less but find it difficult to stop or reduce the time spent gaming?		
Do you notice that you spend less time engaging in activities and hobbies other than gaming?		
Does it happen to you that you keep gaming even when you know there would be negative consequences (not getting enough sleep, being late to work/school, neglecting duties, having arguments about gaming or spending too much money) as a result?		
Do you find yourself lying to people, purposefully not disclosing to them, or distorting information about the amount of time you spend on gaming?		
Do you rely on gaming in order to escape feelings of anxiety, depression, sadness, guilt or others?		

Were other aspects of your life (work, school, health, relationships) negatively impacted or endangered by your gaming?		

If you answered "yes" to only 1 of the questions, you can be characterized as "safe". If you answered "yes" to 2-4 of the questions, referring to a minimum period of 12 months, you can be considered to be moderately impacted by gaming. If you answered "yes" to 5 or more questions, referring to a minimum period of 12 months, you may be suffering from gaming addiction and should seek professional help as soon as possible (Game Quitters; Adair, n.d.).

Session 3 Healthy (gaming) habits

Access to technology is undoubtedly a great resource, but it is very important to use it in a balanced way. Playing computer games can also have many benefits if we use them wisely.

Healthy habits in this regard require parental involvement and awareness of the pros and cons of gaming.

Too early an introduction, i.e. the age at which a child has access to computer games, can be detrimental to a child's emotional and social development. The amount of stimuli a person is exposed to while playing games can lead to emotional problems, interpersonal disturbances and overload.

Advantages and disadvantages

+ development of cognitive skills

+ opportunity to build relationships and make contacts

+ learning languages

+ developing manual skills and coordination

- inappropriate content

- provoking aggression

- disruption of physical development

- addiction

Educational games can positively influence the development of cognitive skills (problem solving, decision making, attention span). They can also be an engaging tool for language learning. When the plot of the game requires coordination and manual skills also can shape them.

A special type are online games, where there is also interaction with other players, which positively affects interactions.

Not every game is suitable for children and teenagers. It is important to read symbols and labels (such as PEGI) and choose the right games for our children. This will protect them from triggering aggression - games that contain a lot of violence can cause such outbursts. Too much time spent on gaming can have

physical consequences - poor fitness, obesity or spinal defects. Other consequences include loss of social ties and relationships in the real world. It is therefore important to control the time spent gaming as well.

As a consequence, overuse of games can lead to addiction.

Healthy games habits

- **Regular breaks**: lack of breaks and prolonged sitting can lead to health problems, such as back pain, muscle strains and vision problems. Taking regular breaks, preferably every hour for a few minutes, helps relieve stress on the body and eyes.
- **Physical activity**: is needed to maintain health. Regular exercise, such as stretching, short walks or strength training, can help prevent problems associated with prolonged sitting.
- **Proper posture**: maintaining proper posture while playing is key to avoiding back and neck pain. Ergonomic positioning of your monitor, keyboard and chair can greatly improve your gaming experience.
- **Proper hydration and diet**: Water and food are our "fuel." Make sure to stay properly hydrated and eat a healthy, balanced diet.
- **Limit the time spent playing games**: Setting a time limit on gaming can help with balancing personal life, work or study and hobbies. This is especially important for younger players.
- **Social interaction outside of games**: While online games offer opportunities for social interaction, it is important not to neglect face-to-face interactions with family and friends.
- **Get a healthy night's sleep**: sleep is regeneration, which is especially important for us especially during adolescence. Avoiding gaming just before bedtime can help maintain a healthy bedtime rhythm.
- **Eye protection**: Sitting in front of a screen for long periods of time can lead to eye fatigue. Using glasses with a blue light filter, adjusting screen brightness, and following the 20-20-20 rule (take a break every 20 minutes to look at a point 20 feet away for 20 seconds) can help protect your eyesight.

There is a misconception that behavioural addictions do not cause as much damage to the body as chemical addictions. This is because behavioural addictions are not as visible at first glance. However, as can be seen, addiction to computer games also carries health consequences. In extreme cases, it can lead to exhaustion and other serious health consequences. Establishing healthy habits and a balance between gaming and other activities is a recipe for success.

Activity

Give everyone cardboard pieces in various shapes. On every piece there is one of the titles: "sleep, food, family activities, going out with friends, reading books, going shopping, etc.".

In the first part of this activity they need to puzzle up the square of it, BUT there are not enough pieces to do that. Something is missing.

Then, give them a piece with "gaming" on it. Thanks to it they will be able to make the full square.

After that, take away the squares and give them new pieces and ask them to do the same. The titles of the pieces are the same, but the pieces are different. This time they have the piece "gaming" from the start, but it's bigger. They don't have to use all of the pieces but the important part is that they cannot be able to make the full square without the "gaming" piece.

And again – take away the pieces they have and give them another set of pieces, with the instructions that they have to use the piece "gaming". This time it will not be possible to make a square with this piece because it's just too big.

After the activity: talk with them. What do they think about this activity? What is it supposed to show? How to interpret it?

The answer: the square is our life. It is possible that sometimes we feel fulfilled after discovering games. It makes some of our time interesting and activates our brains and just feels good. But at some moment it may take away some things from our lives (time with friends, family, etc). Some people will notice it, some won't. The moment it becomes dangerous is when gaming is so important to someone that not only do they not have time to do other fulfilling things, but they also don't have time for basic human needs like sleep, food etc.
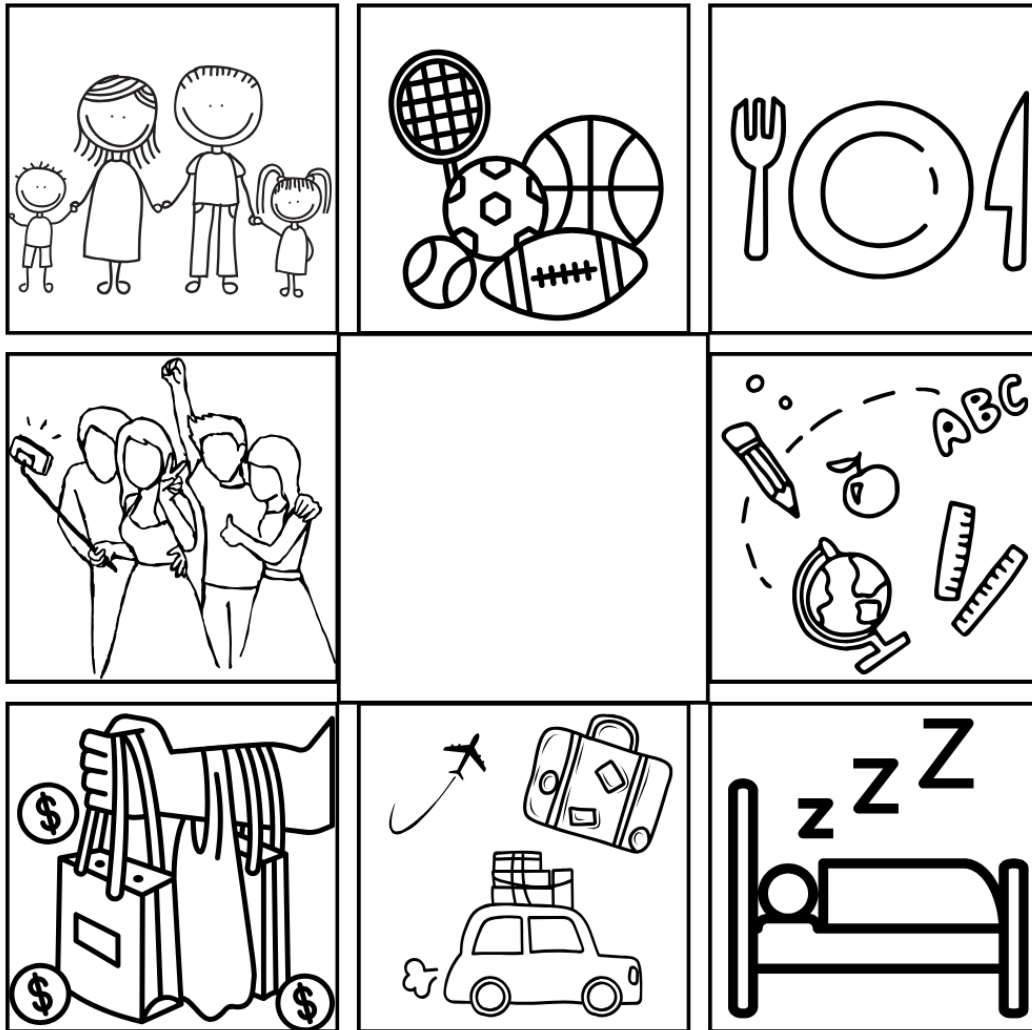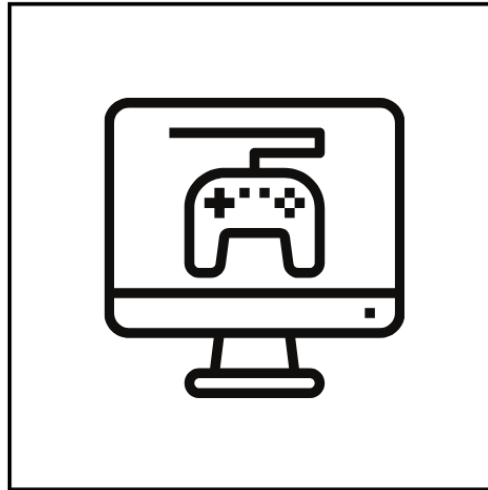
Session 4 Alternative recreational activities

The world offers many interesting activities, just look around. Do the young people you work with know this? Or do they have some interests they can share with their peers? These are the strategies of alternative activities - developing interests and a sense of achievement.

What kinds of activities are there?

- sports
- arts
- theatre
- social activities, volunteering
- The sky is the limit...

How about using the benefits of games...?

Gamification

Gamification is the addition of game elements to any activity (even cleaning or washing dishes). How to do it?

1. Define your goal - what do you want to achieve? Do you want to teach something new? Develop a skill? Increase motivation? Or perhaps create a new habit?
2. Define the "player" - who will take part in the challenge? What do they like to do in their spare time? What motivates him or her?
3. Introduce game elements: storyline, points, badges, difficulty levels, bonuses, rankings, feedback, measuring progress.

(These elements will ensure that no one can resist the challenge.)

4. Create game instructions - the rules must be clear and transparent, otherwise players will cheat!

By following these 4 steps, you can turn your daily work with young people into an amazing adventure. You will gain trust, sympathy and the effectiveness of your work.

Service – learning

"a balanced approach to experiential education" that "can provide an equal focus on both community activities and the learning that takes place here" (Furco, 1996, p. 3).

Service-learning combines three important elements:

- Education - using acquired knowledge to solve community problems
- Internship - acting in response to community needs
- Volunteering - voluntary action leading to skills development

In this method, it is the young people who have the leadership role, the facilitator guides the activities rather than acting as a supervisor. This innovative approach strengthens the method in the young people:

- A sense of agency,
- Responsibility (the success of the whole project requires participation in all phases and taking responsibility for specific tasks),
- leadership
- interpersonal skills
- critical thinking
- reflection and self-reflection skills,
- a sense of community,
- increased awareness of the world,
- increased awareness of one's own values,
- community involvement.

Activity

Gamification - dare to not game

Create your own challenge - challenge in not playing.

Create your own rules and point system.

Divide the participants into smaller teams and assign them different tasks. In the next stage, they are to present the result of their work and discuss it in the forum

- it is important that everyone accepts the rules. Otherwise there is a risk of not following them. Make a scoring system and then a scoreboard together and start your non-gaming challenge as soon as possible !

Talk about how you can spend your time alternatively and write down your ideas in the form of a poster, which will find its place in your space - so that it is visible and draws your attention.

Suggestion 1 - extra points in the challenge for documenting time spent on other activities.

Suggestion 2 - walk around your neighborhood to look for such resources/places.

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Learning Objectives

Skills: The skill of using intervention strategies

Knowledge: Knowledge of different intervention strategies

Attitudes: Understanding the role youth workers can play in providing support and intervention

Behaviours: Applying skills to direct youth to appropriate support resources

Learning Activities and Flow

1. Case studies and role-playing (50 mins)
2. Resources map (30 mins)
3. Meeting

Needed materials

- Case studies
- Flipchart
- Papers
- Post-it
- Markers

Session 1 Intervention

An intervention is an action aimed at solving a problem
intervenire (Latin) - to come between

Intervention is a brief and ad hoc action to reduce anxiety, provide emotional support and a sense of security. It is a very specific form of help, often requiring decisions and specific actions.

Broad understanding: activity that takes place in the area of

- Psychological - providing psychological support,
- Medical - administering medication, performing medical procedures,
- Legal - providing legal advice,
- Environmental - mobilising a natural support group, organising a substitute support group, social assistance such as providing shelter.

Narrow understanding:

- short-term psychotherapy focused on the experiences of a person in crisis;
- is limited to a few or a dozen meetings;
- takes place over a period of 4 to 6 weeks.

Stages of intervention

- Making contact
- Identifying the problem
- Provide support and reassurance
- Identifying solutions
- Building an action plan
- Commitment to action

Conditions of effectiveness

1. First of all, it is important that the person providing support is credible and inspires confidence. It is good if they are professionals. If you do not feel competent, refer the person elsewhere.
2. Secondly, it is important to involve the parents. In most cases, the reason why children and young people engage in risky behaviour is a problem in the family system.

Forms of help

1. **Counselling, advice** - Counselling and advice are a forms of help aimed at direct support in the form of individual meetings. It can take the form of a one-off meeting or a series of meetings, each aimed at diagnosing the situation, understanding the problem and referring to other professionals. The main aim of counselling is not only to impart knowledge, but also to motivate and empower the person receiving counselling to make positive changes in their life.
2. **Psycho-education** - Understood as education for development. It is an activity that aims not only to equip people with knowledge, but also to bring about changes in consciousness. It is meant to empower, give tools and motivate people to be active. It is a form of development-oriented assistance that, through education and skills training, enables people to understand themselves and their problems, which translates into better coping with various life situations. Psychoeducation is often used in the context of mental disorders so that patients and their families can better understand the nature of the problems and the treatments and support available.
3. **Workshops, training** - Group forms of support. Train skills or competences. Can be aimed at both young people and parents.
   - WORKSHOP

Focuses on gaining content knowledge and developing skills. During the workshop we use the experience and plans we already have. It should provide ready recipes for putting the knowledge gained into practice.

- TRAINING

It is about personal development. It is designed to expand awareness based on the experience of the participants. It does not focus on knowledge but on experience.

4. **Support, such as self-help groups** - They are usually a group of people with a similar problem who meet regularly to support each other through difficult times. They can be formal or informal. It can also take the form of recovery counselling. People who have been through a mental health crisis can formally become counsellors. Because of their personal experience, they are better able to support the person in crisis - they have been through a similar journey themselves and can speak authentically about it.

5. **Psychotherapy**, e.g. **cognitive behavioural** - Researched and most effective method of treating mental disorders, emotional problems, difficult behaviour or addictions. It believes that by changing the way you think, you can change your behaviour.

   In cognitive-behavioral therapy, a key step in changing a person's thinking is to understand their beliefs about themselves, their environment and others. The goal of this psychotherapy is to modify thinking in the cognitive aspect and correct actions in the behavioral area.

Cognitive Behavioural Therapy (CBT) techniques:

- **Socratic dialogue** - This is asking questions in such a way as to show the addict the errors in thinking.
- **Thought record** - Aims to look at one's thoughts and verify them. It takes the form of systematic writing down. This allows one to look at them and verify their correctness.
- **Homework assignments** - Just like in a lesson at school - you can give homework. These can be exercises to do or some specific activities. They

will increase involvement in the process and influence verification of beliefs.

- **Exposure** - Deliberate and controlled exposure to an anxiety-provoking stimulus in order to tame it, learn your reactions, and eventually unlearn it.
- **Cognitive reframing** - Result from the application of the previous techniques. This is the gradual replacement of erroneous beliefs with new ones - more appropriate and serving the person.

Motivational Interviewing

Counseling style focused on the "client," and takes the form of a directed conversation. We look to motivate the client to change behavior. We are to support in analyzing situation and overcoming ambivalence which will result in making a change. The relationship is more of a partnership than a formal, expert one.

Key principles

- expressing empathy / reflective listening / mirroring
- deepening divergence
- avoid proving and following resistance
- fostering a sense of self-efficacy

Tools

- O – Open questions
- A – Affirmations
- R – Reflective listening
- S – Summarizing

Processes in Motivational Interviewing

1. **Engaging** - creating a cooperative atmosphere, appealing to the value system, showing respect, partnering, asking for feedback

2. **Focusing** - the goal is to foster change, and your role is to help seek and sustain

3. **Evoking** - evoke and strengthen motivation for change, remember to strengthen self-confidence

4. **Planning** - a good plan is essential, it helps you persevere towards your goal

Techniques

Active listening

Consists of three elements:

- **open-ended questions** - These are the kind of questions to which it is not enough to answer yes or no. By formulating questions in this way, you provoke them to tell a story, to reveal details. You show your commitment and interest. Be careful, however, about asking "why?" It is often interpreted as a form of evaluation. Avoid this by formulating the question "I want to understand why...?".

- **reflective listening** - Listen and hear. Give space to tell a story or answer a question. Wait for silence if you want to say something or ask another question. Maintain eye contact, confirm verbally and nonverbally.

- **Paraphrasing & Summaries** - Use mirroring, that is, summarize what you heard. This will help you maintain context and instill a sense of confidence in you. This will make it easier to understand the whole situation or give you space to correct ambiguities.

Activity

Below are descriptions of the situations of three teenagers. Divide the teens into 3 teams and present a description of the situation (the goals and problems given in the description are the supporting part for the facilitator). Each team should work out 2 elements : define the problem and set goals to achieve, and then act

out the scene. The task of the other teams is to guess the problem and evaluate the solutions proposed in the scene.

The facilitator's task is to moderate the discussion and transfer knowledge.

Situation 1:

Martin, a 16-year-old student, increasingly spends his nights playing online games. His performance at school has dropped significantly, and his relationships with his parents and peers have deteriorated. Martin's parents have also noticed changes in his behavior, including irritability and lack of interest in previously enjoyed activities.

The problem: Martin initially played for entertainment, but over time games became a way to cope with stress. He doesn't want to admit that he has a problem, and any attempts to limit his time spent playing games end in arguments.

Objectives:

- Martin's understanding of the impact of excessive gaming on his life.
- To develop healthy strategies for coping with stress.
- Rebuilding relationships with parents and peers.

Situation 2:

Anna, a 15-year-old, spends most of her free time in the virtual world of Massively Multiplayer Online (MMO) games. Her friends in class see her less and less often, and Anna seems to be increasingly closed in on herself. The teacher has noticed that Anna is often sleep-deprived and has trouble concentrating in class.

Problem: Anna feels unappreciated in real life, but in the game she is successful and valued by other players. She has lost interest in school and rarely meets with friends outside of games.

Objectives:

- To help Anna understand how excessive gaming affects her social life and education.
- To encourage her to seek out activities outside the gaming world.
- To support her in building self-esteem independent of her gaming achievements.

Situation 3:

The parents of Charles, a 14-year-old, have installed software that controls the time he spends playing games, which has caused him strong opposition and arguments. Charles feels controlled and deprived of privacy, leading to increasing conflicts.

Problem: Charles spends a lot of time playing games, which worries his parents. However, their attempt to control him was met with a negative reaction from Charles, who now spends even more time playing games with friends.

Objectives:

- To open a dialogue between Charles and his parents about healthy gaming habits.
- Finding a compromise regarding time spent playing games.
- Learning responsibility and self-regulation by Charles.

Session 2 Role of youth workers

The roles of adults working with youth:

- Observation
- Diagnosis of disturbing symptoms
- Psycho-education
- Contact with family
- Contact with resources
- Alternative recreational activities

Personal contact:

- Create the right conditions - a quiet, comfortable room without distracting features
- Establish rules
- diagnose the situation - know the problem, check motivation, find values (What is bothering you? What do you expect? Have you talked about it before?)
- Emphasise strengths
- Ask questions directly, without complicating things
- Listen and hear
- Be yourself
- Don't take responsibility!

Session 3 Impact programmes

Impact program:

How do you construct an impact programme?

1. define the problem you want to solve
2. describe the causes of the problem
3. translate the defined problem into a goal - you can use the SMART method to do this
4. identify specific objectives
5. select and describe the activities that will enable you to achieve your objectives

SMART Method:

The SMART method is a tool for defining goals in a way that maximises the chances of achieving them. A goal should have 5 characteristics:

S - specific

M - measurable

A – achievable/attractive

R – realistic/relevant

T – time-based

Using the SMART method allows for more effective planning and implementation of goals both in personal life and in managing projects or organisations. It has a wide range of applications in different areas, indicating its versatility and effectiveness.

Attributes of effective programs:

- Preparation precedes implementation
- Implemented as soon as possible - from the moment the problem is identified
- Based on preventive strategies
- Implemented with appropriate intensity
- Planned and detailed
- Include developed materials

- Based on the interests of the audience
- Where appropriate - at the level of young people and parents

Activity

If you have the opportunity, invite a guest to visit you.

It can be a person who has been an addict or a therapist, an interventionist. Meeting such a person will always have a different result than using theoretical tools. It will reduce the distance and break the shame and sense of isolation (among those experiencing addiction).

Session 4 Resources

If there are no adequate resources at your facility you need to find them in the immediate area.

You can contact schools, health centers, NGOs or specialists for this purpose. There are many possibilities.

We encourage you to use the guide we have prepared and a collection of best practices:

https://admin.mindset.succubus.dev/uploads/Mindset_WP_2_Guide_eaf9bc6ac5.pdf

Activity

After role-playing, brainstorm about resources in your area. You can use the Internet for this purpose. List as many places as possible in your area where you can seek help.

Create a poster to hang in a prominent place.

If you have the opportunity, go out into the field and visit such places.

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Learning Objectives

Skills: self-analysis, reflection, fostering and sustaining empowerment

Knowledge: personal assessment of own knowledge and identification of aspects to be improved

Attitudes: open-mindedness, non-critical view on missing knowledge/room for improvement, willingness to learn more

Behaviours: respectful of other participants, engagement in group work

Learning Activities and Flow

1. Introduction to the Self-assessment test for youth workers (15 min)
2. Practice session using the Self-assessment test (30 min)
3. Introduction of the concept and importance of Empowerment in the context of Youth Work (15 minutes)
4. Introducing the Action sheets (15 minutes)
5. Developing an action plan using the Action sheets and other resources (15 minutes)

Needed materials

- PowerPoint Presentation
- Self-assessment test for youth workers printouts
- Action sheets printouts
- Flipcharts, markers

Session 1: Introduction of the Self-assessment test for youth workers

As part of the Capacity Building Program, the Self-assessment test for youth workers includes 4 topics/competence areas to assess the competences of YWs and to help them identify areas of improvement for themselves in the context of countering gaming disorder among youth. It is available as a hand-out tool in its entirety as an Annex to this document, and as an online tool.

The self-assessment test identifies the current qualifications of youth workers and areas of improvement. It also helps to raise awareness about the topic and the urgency to have necessary advanced competences.

The four topics/competence area covered by the self-assessment test are as follows:

- Understanding and Knowledge of Gaming Disorder
- Practical Intervention Skills
- Communication and Empathy
- Collaboration and Guidance

Administering and interpreting the Self-Assessment test results

Each topic/competence area asks 5 respective questions/ statements. The answers are scalable/numerical. That means the assessment in each area for each question will include 5 levels, whereby 1 is the lowest and 5 is the highest.

The answers are 1: Not at all - 2: A bit - 3: Somewhat - 4: Confident – 5: Experienced.

In the handout version, Youth workers will then calculate the points in each competence area as well as overall. With the current number of competence areas which is 4, and the number of questions/statements which is 5, we will have in total 25 questions/statements and each gives a maximum of 5 points. Therefore, in total the assessment is on a scale of 100.

The numerical results obtained reflect the percentage of competence assessed with the youth workers. Since the results are divided into competence areas, it is easy to identify strong points, as well as areas of improvement.

By conducting the self-assessment test, the youth workers get a comprehensive overview of their competences and needs for further training and learning.

Session 2: Practice session using the Self-assessment test

	Competence Area one: Understanding of Gaming Disorder	1	2	3	4	5
1.1	I understand the definition and diagnostic criteria of gaming disorder according to the ICD-11, the 11th Revision of the International Classification of Diseases by the World Health Organization (WHO) and its classification as a mental disorder by WHO.					
1.2	I am aware of the physical, mental, and social symptoms and effects associated with gaming disorder.					
1.3	I have knowledge about the potential causes and risk factors for developing gaming disorder.					
1.4	I am aware of the latest research and developments in the field of gaming disorder.					
1.5	I understand the impact of gaming disorder on a young person's daily life, including their academic performance, social interactions, professional commitment, and physical health.					
	Total Points out of 25 is					
	Competence Area Two: Practical Intervention Skills	1	2	3	4	5
2.1	I am aware of the latest research and best practices when it comes to Practical Intervention Skills in Gaming Disorder.					
2.2	I am aware of how to inform young people and their parents/guardians on the signs, symptoms and potential consequences of excessive gaming.					
2.3	I have knowledge about how to use assessment tests for detecting Gaming Disorder among young people.					
2.4	I am capable of developing tailored interventions to meet the specific needs of young people according to their specific needs and challenges.					
2.5	I have knowledge on different group activities for overcoming Gaming Disorders, their benefits and challenges.					
	Total Points out of 25 is					
	Competence Area Three: Communication and Empathy	1	2	3	4	5
3.1	I understand the emotional struggles of young people battling gaming disorders and how crucial it is to provide them with effective support and guidance.					
3.2	I know that empathetic listening is an essential skill for engaging with young people affected by gaming disorders, allowing them to feel heard and understood.					
3.3	I can recognise the non-verbal cues and body language in gauging the emotional state of young individuals suffering from gaming disorders, providing personalised assistance.					
3.4	I am aware that effective communication involves validating the experiences of young people impacted by gaming disorders while guiding them towards healthier habits and more suitable coping mechanisms.					
3.5	I am capable of building trust and rapport through open, non-judgmental communication as fundamental for establishing a					

		1	2	3	4	5
	supportive relationship with young people dealing with gaming disorders and their network (family, friends, etc).					
	Total Points out of 25 is					
	Competence Area four: Collaboration and Guidance	1	2	3	4	5
4.1	I am aware of the importance to collaborate with parents and families to support a young person suffering from problematic gaming behaviour					
4.2	I feel confident to discuss with parents and I am capable of persuading them of the need to seek treatment against gaming disorder for their child					
4.3	I always consult psychologists and mental health specialists when I suspect that a young person may have symptoms of gaming disorder					
4.4	We organise informative sessions for parents and teachers on how to identify symptoms of gaming disorder and how to support young people suffering from it					
4.5	We collaborate closely with online gaming specialists to keep up with the changes in online games and receive guidance on how to adopt healthy gaming habits					
	Total Points out of 25 is					
	Overall points out of 100 is					

Participants of the training should conduct a practice session using the Self-assessment test above. This activity should last between 30 and 45 minutes, and each participant should individually conduct the self-assessment test. Following the individual work, results obtained, as well as the general impressions of the test should be discussed within the group in order to identify the strengths, weaknesses and potential of the self-assessment test.

Session 3: Introduction to the concept of empowerment in the context of youth work

According to the EU Youth Strategy, "empowerment of young people means encouraging them to take charge of their own lives. Today, young people across Europe are facing diverse challenges and youth work in all its forms can serve as a catalyst for empowerment". Although very broad in its application, for the purposes of this program, empowerment will here be defined as "a process where children and young people are encouraged to take charge of their lives" (Nakrani; 2024). Already by considering this simple definition, we can recognize the value of empowerment in youth work, but particularly in work with youth affected by gaming addiction.

Indeed, empowerment is a crucial aspect of youth work, as it plays a significant role in fostering personal growth, self-confidence, and active participation among young people. As a youth worker, it's essential to recognize and promote empowerment as a foundational principle in our work.

The importance of empowerment, particularly in the context of youth work and related to the topic of gaming disorder is elaborated below.

Personal empowerment contributes to:

Self-Efficacy: Empowerment enhances young people's belief in their abilities to achieve their goals and make positive changes in their lives. It cultivates a sense of self-efficacy, which is vital for navigating challenges and pursuing aspirations. In the context of gaming disorder prevention, self-efficacy is highly important as it is crucial for young people to understand their own working and learning habits and the reward of a process to which they dedicate time and work to.

Voice and Participation: Empowered young people feel valued and respected, which encourages them to actively engage in decision-making processes, both within their communities and in broader societal contexts. This participation fosters a sense of ownership and responsibility. In the context of gaming disorder, it is of crucial importance to young people to be able to honestly and openly voice their experiences, problems, views and issues, and be able to engage with other people in the process of uncovering, examining, sharing and solving their

problems/issues. Being able to engage with people in meaningful ways in face-to-face settings is also a strong deterrent in developing a gaming disorder.

Critical Thinking and Problem-Solving: Empowerment encourages young people to critically analyse their surroundings, question societal norms, and develop innovative solutions to issues they face. It nurtures their problem-solving skills and resilience in the face of adversity. This, in turn, helps them to better understand themselves and their surroundings and enables them to make well-informed decisions about their habits, lifestyle and other aspects.

Resilience and Well-being: Empowerment contributes to young people's resilience by providing them with the tools to cope with challenges and setbacks effectively. It promotes mental well-being and helps them develop healthy coping mechanisms. This is highly important for young people who are increasingly burdened by various personal, educational and societal challenges. Being able to cope with these challenges in a healthy way undoubtedly reduces the chances of unhealthy coping mechanisms such as various addictions.

Empowerment is not a one-stop process in which a person is provided with tools to be empowered, and the process ends there. Rather, empowerment has to be sustained and cultivated, identifying what works for each of us individually and constantly probing it against new challenges that we face in life. Sustaining empowerment can be done in the following ways:

Create Supportive Environments: Foster inclusive and supportive environments where young people feel safe to express themselves, share their ideas, and take risks without fear of judgement or ridicule.

Encourage Skill Development: Provide opportunities for young people to develop essential life skills such as communication, leadership, teamwork, and decision-making. These skills empower them to navigate various situations confidently.

Promote Mentorship and Peer Support: Facilitate mentorship programs and peer support networks where young people can learn from each other's experiences, receive guidance from trusted mentors, and build meaningful connections.

Celebrate Achievements: Recognize and celebrate the achievements and contributions of young people within their communities. Positive reinforcement enhances their sense of empowerment and encourages continued participation.

Provide Access to Resources: Ensure equitable access to resources, information, and opportunities that enable young people to pursue their goals and aspirations. Addressing barriers such as financial constraints or lack of access to education is essential for sustaining empowerment.

The benefits of empowerment are numerous. Feeling empowered does not automatically change one's life, but it significantly alters one's perspective and outlook on life and its various aspects. Some of the benefits of empowerment include:

Increased Confidence: Empowered young people have greater confidence in their abilities, which translates into higher self-esteem and a positive self-image. This allows them to trust themselves, recognize their values, competences and skills and have a proactive and understanding view on the things they can improve about themselves, rather than being highly critical of themselves. They are better able to express themselves, their needs and opinions.

Enhanced Personal and Civic Engagement: Empowerment fosters active citizenship and social responsibility, encouraging young people to participate in community development initiatives and advocate for positive change. This is because it becomes easier to express oneself, one's needs, opinions and views, and create communities that share one's ideas.

Improved Relationships: Empowered individuals are better equipped to establish healthy relationships based on mutual respect, trust, and communication. This positively impacts their interactions with peers, family members, and authority figures. In the context of gaming disorder, this is particularly important as relationships often suffer as a cause of one's gaming disorder, which impairs the individual from openly, honestly and actively engaging with the people around them.

Long-term Success: Empowerment sets the stage for long-term success by equipping young people with the skills, mindset, and resilience needed to

overcome obstacles and achieve their aspirations. This does not mean that empowerment solves every problem an individual is facing, but it equips them with a healthy outlook on the problems they face.

As youth workers, it's crucial to prioritise empowerment in our interactions with young people, recognizing it as a fundamental aspect of their holistic development. By fostering a culture of empowerment, we can empower young people to become active agents of change in both their own lives and communities.

Session 4: Introducing the Action sheets

In our youth workers capacity-building program, Action sheets are tools that can be used to help a target group or a stakeholder to identify specific actions they can take to achieve their goals or address a particular issue. For example, it can be used to address gaming disorders among youth, by following the given steps to raise awareness about the issue. Action sheets include a set of steps or tasks that are designed to guide the target group or stakeholders through a process of identifying their goals, determining the resources and support they need to achieve those goals, and developing a plan of action.

The specific content of an action sheet depends on the project's goals and objectives, as well as the needs and interests of the concerned people. In the MINDSET project, action sheets focus on developing intervention skills among youth workers in order to remain cautious in their youth work, and proactively identify gaming disorder symptoms and issues and provide guidance.

Overall, action sheets are a useful tool for helping youth workers take concrete steps towards achieving the desired goals and building their skills and abilities. By breaking down a complex process into manageable steps and providing guidance and support along the way, an action sheet can empower both youth workers and youth organisations to take action and make positive changes in their work and communities.

The action sheets in the MINDSET project are the reflection of its 8 main topics. Each action sheet is developed in line with the respective topics in the curriculum. They offer a variety of goals and cover different areas such as awareness-raising, prevention, intervention, and so on. The structure of each of our action sheets is as follows:

- Background Information and General recommendations
- Addressed Stakeholders
- Barriers & Challenges
- Short-term Goals
- Long-term Goals
- Short-term Actions
- Long-term Actions

- Good Practice Example(s)

The topics covered by the action sheets include the following:

Lack of awareness and understanding: Many youth workers, educators, parents, and even healthcare professionals lack awareness and understanding of youth gaming disorder, making it difficult to identify and address the issue effectively. Gaming disorder is mostly handled as a subtopic in youth work and not under main focus. It is usually part of the work on general mental health and wellbeing

Insufficient funding for gaming disorder: Adequate funding is essential to support research, prevention programs, treatment services, capacity building, training and public awareness campaigns related to gaming disorder. Limited funding can hinder progress in addressing the issue effectively. It is important to map local and non-local fundings that can support the work on gaming disorder

Stigma and social attitudes: Stigmatisation surrounding gaming disorders can prevent affected individuals and their families and friends from seeking help. Negative social attitudes can also hinder the implementation of effective prevention and intervention strategies, both in youth work and in professional support

Parental and caregiver support: Parents and caregivers play a crucial role in addressing youth gaming disorder, but they often lack the knowledge, skills, and support needed to effectively manage the issue. They represent crucial lines of defence and care because not every young person takes part in youth work or non-formal activities

Co-occurring mental health issues: Youth gaming disorder often co-occurs with other mental health conditions, such as anxiety or depression. It is essential to address these underlying issues simultaneously to achieve successful outcomes. While gaming disorder can be an effect of other mental health issues, it can also be the cause of a different mental health issue

Industry responsibility and regulation: The gaming industry has a responsibility to promote healthy gaming habits and implement measures to prevent excessive and problematic gaming behaviours among young players.

However, the major goal of the industry, like any other industry, is to make the most profit from purchases and subscriptions

Inadequate access to treatment, support, and assessment: Limited availability and accessibility of specialised treatment services for youth gaming disorder, coupled with a lack of reliable screening and assessment tools, present significant barriers to early identification, treatment, and recovery

Physical well-being and sedentary lifestyle: Excessive gaming often leads to a sedentary lifestyle, contributing to physical health issues such as obesity, musculoskeletal problems, and overall reduced physical fitness. Neglecting physical wellbeing can further exacerbate the negative impact of gaming disorder

Session 5 - Activity: Action plan using the action sheets and other resources

At this point, the participants should engage in a group activity of defining a potential action plan that relies on the Action sheets and other MINDSET resources. This exercise serves to contemplate and examine different ways in which the action sheets and other relevant materials can be used.

The exercise should be conducted in the following way. Based on the number of participants in your training, divide them into 3-4 smaller groups. Distribute the action sheets among the smaller groups, so that each group has up to two different action sheets at hand.

Using flip charts and markers, each small group should take 15 minutes to collaborate on the creation of an action plan that relies on the usage of the action sheets allocated to them. This action plan can refer to any target group and context chosen by the small group participants. Following their small group work, each small group should present their action plans to the other participants. The outcomes of this exercise should be recorded (notes, photos) in order to compile ideas in which the action sheets can be practically used by youth workers and other target groups.

Learning Objectives

Skills: Reflection, critical thinking, SWOT analysis, group discussion

Knowledge: Review of the training conducted, assessment of the training process and content, Quality and practical assessments

Attitudes: Reflexive, critical

Behaviours: Participation in the collective effort to evaluate the training in order to make necessary adaptations/modifications

Learning Activities and Flow

1. Experience-sharing, discussion and reflection (30 minutes)
2. Collection of feedback & End of training assessment (15 minutes)
3. Closing remarks

Needed materials

- Flipchart, post-it notes, markers, Google Jamboard
- Post-assessment questionnaire

Session 1: Experience-sharing, discussion and reflection

Following the training conducted, the participants should engage in an open discussion featuring experience-sharing and their personal reflections on the content, flow, timeline, organisation, procedure and all other relevant aspects of the training program. Their inputs should be recorded (photos, notes) and later used in order to improve, expand or modify the training program. Here, participants reflect on what went well, what could have gone better and why, what they feel most secure about, and what causes uncertainty or doubt.

A SWOT (strengths, weaknesses, opportunities, threats) analysis is also strongly encouraged. It can be conducted using physical materials like flip charts and post-it notes, with participants writing and pasting their thoughts, or it can be conducted using online tools such as the Google Jamboard.

Session 2: Collection of feedback & End of training assessment

Here, the post-assessment evaluation questionnaire distributed in Session 1 is distributed again in order to physically collect and store the results for reporting purposes, as well as all potential changes to the training curriculum. Each participant should individually fill out their questionnaire, which will be collected and analysed in the training aftermath. The analysis conducted will be recorded and reported accordingly.

Session 3: Closing remarks

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